IPSA 2026

Florence, Italy | April 8-11, 2026

Poster Abstracts

Presented at the 9th Congress of the International Pediatric Sleep Association

ipsa
international pediatric sleep association

ipsasleep.org

Presenting Author
Adam Pattison-Rathbone (United Kingdom)

Authors
Christine Fyfe (United Kingdom); Adam Pattison Rathbone (United Kingdom); Kirstie Anderson (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P41

Title
Reducing melatonin liquid use for children and young people with neurodevelopmental conditions using a behavioural intervention – a qualitative service evaluation

Introduction
Melatonin regulates the sleep–wake cycle and is commonly prescribed for children and adolescents with insomnia associated with ADHD, autism, and neurogenetic conditions.

Although tablets and capsules are safer, more sustainable, widely available, and cost effective, liquid melatonin is frequently used as many young people struggle with swallowing medication.

KIDZMED intervention - tablet-swallowing training aims to support this transition, but its suitability for neurodivergent children is not well established.

Understanding how and why liquid melatonin is used in practice, and what factors influence switching to solid formulations, is important to guide development of effective interventions for neurodiverse populations.

Materials and Methods
Aims and Objectives

i) to explore clinicians' experiences of practice using liquid melatonin in children and young people with neurodevelopmental conditions.

ii) to explore clinicians' attitudes to switching from liquid melatonin to solid oral dosage forms, including what tools are used and what factors influence their decision-making for children and young people with neurodevelopmental conditions.

iii) to explore clinicians' opinions of the suitability and adaptability of the current KidzMed intervention for children and young people with neurodevelopmental conditions to transition from liquid to solid formulations.

Methods

Participants were recruited via email sent to all clinicians at a single organisation involved in providing psychiatric care to children and young people, with information about the aims and objectives of the study and an invitation to volunteer to take part.

One-to-one, semi-structured interviews were conducted by a single interviewer (CF) using a topic guide based on the study objectives and recorded on Microsoft Teams. This included questions about current practice and showing participants the KidzMed tool.

Transcripts were automatically produced and then quality checked, with errors amended, by listening to the recording.

Transcripts were transferred to QSR Nvivo Version 15 for thematic analysis by two authors, using a coding book (CF, APR). Results and data were reviewed by a third author (APM) to improve integrity through scrutiny, discussion and consensus.

Ethics approval for the study was provided by Newcastle University. The study was registered as a service evaluation and approved by Cumbria, Northumberland, Tyne and Wear Hospitals Mental Health Trust."

Results

Existing behavioural interventions may be suitable for children and young people who are neurodivergent if existing time to practice and process is included. The study is limited by a small sample of clinicians recruited from a single organisation, which means findings may not represent practice in other organisations. However, data saturation was reached, which improves the trustworthiness of the findings. Further work is needed to develop and evaluate the behavioural intervention for use in this population.

Conclusions Existing behavioural interventions may be suitable for children and young people who are neurodivergent if existing time to practice and process is included. The study is limited by a small sample of clinicians recruited from a single organisation, which means findings may not represent practice in other organisations. However, data saturation was reached, which improves the trustworthiness of the findings. Further work is needed to develop and evaluate the behavioural intervention for use in this population.

Acknowledgements

References:

Paterson, A., Richardson, R., Rathbone, A., Blagburn, J., Husband, A., & Kavanagh, J. (2020). Insomnia disorder: management strategies. Pharm J, 305(7939), 10-1211.

Schiff, A., Tarbox, J., Lanagan, T., & Farag, P. (2011). Establishing compliance with liquid medication administration in a child with autism. Journal of Applied Behavior Analysis, 44(2), 381-385.

Tse, Y., Vasey, N., Dua, D., Oliver, S., Emmet, V., Pickering, A., & Lim, E. (2020). The KidzMed project: teaching children to swallow tablet medication. Archives of disease in childhood, 105(11), 1105-1107.

Williams, L., Maycock, T., Hewertson, V., Suththanantha, J., Krieg, J., Kugarajah, S., & Joseph, D. (2025). My child won't sleep! Recognising and managing sleep disorders in children and young people. Paediatrics and Child Health."

Presenting Author
Adrienne Vandenberg (Canada)

Authors
Adrienne Vandenberg (Canada); Elizabeth Keys (Canada); Malka Hershon (Canada); Tai-Lin Michon (Canada); Michelle Ly (Canada); Rachel Ilesanmi (Canada); Muskan Jaswal (Canada); Kyra Jukes (Canada); Niki Soroush-Asghari (Canada); Karissa Vallera (Canada); Marie-Hélène Pennestri (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P03

Title
Public Health Messaging and Attitudes Towards Bedsharing: An Environmental Scan and Inductive Content Analysis

Introduction
Bedsharing, which refers to the practice of parents sharing a bed with their infants, is a complex topic. Parents report choosing to bedshare for many reasons, such as to facilitate breastfeeding or due to cultural factors. However, in Western countries, this practice is often stigmatized, partly due to links with sudden infant death syndrome. Parents often face criticism about their choice to bedshare with their infant and report hiding this practice from healthcare providers for fear of being judged. As such, the role of public health materials about bedsharing is crucial in filling this gap by educating parents non-judgmentally about safer sleep practices. The objectives of this study were: a) to describe and synthesize the communication quality of public health information available to Canadian parents about bedsharing, and b) to describe the information about bedsharing contained in these resources (using a content analysis) to better understand what parents are learning about bedsharing from these resources.

Materials and Methods
An environmental scan was conducted to identify infant sleep resources aimed at parents from Canadian public health organizations using a customized Google search in the Ontario Public Health Libraries Association database including both English and French language resources using the search terms “(baby OR infant) AND sleep”. Resources had to focus on sleep, be written in English or French, focus on infants under 2 years, and be created by a Canadian government or health service organization to be included. Further, resources were scored for whether they contained any amount of information about bedsharing. These resources were then scored according to the CDC Clear Communication Index, a measure of

communication quality and accessibility of information, with a score of 90% considered satisfactory. In a second step, an inductive content analysis was conducted on the bedsharing resources to identify which themes emerge from the resources to develop codes, and resources were subsequently coded by two researchers to ensure agreement.

Results

Preliminary results showed that only 80 of 128 infant sleep resources (62.50%) identified from Canadian public health organizations had any information about bedsharing. Bedsharing resources had a mean overall communication quality of 66.63%, which is considered sub-satisfactory. The most common recommendation towards bedsharing in these resources was abstinence (50.68%), meaning bedsharing was strongly advised against. About a third of resources (34.25%) provided safer bedsharing guidance, while around half (52.05%) gave information about risk factors that make bedsharing more dangerous.

Conclusions

Overall, bedsharing resources from Canadian public health organizations were of sub-satisfactory communication quality, meaning they may be difficult to understand or lack readability. Most resources advised against the practice entirely and did not provide guidance for how to reduce risks for parents who choose to bedshare, which could lead parents to bedshare in ways that increase mortality risks. Understanding what information about bedsharing is currently provided by public health organizations and the quality of available resources is crucial in understanding where gaps exist in the information available to parents, so higher quality resources can be developed that meet the information needs of parents and reduce mortality related to bedsharing.

Acknowledgements

This research was undertaken, in part, thanks to funding from the Canada Research Chairs Program.

Presenting Author
Alessandra Voci (Italy)

Authors
Alessandra Voci (Italy); Martina Proietti Checchi (Italy); Massimiliano Valeriani (Italy); Luigi Mazzone (Italy); Romina Moavero (Italy)

Presentation Day and Board Number
Friday, April 10, 2026 | P04

Title
Narcolepsy type 1 in a child with Prader-Willi syndrome: a case report.

Introduction
Prader-Willi syndrome (PWS) is a rare genetic disorder characterised by hypotonia, hyperphagia, obesity, endocrine abnormalities, cognitive impairment and a high prevalence of sleep disturbances. Central nervous system and hypothalamic dysfunctions are implicated in many clinical features of the syndrome and play a key role in the pathophysiology of sleep disorders. Several sleep-related conditions have been described in PWS, such as obstructive and central sleep apnoea, central hypoventilation, and central disorders of hypersomnolence with hypersomnia or narcoleptic features. However, narcolepsy has not been well documented in individuals with PWS, particularly in the paediatric population.

Materials and Methods
We describe a case of a child with genetically confirmed PWS who developed severe excessive daytime sleepiness (EDS) and was ultimately diagnosed with narcolepsy type 1 (NT1).

Results
The patient, a boy with PWS due to maternal uniparental disomy 15, showed typical early features including neonatal hypotonia, global developmental delay, cryptorchidism, progressive hyperphagia, obesity, scoliosis and moderate intellectual disability. From early school age, the child exhibited persistent EDS with frequent unintended daytime naps at school and at home, despite adequate nocturnal sleep duration. He also had fluctuating obstructive sleep apnoea (OSA), associated with adenotonsillar hypertrophy and rhinitis, with EDS persisting independently of OSA severity. At 8 years of age, he was referred for neurological sleep evaluation. Overnight video-polysomnography (PSG) showed good sleep efficiency and preserved macrostructure. MSLT demonstrated a mean sleep latency of 3.8 minutes with two sleep-onset REM periods (SOREMPs). Although cataplexy was absent, CSF orexin levels were reduced (67.7 pg/mL). HLA-DQB1*06:02 testing was negative. These

findings fulfilled ICSD-3 criteria for NT1. Pitolisant was initiated and resulted in partial but clinically meaningful improvement of daytime alertness and behavioural regulation. OSA was concurrently managed with intranasal corticosteroids and leukotriene receptor antagonists, leading to improvement to mild OSA on follow-up PSG.

Conclusions

This case illustrates that NT1 can occur in individuals with PWS and emphasizes that EDS in PWS should not be solely attributed to sleep-disordered breathing or behavioural dysregulation. Systematic assessment of hypersomnolence with PSG, MSLT and, when indicated, CSF orexin measurement is warranted in PWS patients with persistent EDS despite optimisation of respiratory and behavioural factors. Early recognition and targeted wake-promoting therapy may improve daytime functioning and quality of life in this complex population.

Presenting Author
Alexander Dueck (Germany)

Presentation Day and Board Number
Friday, April 10, 2026 | P05

Title
Objective sleep data collected in the context of a leptin treatment trial in an adolescent patient with anorexia nervosa presenting with comorbid insomnia.

Introduction
Sleep and circadian rhythm disorders are common in Anorexia nervosa (AN). Their role in pathophysiology and treatment has hardly been explored to date. Recent publications have shown that hypothesis-driven off-label treatment with metreleptin in patients with anorexia nervosa (AN) is associated with remarkable psychological improvements (Antel et al., 2022; Gradl-Dietsch et al., 2023; Milos et al., 2020). However, in these case reports, sleep-related outcomes were limited to subjective self-reports. Only one case used a visual analogue scale, while objective sleep measurements were not performed in any of the studies (Milos et al., 2020; Antel et al., 2022; Hebebrand et al., 2023).

Materials and Methods
Case report on the off-label use of human recombinant leptin (metreleptin) in a 17-year-old female patient diagnosed with anorexia nervosa (AN) and pronounced difficulties falling asleep and staying asleep.

Results
For the first time ever objective sleep parameters were recorded using polysomnography (PSG) and actigraphy as part of the treatment trial in an off-label treatment with metreleptin. In addition, subjective sleep data, psychometric surveys, and weight progression were documented. Our findings could indicate multiple influences of leptin on sleep and the central circadian system (e.g. the suprachiasmatic nucleus, SCN). Theese could be direct tot he SCN or indirect by effecting changes in energy balance and psychomotor activation. The overall positive course of treatment will be presented in detail in the lecture.

Conclusions
Treatment with metreleptin is a promising therapeutic approach for AN, particularly in the starvation phase, which is difficult to treat. The treatment has an impact on circadian rhythms and sleep patterns. Further research is needed to investigate the role of these influences in treatment more closely. Future studies should integrate objective and subjective parameters

of sleep and circadian rhythmicity. Integration into existing animal models and further investigations appear appropriate and are of considerable scientific and clinical interest.

Acknowledgements

We thank the patient and her family and the team of clinicians and researchers at the Department of Child And Adolescent Psychiatry and Neurology

of Rostock University Medical Center and DZKJ.

Presenting Author
Alice Crawshaw (United Kingdom)

Authors
Alice Crawshaw (United Kingdom); Victoria Robinson (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P06

Title
Intervention Outcomes and Trends in Sleep Studies of Children and Young People with Trisomy 21: A three-year retrospective review Crawshaw A, Robinson V, Ahmed B, Chan E, Patelis

Introduction
Children and young people (CYP) with Trisomy 21 (T21) are at high risk of obstructive sleep apnoea (OSA), often with persistent symptoms despite standard interventions1

Materials and Methods
We performed a retrospective review of CYP with T21 who underwent in-hospital overnight sleep studies in January 2023 - January 2026. Extracted data from electronic patient records included demographic information and detailed sleep study parameters. The obstructive apnoea–hypopnoea index (OAHI) from the initial diagnostic study was recorded as the pre intervention baseline and severity was graded as per AASM criteria. Post intervention outcomes were assessed using follow up OAHI values, where available, or descriptive clinical outcomes. Data were analysed to evaluate intervention patterns, efficacy, and temporal trends.

Results
201 patients with T21 underwent diagnostic sleep studies during the study period. Median baseline OAHI was 4.9 evs/hr (IQR 1-12 evs/hr) with 50 (25%) classed as normal, 52 (26%) mild, 39 (19%) moderate, and 60 (30%) severe OSA . 122/201 patients underwent one or more interventions, including adenotonsillectomy/adenoidectomy, intranasal steroids, non-invasive ventilation (NIV), drug induced sleep endoscopy (DISE) directed surgery, and hypoglossal nerve stimulation (HNS).

Sixty-two patients had follow-up OAHI values available post-intervention. Of these, 30 were normal (48%), 18 had mild (29%), 7 moderate (11%) and 7 severe OSA (11%). Median post-

intervention OAHI was 1.4 evs/hr (IQR 0.2 – 4.2 evs/hr). There was a significant improvement in OAHI post-intervention ($W = 1777$, $P < 0.001$). However, persistent obstruction post initial intervention was common .

NIV (BiPAP or CPAP) was initiated in 32 with persistent moderate–severe OSA; however, only 13 (40 %) patients tolerated ventilation for >4 hours per night . 12 (38%) never tolerated any ventilation and 7 (22%) had limited tolerance despite repeated attempts at acclimatisation.

Since 2023 DISE has been increasingly utilised in children with persistent OSA or those with failed NIV initiation (n=20). At baseline , 9 (45%) had moderate and 11 (55%) had severe OSA. Of those who have had sleep studies following DISE (n = 10), 3 had normal OAHI, 2 had mild, 1 had moderate and 4 still severe OSA, with 5 (50 %) showing improvement in OAHI .

Five patients showed persistent severe OSA despite multiple interventions. Two patients showed spontaneous improvement in OAHI over time without intervention, particularly among younger children with mild disease."

Conclusions

CYP with Trisomy 21 display a wide spectrum of OSA severity and follow varied often complex treatment trajectories. Adenotonsillectomy remains the most common first line intervention, while the utility of NIV/CPAP is limited by poor tolerance and adherence. DISE is emerging as a valuable adjunct for evaluating persistent OSA and guiding management decisions.

Acknowledgements

Sleep, LTV, Respiratory and ENT teams at GOSH.

Presenting Author
Alina Marinca (United Kingdom)

Authors
Alina Marinca (United Kingdom); Julia Michalek (United Kingdom); Alice Gregory (United Kingdom); Afia Ali (United Kingdom); Jennifer Lau (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P07

Title
Sleep disturbance as a transdiagnostic marker of children's mental health difficulties: A network analysis of item-level associations between different types of sleep problems and different behavioural and emotional symptoms

Introduction
Sleep disturbances are widely considered to be a transdiagnostic feature of common behavioural and emotional difficulties in childhood, yet most studies treat sleep as a single construct. Where studies have explored specific sleep problems to psychopathology in children, these tend to only include behavioural or emotional difficulties, ignoring the often-observed covariance between them. These study limitations curb our knowledge over whether individual sleep disturbances are universal (transdiagnostic) or specific to individual symptom types. Aiming to map item-level associations between specific sleep problems and behavioural and emotional symptoms within a network framework, we predicted that nodes would organise into clusters corresponding to behavioural symptoms, emotional symptoms, and sleep problems, and that sleep problems would be central in the network.

Materials and Methods
Using data from the Development of Emotional Resilience (DEER) cohort, an under-represented socio-economically and culturally diverse community sample of children living in East London (N = 876, aged 8–12 years; 47.7% male; 24.6% receiving free school meals; 57.5% British Asian), we applied network analysis to examine relationships between sleep and childhood psychopathology at the item level. Associations between self-reported sleep problems (Sleep Self-Report), teacher-reported behavioural symptoms (hyperactivity/impulsivity, inattention, conduct; Strengths and Difficulties Questionnaire), and self-reported emotional symptoms (anxiety and depression; Revised Child Anxiety and Depression Scale) were estimated using a Gaussian Graphical Model, in which edges represent regularised partial correlations reflecting the unique association between each pair of symptoms while controlling for all others. Symptom communities were identified using the

Louvain modularity algorithm, and centrality and bridge indices (strength, expected influence, bridge centrality) were examined to identify influential and cross-cluster symptoms. Networks were finally compared between boys and girls using the Network Comparison Test.

Results

Seven symptom clusters emerged, reflecting distinct clusters of behavioural symptoms, some mixed sleep-emotional symptoms, and mixed sleep problems. We identified a cohesive and separate cluster of behavioural symptoms, emotional symptoms that clustered into affective and physical symptoms (low mood, loss of appetite, fatigue) and cognitive aspects (worry, negative cognitions), and four clusters of sleep problems. Two sleep clusters emerged with clearer themes of bedtime resistance and sleep anxiety, while two contained mixed items. Node centrality analyses identified anxiety and sleep-anxiety items as the most central nodes in the network. Among the top bridge nodes linking clusters in the network were problems with appetite, trouble sleeping, daytime sleepiness, and anticipatory worry about bedtime, potentially reflecting transdiagnostic pathways across symptom domains. We found similarity between boys and girls in observed symptom interrelations.

Conclusions

Sleep and bedtime-related anxiety may act as central, transdiagnostic mechanisms, proximally in relation to emotional symptoms and distally in relation to behavioural symptoms. These findings support targeted, modularised interventions that focus on central sleep problems, such as bedtime anxiety, to enhance precision and impact across emotional and behavioural difficulties.

Acknowledgements

This work was supported by the Economic & Social Research Council (ESRC)'s Postgraduate Funding, London Interdisciplinary Social Science Doctoral Training Partnership and by the Barts Charity, UK.

Presenting Author
ALMIRO JOSÉ MACHADO JÚNIOR (Brazil)

Authors
GIULIA BIANCHI MATOS (Brazil); LEONARDO MACEDO PAGLIUCO (Brazil); MILTON SANTAMARIA JUNIOR (Brazil); ALMIRO JOSÉ MACHADO JÚNIOR (Brazil)

Presentation Day and Board Number
Friday, April 10, 2026 | P08

Title
Analysis of Clinical and Anthropometric Risk Factors for Obstructive Sleep Apnea Syndrome in a Pediatric Orthodontic Sample: Correlational Study".

Introduction
Pediatric Obstructive Sleep Apnea Syndrome (OSAS), with an incidence between 1.2% to 5.7%, is often underdiagnosed and coexists with dentofacial anomalies. Therefore, this study aimed to identify and quantify the association between orthodontic/otolaryngological clinical factors and the risk of OSAS using the Sleep Clinical Record (SCR) score

Materials and Methods
A cross-sectional study was conducted with 43 children (mean age: 9.77 ± 1.51 years) undergoing orthodontic treatment at the orthodontic clinic of the Institute of Science and Technology, São Paulo State University – SJC. Anthropometric data and clinical examinations were collected using the Sleep Clinical Record (SCR). The total SCR score was used as the primary outcome. Statistical analyses included Pearson's correlation, Student's t-test for independent samples, and principal component analysis (PCA).

Results
27.9% of the sample presented an SCR score ≥6.5, suggestive of OSAS. Strong and significant correlations were identified between the SCR score and tonsillar hypertrophy (r=0.52; p

Conclusions
It is concluded that tonsillar hypertrophy, severe anatomical airway obstruction (Friedman III/IV), and skeletal malocclusions (Class II and III) are strong clinical predictors of risk for OSAS in orthodontic children. These findings reinforce the need for systematic interdisciplinary screening in this population.

Acknowledgements
FAPESP 24/08147-5

Presenting Author
ALMIRO JOSÉ MACHADO JÚNIOR (Brazil)

Authors
LEONARDO MACEDO PAGLIUCO (Brazil); GIULIA BIANCHI DE MATOS (Brazil); MILTON SANTAMARIA JUNIOR (Brazil); ALMIRO JOSÉ MACHADO JÚNIOR (Brazil)

Presentation Day and Board Number
Saturday, April 11, 2026 | P01

Title
Correlation between the Sleep Clinical Record and OSA-18 Questionnaires in Pediatric Patients with Suspected Obstructive Sleep Apnea.

Introduction
Obstructive Sleep Apnea (OSA) is a respiratory disorder characterized by recurrent upper airway obstructions during sleep, which can impair a child's physical, cognitive, and emotional development. Early diagnosis is essential, and screening instruments such as the Sleep Clinical Record (SCR) and OSA-18 questionnaires have been used for their clinical practicality. However, the relationship between these instruments still requires further investigation. Objective:

To establish the correlation between total scores and specific domains of the Sleep Clinical Record and OSA-18 questionnaires applied to pediatric patients with suspected OSA."

Materials and Methods
Nineteen children aged ≤ 12 years were evaluated. Both questionnaires were administered to the same participants — the SCR was completed by trained evaluators, while the OSA-18 was answered by parents or caregivers. Correlations between total and domain scores were analyzed using Pearson's correlation coefficient (r).

Results
A strong positive correlation was found between the total scores of the Sleep Clinical Record and OSA-18 ($r = 0.947$). Strong correlations were also observed between the SCR and the domains Sleep disturbance ($r = 0.922$), Emotional problems ($r = 0.950$), and Daily functioning problems ($r = 0.943$). Conversely, the domains Physical symptoms ($r = 0.378$) and Caregiver concern ($r = 0.331$) showed weak positive correlations.

Conclusions
The results demonstrate that the Sleep Clinical Record shows a high correlation with the OSA-

18 questionnaire, particularly in domains related to emotional, sleep, and daily functioning aspects. This indicates that both instruments can be used complementarily for screening and monitoring pediatric OSA. The combined use of these questionnaires may improve early diagnosis and clinical decision-making.

Acknowledgements
FAPESP 2024/08148-1

Presenting Author
Amandine Busson (France)

Authors
Amandine Busson (France); Amandine Rey (France); Évelyne Touchette (Canada); Marie-Hélène Pennestri (Canada); Geneviève Forest (Canada); Stéphanie Mazza (France); Sabine Plancoulaine (France)

Presentation Day and Board Number
Friday, April 10, 2026 | P09

Title
Longitudinal associations between nap duration and subsequent children's behavioural problems: findings from the ELFE Cohort Study

Introduction
Sleep plays a key role in early child development, and numerous studies have documented associations between night sleep duration and socio-emotional outcomes in preschool children. However, far less is known about the developmental relevance of daytime napping as a distinct exposure. Our aim was to investigate the longitudinal association between daytime napping at 3.5 years and behavior at 5.5 years.

Materials and Methods
Analyses were conducted using data from the French ELFE birth cohort which included 18,329 children in 2011. All data were collected using parental reports at inclusion and at ages 2, 3.5, and 5.5 years, including potential confounding factors, identified by literature and using directed acyclic graph, such as children's lifestyle factors (e.g., BMI, physical activity, screen time), family-socio-economic factors (e.g., maternal education, household income), sleep-related factors (including average nighttime sleep duration), and other relevant covariates. In total, 9,920 children with available information on nap duration at age 3,5 years and behavior, assessed with the Strengths and Difficulties Questionnaire (SDQ) at age 5.5 years were included. Nap duration was classified into three categories: no nap or nap for less than one hour, nap between one and two hours, nap for more than two hours. Subscales of SDQ (conduct problems, emotional symptoms, peer relationship problems and hyperactivity–inattention problems) were categorized according to clinical thresholds into three groups: normal, borderline, and clinically significant. After multiple imputation of missing data on potential confounders, longitudinal associations between nap duration and each behavioral outcome were examined using confounder-adjusted multinomial logistic regression models.

Results

In our population, 96.6% of 3.5-year-old children (n = 9,578) were reported to nap. More specifically, 57.2% (n=5,678) napped between 1 and 2 hours, 29.2% (n=2,894) napped for more than 2 hours, and only 13.6% (n=1,348) did not nap or napped for less than 1 hour. When examining the associations between nap duration and behavioral subscales, different patterns were observed within the clinically significant group. Absence of nap or nap shorter than 1 hour was significantly associated with conduct problems (OR=1.30, 95% CI: 1.11–1.53, n=248). A weak, non-significant, association was also observed in this group for peer relationship problems (OR=1.21, 95% CI: 0.95–1.52, n=100). Additionally, longer nap duration (≥2 hours) showed slightly increased, though non-significant, associations with hyperactivity–inattention (OR=1.15, 95% CI: 0.99–1.33, n=356), peer relationship difficulties (OR=1.11, 95% CI: 0.93–1.34, n=184), and emotional symptoms (OR=1.10, 95% CI: 0.95-1.27, n=364). Concerning the borderline group, weak and non-significant increases in the risk of peer relationship problems were suggested for both short nap duration (OR = 1.11, 95% CI: 0.89–1.38, n = 118) and long nap duration (OR = 1.12, 95% CI: 0.94–1.32, n = 246).

Conclusions

In this large cohort, daytime nap duration at age 3,5 years showed modest associations with behavioral outcomes at age 5,5. Despite the modest effects, these findings provide interesting preliminary evidence and highlight the value of further research on the developmental role of napping patterns.

Acknowledgements

This work was supported by the IReSP (ENSOM-preschool).

Presenting Author
Amit Samet-Berman (Israel)

Authors
Amit Samet-Berman (Israel); Yotam Schori (Israel); Liat Tikotzky (Israel)

Presentation Day and Board Number
Friday, April 10, 2026 | P10

Title
The “bedtime checking” sleep intervention in infants with insomnia: Preliminary results

Introduction
Early-childhood insomnia is prevalent and is associated with negative child and family outcomes. Behavioral sleep interventions, based on limiting parent-child nocturnal interactions, are effective in significantly improving infant sleep. Yet, these interventions frequently involve significant parent and infant distress that deter many parents. Research on sleep interventions that involve a lower “dose” of parent-infant separation, and thus may be more acceptable to many parents, has so far been sparse. Hence, the main aim of our ongoing research is to study the sleep outcomes of an intervention that encourages parents to gradually reduce their involvement in settling the infant to sleep only at bedtime (“bedtime checking”), compared to an intervention that also asks parent to limit their involvement when the infant wakes up during the night (“standard checking”).

Materials and Methods
The study was approved by the Helsinki Ethics Committee of Soroka Medical Center. Inclusion criteria include: (a) Early-childhood insomnia according to DSM-5; (b) Age range 9-18 months; (c) The parents wish to sleep independently from the child. Parents sign informed consent before baseline assessment. After baseline assessment, infants are randomly assigned to a bedtime checking intervention or to a standard checking intervention. Parents complete daily diaries and the Brief Infant Sleep Questionnaire (BISQ; Sadeh, 2004) at baseline and at two weeks post-intervention. Main infant sleep outcomes included: Sleep onset latency; Perceived bedtime difficulties; Perceived infant sleep problems; Duration of night-time wakefulness and Number of night-time wakings.

Results
We compared the results of 116 families (infants’ mean age = 12.96 months, SD = 2.73;) who, so far, completed the intervention and follow-up assessments in the two groups. A mixed between-within subjects’ analysis of variance was conducted to assess the impact of the two

sleep interventions on infants' sleep, across two time points (baseline and 2-weeks post intervention). The results show that both interventions lead to a similar significant improvement in reported infant sleep for the following measures: (1) Sleep onset latency: Diaries ($F(1, 90)=42.27$, $p <.010$), BISQ ($F (1, 109) = 32.57$, $p <.001$); (2) Perceived bedtime difficulties Diaries ($F (1, 90) = 32.75$, $p =.002$), BISQ:($F (1, 113) = 20.27$, $p <.001$); (3) Perceived infant sleep problems: Diaries ($F (1, 90) = 86.79$, $p <.001$); BISQ:($F (1, 10)=57.26$, $p <.001$); (4) Duration of night-time wakefulness: Diaries ($F (1, 90) = 86.14$, $p <.001$), BISQ ($F (1, 107)= 55.81$, $p <.001$); and (5) Number of night-time wakings: Diaries ($F (1, 90) = 109.31$, $p <.001$), BISQ ($F (1, 108) = 101.21$, $p <.001$).

Conclusions

The results indicate that the bedtime checking intervention yields a comparable improvement in infant sleep to the standard checking intervention, suggesting that the bedtime intervention may be a promising intervention for families who prefer to implement a more gradual sleep intervention.

Acknowledgements

We wish to thank all participating families.

Presenting Author
Andreia Leitão (Portugal)

Authors
Andreia Leitão (Portugal); Mafalda Leitão (Portugal)

Presentation Day and Board Number
Friday, April 10, 2026 | P11

Title
Takenouchi-Kosak syndrome, Sleep and Autism - a Case Report

Introduction
Autism spectrum disorders (ASD) are complex, heterogeneous and frequently associated with comorbidities, namely sleep disorders. 40-80% of children with ASD have difficulties in sleep's onset and/or maintenance. Sleep disorders in these children negatively impact their behavioral traits, increasing dysregulatuon episodes and stereotypies.

We present a case of a child with ASD, sleep disorders, low iron and a rare genetic syndrome (Takenouchi-Kosak syndrome).

Materials and Methods
A currently 6-year old boy presented to our centre at the age of 3 because of intense tantrums, poor eye contact, lack of response to name, hand-flapping, sleep difficulties and food selectivity. Clinical diagnostic criteria were compatible with ASD, as were the results of the ADOS, ADI-R, and Griffiths scales. The most impactful symptoms were tantrums and sleep difficulties (onset and maintenance).

Results
A sleep evaluation was conducted including sleep diary and children's sleep habits questionnaire. A polyssonography highlighted changes in sleep architecture. The sleep's pattern was an initial and middle insomnia and restless leg disorder. Blood tests revealed low levels of iron and folic acid.

The child has minor dysmorphic features, such as synophrys and genetic testing disclosured a rare genetic syndrome - Takenouchi-Kosak syndrome.

Behavioral measures were implemented but were insufficient. Supplemental iron and prolonged release melatonin (1-2 mg) were initiated with only mild improvement. Increasing the dose to 5 mg showed a higher improvement, with higher total sleep time, sleep onset latency decreased and a better daily self-regulation.

Conclusions

ASD are complex and many times come with sleep difficulties. Sleep screening should be done in all child with ASD. The early detection of sleep changes drives an early intervention and may mitigate a negative impact across all life contexts. When behavioral measures are insufficient, melatonin is an important tool.

Presenting Author
Angelica Quercia (Italy)

Authors
Angelica Quercia (Italy); Giuseppe Lanza (Italy); Filippo Zappasodi (Italy); Raffaele Ferri (Italy); Oliviero Bruni (Italy)

Presentation Day and Board Number
Friday, April 10, 2026 | P12

Title
Altered Sleep Oscillation Dynamics: Enhanced Slow Oscillation–Spindle Coupling in Children with Dyslexia

Introduction
Dyslexia is a neurodevelopmental disorder characterized by difficulties in reading and language processing, often accompanied by distinctive neurophysiological patterns. Previous research has shown that children with dyslexia display atypical electroencephalographic (EEG) activity during sleep, particularly in the architecture and density of sleep spindles, which are critical for cognitive functioning and learning. The coupling between sleep spindles and slow oscillations (SO) has been identified as a key mechanism underlying memory consolidation and learning. However, the precise nature of SO-spindle coupling in dyslexia remains insufficiently understood. This study aims to address this gap by systematically examining SO-spindle coupling during non-REM sleep stages N2 and N3 in children with dyslexia compared to typically developing, normally reading children (NC).

Materials and Methods
We recruited 10 children diagnosed with dyslexia (3 males, mean age 11.22 ± 1.30 years) and 11 age-matched, normally reading controls (6 males, mean age 11.83 ± 1.70 years). All participants underwent comprehensive overnight polysomnographic recordings to capture detailed sleep EEG data. We quantified the density of fast spindles (FS, 12–15 Hz), slow spindles (SS, 9–12 Hz), and slow oscillations (SO, ~1 Hz) in both frontocentral and occipital EEG derivations. Additionally, we calculated the percentage of SO-spindle coupling events, representing the proportion of spindles temporally aligned with SOs. Custom MATLAB scripts were used for signal processing and event detection. Statistical analyses included a mixed ANOVA for group comparisons of spindle and SO densities, a Dirichlet regression for analyzing coupling percentages, and circular statistics for SO-spindles coupling. All analyses were conducted using R.

Results

Our analyses revealed that both FS and SS densities were significantly reduced in the N2 sleep stage of dyslexic children compared to controls (adjusted $p < 0.05$). SO density was also lower in dyslexic children relative to NC, with significant differences observed in central and frontal regions during N2 (adjusted $p< 0.05$) and across all derivations during N3 (adjusted $p < 0.001$). The percentage of SO-spindle coupling was significantly higher in dyslexic children than in NC for both FS and SS during N2 and N3 ($p < 0.001$). In particular, the phase of SO-SS coupling events in the dyslexic children is significantly clustered around the peak of the slow oscillation up-state (at approximately 90°).

Conclusions

The reduction in spindle and SO densities observed aligns with previous reports linking impaired sleep oscillatory activity to deficits in cognitive and learning processes. However, the observed increase in SO-spindle coupling percentage of FS and SS in dyslexic children suggests a compensatory or maladaptive reorganization of mechanisms underlying sleep-dependent learning, where SS are exhibiting an altered phase preference, coupling specifically at the up-state peak, a phase that is typically characteristic of FS. Overall, our results provide novel insights into the sleep microstructure of dyslexia, suggesting that altered SO-spindle coupling could serve as a biomarker for disrupted cognitive processing during sleep in this population. Further research is warranted to clarify the functional implications of these findings and their potential translational value for interventions targeting sleep in dyslexia.

Presenting Author
Anita Kiafar (Canada)

Authors
Anita Kiafar (Canada); Michelle Ly (Canada); Victoria Talwar (Canada); Marie-Hélène Pennestri (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P13

Title
How Mothers Sleep When Parenting Alone? A Scoping Review on the Associations between Single Motherhood Status and Maternal Sleep

Introduction
Single mothers report high rates of cumulative stress due to juggling the demands of parenthood on their own, which can disrupt their sleep. However, despite a near 190% rise of single-mothers' families in past decades, not much is known regarding maternal sleep in single-mother families. As such, maternal sleep in single-mother families warrants further attention, especially as previous literature showed that single mothers tend to report less time spent on self-care, including prioritizing their sleep. To our knowledge, no reviews have synthesized the literature on the links between single motherhood and sleep. Thus, the current scoping review sought to thoroughly synthesize the existing literature on the associations between single motherhood and sleep health indices.

Materials and Methods
A search strategy was conducted using partnership-, mother-, and sleep-health related keywords. PsycINFO, Medline, CINAHL, EMBASE, Scopus, ProQuest Dissertations and Theses Global, Social Work abstracts, and Web of Science Core Collection were searched, along with a manual search. Empirical studies were included if they measured sleep in single mothers and reported on a potential association between single motherhood and maternal sleep. Articles were exported to Covidence, where two independent reviewers screened the titles/abstracts, and the full-texts (inter-rater reliability of 91.8% -substantial agreement).

Results
Out of the 476 articles screened, 14 studies met the inclusion criteria. Of these, the majority originated from Western countries. Most were published within the past ten years. The majority of studies focused on sleep duration, followed by insomnia symptoms and sleep quality. In contrast, sleep efficiency, nocturnal awakenings, and diurnal functioning received

less attention. A mix of subjective and objective methods were used across studies. Sleep duration was mostly measured with unvalidated questionnaires, while sleep quality was mostly measured using validated measures. Only two studies used objective measures (actigraphy). Half of the studies focused on the antenatal or postpartum period. While most studies did not find any association between single motherhood and sleep duration, nor sleep efficiency, single motherhood seemed associated with more insomnia symptoms, more nocturnal awakenings, and lower sleep quality.

Conclusions

To the best of our knowledge, this is the first scoping review on the rarely explored association between single motherhood and sleep health. Findings confirmed that very few studies exist on this topic, which have been mostly published in the past ten years, pointing to an emerging research area. Overall, single mothers seem to report higher insomnia symptoms, more fragmented sleep, and lower sleep quality. Other domains of sleep health seem to be impacted, but these associations remain to be clarified given the very small number of studies available. More studies with a larger sample size and validated measures are needed on the topic, given the close association between maternal sleep quality and child sleep, as well as family functioning.

Acknowledgements

This research was undertaken, in part, thanks to funding from the Canada Research Chairs Program.

Presenting Author
Anna MacKinnon (Canada)

Authors
Anna MacKinnon (Canada); Ophélie Lebel (Canada); Mahtab Matin (Canada); Charlie Rioux (United States); Elizabeth Keys (Canada); Catherine Lebel (Canada); Gerald Giesbrecht (Canada); Lianne Tomfohr-Madsen (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P14

Title
Association between Maternal Sleep during Pregnancy and Child Sleep at 36 Months: Preliminary Findings from the Pregnancy during the Pandemic Cohort

Introduction
Sleep disturbances are common during pregnancy and are linked to adverse obstetric outcomes. Prenatal sleep also has potential downstream effects on child sleep, yet longitudinal evidence into toddlerhood remains limited. The COVID-19 pandemic heightened sleep disturbances in adults, including pregnant individuals, underscoring the need to characterize perinatal sleep and its implications for children's sleep health. Utilizing the Canadian Pregnancy during the Pandemic (PdP) cohort, we examined whether maternal sleep duration and disturbances during pregnancy are associated with children's sleep health at 36 months old.

Materials and Methods
A sub-sample of participants (n = 3608, M = 20 weeks gestation at enrollment) were drawn from the PdP cohort and included if they had completed sleep questionnaires during pregnancy (which could include one intake survey and up to 5 additional monthly follow-up surveys until childbirth) and the Brief Infant Sleep Questionnaire (BISQ) at 36 months postpartum. Maternal sleep duration (hours/night) was measured using one item from the Pittsburgh Sleep Quality Index (PSQI) and sleep disturbance was assessed using the Patient-Reported Outcomes Measurement Information System (PROMIS) Sleep Disturbance Short Form; average scores were computed across all available pregnancy responses. Child sleep was measured using the Brief Infant Sleep Questionnaire (BISQ) single item for duration (hours/night) and total score. For these preliminary analyses, separate linear regression models were run, adjusting for the corresponding concurrent maternal sleep variable (duration or disturbance).

Results

Regression models indicated that greater average prenatal sleep duration significantly predicted longer nighttime sleep (b = 0.186, p = .004) and better overall sleep health (b = 0.538, p = .002) among children at 36 months, controlling for concurrent maternal sleep duration. In contrast, higher average prenatal sleep disturbance predicted shorter nighttime sleep (b = −0.031, p = .013) and poorer overall sleep health (b = −0.090, p = .007), controlling for concurrent maternal sleep disturbance.

Conclusions

These preliminary findings suggest that both prenatal sleep quantity and quality exert meaningful, lasting associations with child sleep at 36 months, beyond concurrent maternal sleep characteristics. Prenatal sleep may represent a modifiable target for improving downstream child sleep outcomes. However, an important limitation is that all measures were parent-reported; future research should incorporate objective sleep measures such as actigraphy for both mothers and children. Planned growth mixture-modeling analyses will further clarify whether distinct perinatal sleep trajectories differentially predict child sleep health development.

Acknowledgements

We thank the PdP participants and research team members who contributed to data collection and management during the COVID-19 pandemic. This study has been approved by the University of Calgary's Conjoint Health Research Ethics Board (REB20-0500) and supported by funding from the Alberta Children's Hospital Research Institute and Owerko Center. Dr MacKinnon is supported by funding from the CHU Sainte-Justine Foundation.

Presenting Author
Annabel Brookes (United Kingdom)

Authors
Annabel Brookes (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P15

Title
Barriers, facilitators and opportunities to promote optimal sleep in children undergoing cancer treatment in a regional UK children's hospital: a staff perspective.

Introduction
Sleep supports healthy immune function, pain sensitivity and emotional regulation, all factors important when children are in hospital. The hospital environment is often non-conducive to sleep. Compared to age-related norms and to sleep at home, paediatric oncology patients and their parents/carers have lower sleep efficiency, more WASO (wake after sleep onset), and shorter total sleep time. Child-related and environmental factors including noise, light and staff room interruptions all affect sleep. The study aimed to explore staff perspectives on barriers and facilitators to sleep in this setting and to explore staff awareness of existing quality improvement initiatives.

Materials and Methods
Participants were health professional (nurses, doctors and healthcare assistants) working on the paediatric oncology ward in Southampton Children's Hospital. A Qualtrics survey was distributed to staff rating the extent to which their units supported healthy sleep. Responses were analysed using SPSS. Semi-structured 30-minute interviews were conducted and analysed using a practical thematic analysis approach.

Results
Twenty-eight survey responses indicated that 50% of staff were aware of current quality improvement initiatives. Staff agreed that light from screens and devices could be minimised more, noise on the ward often disturbed patients' sleep, there could be more education for carers, and promotion of appropriate sleep windows. Ten interviews generated seven themes: education and advice, sleep matters, low priority of sleep, misalignment of schedules, fixed and modifiable sleep factors and "whose job is it?". One participant said "[sleep is] not an afterthought, but there's so many things going on at once, so you don't…necessarily think about sleep…you think about…nutrition, infection control, the fact they might be

neutropenic", showing that while the importance of sleep is understood, it is not given a high priority. Another participant said "[they] don't want to step on parent toes [around technology use] that's more of a parenting role", demonstrating that staff felt sleep is in the carer's remit and not always regarded as a clinical feature of care. The reality of cancer treatment, including isolation to rooms and limited exercise, introduces challenges which affect children's circadian health. One participant said, "a lot of [the children] are stuck in their rooms…they don't really have their freedom…they're not allowed anywhere".

Conclusions

Staff described nighttime interruptions and rigid ward schedules to be key factors affecting sleep. Due to variation in practice, additional guidance is needed for staff to approach sleep with patients and carers as staff described feeling unequipped to discuss sleep effectively with careers and mindful not to overstep parental boundaries. Staff must feel empowered to take leadership of navigating sleep for patients otherwise there is limited consistency in who will. Specific aspects of cancer care in children affects sleep and should be considered in future quality improvement initiatives.

Acknowledgements

My supervisors – Professor Catherine Hill and Dr Jessica Bate – for their support, expertise and guidance throughout the completion of this study. Thank you to the paediatric oncology ward in Southampton Children's Hospital for their participation.

Presenting Author
Anneke Vandendriessche (Belgium)

Authors
Ann Vandendriessche (Belgium); Danique Heemskerk (Belgium); Benedicte Deforche (Belgium); Maartje Van Stralen (Belgium)

Presentation Day and Board Number
Friday, April 10, 2026 | P16

Title
Barriers and facilitators of implementing delayed school starting times in Dutch and Flemish secondary schools as perceived by school leaders: a qualitative study.

Introduction
Sleep is essential for adolescents' mental, cognitive, and physical health. However, many adolescents sleep too little and of poor quality. A key cause is the mismatch between adolescnts' delayed biological clock and early school start times, leading to chronic sleep deprivation. Delaying school start times is a potentially effective strategy to improve adolescent sleep. This study aims to explore barriers and facilitators to implementing later school start times in Dutch and Flemish secondary schools as perceived by school leaders.

Materials and Methods
Semi-structured interviews (n = 18) were held with key stakeholders (i.e. school leadership or student support staff) from three categories of secondary schools in Flanders and The Netherlands: (1) schools that have implemented later start times, (2) schools that have considered such changes, and (3) schools firmly opposed to it. The interview guide was based on the MIDI (Measurement Instrument for Determinants of Innovation) framework. Interviews were recorded, transcribed, and thematically coded in MaxQDA 24.8.0.

Results
Stakeholders identified both barriers and facilitators across the phases of adoption, preparation, implementation, and continuation of delaying school start times. Adoption was often hindered by logistical concerns, ingrained routines, and perceived scheduling conflicts, though facilitated by awareness of adolescent sleep needs and renewed school vision. Preparation was facilitated by stakeholder communication, participatory planning, and adapting schedules and regulations. Adoption challenges included public transport mismatches and concerns about later end times, but benefits such as calmer school mornings, improved student alertness, and more meaningful interactions were frequently

observed. Continuation was facilitated by alignment with broader educational visions, teacher and student satisfaction, and perceived health and performance benefits.

Conclusions

Successfully shifting school start times requires more than overcoming logistical barriers; it depends on strong internal leadership, alignment with pedagogical values, and a culture that allows for experimentation and adaptation. Open communication with staff and families plays a key role in building trust and support. At the same time, system-level actors—such as educational networks or government bodies—have an important role to play.

Acknowledgements

We want to thank all participating school leaders.

Presenting Author
Anne-Marie Adams (Australia)

Authors
Anne-Marie Adams (Australia); Andrew Collaro (Australia); Mark Norman (Australia); Teodora Espinoza (Australia); Laura Marriott (Australia); Ramneek Thind (Australia); Karen Waters (Australia); Moya Vandeleur (Australia); Jasneek Chawla (Australia)

Presentation Day and Board Number
Friday, April 10, 2026 | P17

Title
Development and Validation of Paediatric Sonomat® Scoring Guidelines: A Multi-Centre Collaborative Approach to Contactless Sleep Monitoring

Introduction
The Sonomat® is a contactless sleep monitoring device comprising a mattress overlay with embedded polyvinylidene fluoride sensors and microphones that record thoracoabdominal movement and acoustic breath sounds. While validation studies have demonstrated promising agreement with polysomnography (PSG) in detecting sleep-disordered breathing (SDB), clinical uptake has been limited by the absence of standardised paediatric scoring rules. This study evaluated inter-scorer concordance and agreement with PSG using preliminary paediatric Sonomat® scoring criteria to identify which respiratory indices demonstrate clinical-level reliability and which require further refinement before guideline finalisation.

Materials and Methods
Preliminary paediatric Sonomat® scoring criteria were developed collaboratively across three Australian tertiary paediatric sleep centres (Royal Children's Hospital Melbourne, Queensland Children's Hospital, Children's Hospital Westmead). Guidelines were aligned with American Academy of Sleep Medicine paediatric thresholds to maximise comparability with PSG and transferability of clinician expertise. To validate the criteria, five trained sleep scientists independently scored 10 Sonomat® studies from children with neurodisability using these draft scoring guidelines. Each study also had gold-standard Sonomat® scoring from a reference expert. Scoring outputs included Apnoea Index (AI), Hypopnoea Index (HI), Apnoea-Hypopnoea Index (AHI), Central Event Index (CEI), and Obstructive Event Index (OEI). Inter-scorer reliability was assessed using intraclass correlation coefficient ICC(2,1). Mean Sonomat® indices were calculated across five scorers to reduce individual rater variability

prior to PSG comparison. Agreement between mean Sonomat® scores (across five scorers) and PSG was evaluated using Bland-Altman analysis.

Results

Inter-scorer reliability: Excellent-to-near-perfect reliability was achieved for apnoea detection indices: AI (ICC=0.950, near perfect), CEI (ICC=0.900, excellent), and AHI (ICC=0.850, excellent). Event-type discrimination and hypopnoea detection demonstrated lower reliability: OEI (ICC=0.570, fair) and HI (ICC=0.310, poor). Method agreement with PSG: Good agreement was observed for AI (mean bias -0.6, 95% limits of agreement -3.5 to 2.3) and CEI (mean bias -1.1, LoA -5.2 to 3.0). Moderate agreement was found for AHI (mean bias -3.2, LoA -9.0 to 2.6), OEI (mean bias -1.9, LoA -7.9 to 4.1), and HI (mean bias -2.3, LoA -7.9 to 3.3). Sonomat® consistently underestimated respiratory event indices compared with PSG.

Conclusions

Collaborative multi-centre development of paediatric Sonomat® scoring guidelines yielded excellent inter-scorer reliability and good PSG agreement for apnoea detection (AI, CEI, AHI), demonstrating readiness for clinical implementation for these indices. Fair-to-poor reliability for hypopnoea (HI) and obstructive event discrimination (OEI) indicates that targeted refinement of these scoring criteria, together with enhanced training protocols, is required before routine clinical adoption. This study provides a roadmap for implementation: AI and AHI can be used for clinical decision-making now, whilst HI and OEI require further validation. The multi-centre collaborative approach described here offers a methodological framework for developing and validating scoring guidelines for emerging sleep technologies.

Acknowledgements

The authors acknowledge the children, families, and clinicians who participated in this study. Funding: National Health and Medical Research Council Australia.

Presenting Author
Anne-Marie Adams (Australia)

Authors
Teodora Espinoza (Australia), Andrew Collaro (Australia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P90

Title
Night-to-Night Variability of Sonomat Contactless Home Sleep Monitoring in Children with Neurodisability

Introduction
Findings from multi-night polysomnography (PSG) studies demonstrate substantial night-to-night variability in the respiratory parameters of typically developing children, raising the potential need to normalise multi-night assessments for clinical diagnostics. However, children with neurodisability (ND) have lower tolerance for even a single night of PSG recording, and night-to-night variability of respiratory parameters in this population has not yet been explored. In this study, we report preliminary findings from the first assessment of night-to-night variability in respiratory parameters of children with ND, as measured at home using the contactless Sonomat mattress. The Sonomat measures respiratory events by recording movement and breath-sounds as surrogates for PSG measured airflow and respiratory effort. Our results extend upon previous validation studies comparing Sonomat to PSG in laboratory settings by exploring ND population's night-to-night variability in home sleep behaviours and routines.

Materials and Methods
Preliminary data is drawn from a subsample of children recruited as part of a larger study designed to assess the efficacy of the Sonomat as a diagnostic tool for children with a confirmed ND diagnosis. Children included in this analysis had to have completed at least two nights of at-home Sonomat recording with a minimum 5hrs Total Sleep Time (TST) each night. Sonomat trained sleep scientists scored the studies following a standardised protocol for identifying respiratory events based on the American Association of Sleep Medicine (AASM) scoring criteria. We performed a series of between-night comparisons of children's respiratory profiles, quantifying the stability of participant's obstructive sleep apnea (OSA) classification and apnea hypopnea index (AHI). Visual assessments of multi-night variability were performed using a series Bland-Altman plots.

Results

Preliminary analysis of 10 children (mean age 6.2 years, SD = 3.27 years; Median TST = 529 mins, SD = 139 mins), revealed the median AHI on the first, second, and third nights to be 3.3 (Interquartile Range (IQR) = 1.6, 7.0) events/hour, 6.0 (0.7, 6.6) events/hour, and 4.0 (2.0, 5.7) events/hour, respectively. Night-to-night agreement, as quantified by Intraclass Correlation Coefficient (ICC) was 0.574 (95% CI 0.073–0.899; p = 0.0131). Night-to-night agreement of OSA severity (mild, moderate, severe) was 77.8% for Night 1–Night 2, 75.0% for Night 1–Night 3, and 85.7% for Night 2–Night 3 (unweighted mean agreement 79.5%). Visual assessment of AHI differences between nights via Bland-Altman plots indicated no evidence of systematic bias, with mean differences all near zero (all < .02).

Conclusions

Here we present the first analysis of night-to-night variability in sleep related respiratory parameters for children with ND, as measured using the contactless Sonomat device. Our preliminary analysis provides novel insight into the night-to-night variability of AHI parameters for children with ND, demonstrating the clinical utility for this device to be used for multi-night sleep monitoring of this population in the home environment.

Acknowledgements

Sonomat data used in this study is funded by in kind support from Sonomedical and Professor Colin Sullivan for equipment and advisory support. The authors have no conflicts of interest to declare.

Presenting Author
Ann-Sofi Ellertsson (Sweden)

Authors
Ann-Sofi Ellertsson (Sweden); Joakim Ekstrand (Sweden); Gita Hedin (Sweden); Christina Sandlund (Sweden); Pernilla Garmy (Sweden)

Presentation Day and Board Number
Friday, April 10, 2026 | P18

Title
Can sleep difficulties be associated with problematic social media use, exposure to cyberbullying, and lower levels of mental well-being among school-aged children?

Introduction
Sleep is essential for adolescents' health, development, and academic performance. The aim was to investigate associations between sleep difficulties, social media use, cyberbullying, and mental well-being among Swedish adolescents aged 11, 13, and 15 years.

Materials and Methods
Data were drawn from the Swedish 2021–2022 Health Behavior in School-aged Children (HBSC) survey, including 40748 school-aged adolescents who had answered the question: How often have you had difficulty falling asleep during the past six months?

Results
Among the respondents, 37.0% reported experiencing sleep difficulties more than once a week. The highest prevalence of sleep difficulties was found among adolescents who identified themselves as neither a girl nor a boy, and among 11-year-olds exposed to cyberbullying (78.3%). Preliminary data of the logistic regression analysis showed that sleep difficulties were associated with problematic social media use , exposure to cyberbullying, and lower levels of mental well-being.

Conclusions
Problematic social media use and cyberbullying were associated with sleeping difficulties among younger adolescents. To increase mental well-being among adolescents, future studies should focus on developing and evaluating interventions to alleviate sleeping difficulties, deal with problematic social media use, and prevent cyberbullying.

Practical implications: Professionals encountering children and adolescents with sleeping difficulties should ask about problematic social media use and exposure to cyberbullying to

identify and promote mental well-being. Pediatric health professionals are well-positioned to recognize early signs of mental strain and to support adolescents' sleep health."

Presenting Author
Arika Yoshizaki (Japan)

Authors
Arika Yoshizaki (Japan); Manabu Saito (Japan); Ai Terui (Japan); Kanako Kawamura (Japan); Emi Murata (Japan); Ikuko Mohri (Japan); Kazunori Komatani (Japan); Masako Taniike (Japan)

Presentation Day and Board Number
Friday, April 10, 2026 | P20

Title
Early Outcomes of Nenne Navi AI: A Personalized Parenting Support Application for Improving Sleep in Young Japanese Children

Introduction
Persistent sleep problems among young Japanese children constitute an important public health concern. Children's sleep habits are significantly influenced by their family's lifestyle. To address this issue, we developed Nenne Navi®, an interactive application delivering culturally appropriate, family-tailored interventions for young Japanese children, and demonstrated its effectiveness in community-based use (Yoshizaki et al., 2023; Tanaka et al., 2025). This study reports early outcomes from a version that applies AI technology designed to enable scalable delivery.

Materials and Methods
Nenne Navi AI was developed by integrating supervised machine learning models with rule-based algorithms (with 96% precision for sleep advice appropriateness in our test set), enabling the automation of the expert-driven intervention system used in the original application. Caregivers entered their child's sleep habits daily for 8 consecutive days per month and received personalized recommendations and supportive text messages. This single-arm pilot study enrolled 50 caregivers of children aged 18–30 months from community settings in Hirosaki City, Japan, starting in September 2022. After 6 months of use, adherence, changes in sleep habits, perceived usefulness assessed using questionnaires, and feasibility assessed through semi-structured interviews were evaluated.

Results
Among the 50 caregivers, three (6%) exhibited continuous 3-month lapses in data entry during the 6-month study period, and no participants formally withdrew. Children demonstrated a statistically significant reduction in nocturnal awakenings, decreasing from 1.51±1.66 to 0.74±1.23 (P=0.002). Caregivers reported significant improvements in subjective

sleep quality (3.10±0.80 to 3.51±1.04, P=0.002) and a significant reduction in the proportion reporting irritability during parenting (20.21±31.07% to 11.66±25.70%, P=0.024). User feedback indicated high acceptability and satisfaction, along with reduced bedtime-related parenting stress.

Conclusions

This preliminary evaluation indicates that Nenne Navi AI is feasible in community use, supported by high adherence and favorable usability feedback. The application may serve as a scalable tool for improving early childhood sleep habits, enhancing caregiving experiences, and reducing negative parenting emotions.

Acknowledgements

The authors would like to thank all the families who participated in the study and Hirosaki City for their cooperation with participant recruitment. This study was supported by the Osaka University Center of Innovation program (JPMJCE1310), Japan Society for the Promotion of Science (JSPS) grant 16H03273 and 22H00987 to MT, 20K02675 to AY, 23H01039 to SM, and the Commissioned Research of the National Institute of Information and Communications Technology, Japan.

Presenting Author
Ashwini Mahadule (India)

Authors
Ashwini Mahadule (India)

Presentation Day and Board Number
Friday, April 10, 2026 | P21

Title
Effectiveness of peer-led versus teacher-led interventions on sleep quality and psychophysiological markers among school-going adolescents in Garhwal division of Uttarakhand, India: A randomized control trial

Introduction
Adolescent sleep disturbances are rising globally, with significant implications for mental health, cognition, and academic performance. The WHO Mental Health Atlas 2024 highlighted that while more countries are aligning policies with human rights frameworks and integrating mental health care into primary systems, implementation barriers persist, especially in low-resource regions. Schools provide a feasible platform to address adolescent sleep health. This study compared the effectiveness of peer-led versus teacher-led interventions on sleep quality and psychophysiological markers among Indian adolescents.

Materials and Methods
This two-arm, cluster-randomized trial (1:1 ratio) was conducted in 14 schools across seven districts, with districts as the unit of randomization as peer-led (n=3) or teacher-led (n=4) arms. A total of 1,440 adolescents aged 12–17 years were enrolled, with 720 participants per arm. Influential peers (nominated by classmates) and teachers (nominated by school authorities) were trained using an adapted WHO mh-GAP module to deliver the intervention. Data were collected at baseline and six months. Primary outcomes were assessed using the Pittsburgh Sleep Quality and Depression Anxiety Stress Scale-21. A p-value <0.05 was considered statistically significant.

Results
At baseline, PSQI <5 was higher in the peer arm (76.11% vs. 68.06%), while PSQI >8 was more frequent in the teacher arm (2.08% vs. 0.14%) ($p < 0.0001$). Median pre-Global PSQI was similar (4 (3–4) vs. 4 (3–5), $p = 0.321$). Post-intervention, PSQI <5 was significantly higher in the teacher arm (72.50% vs. 59.44%), while PSQI 5–8 was more common in the peer arm (38.75%

vs. 26.81%) ($p < 0.0001$). Median post-Global PSQI was lower in the teacher arm (3 (2–5) vs. 4 (3–5), $p < 0.0001$).

For mental health outcomes, baseline normal depression was higher in the teacher arm (57.50% vs. 51.53%, $p < 0.0001$), though median depression scores were similar (8 (4–14) in both, $p = 0.328$). Anxiety ($p = 0.898$) and stress ($p = 0.067$) distributions were comparable. After intervention, the teacher arm had significantly higher proportions of normal depression (64.17% vs. 54.58%, $p < 0.0001$), normal anxiety (37.92% vs. 31.81%, $p = 0.004$), and normal stress (79.58% vs. 69.44%, $p < 0.0001$). Median scores were also significantly lower in the teacher arm for depression (6 (4–10) vs. 8 (4–14), $p < 0.0001$), anxiety (10 (4–16) vs. 10 (6–18), $p = 0.002$), and stress (8 (4–14) vs. 10 (4–16), $p = 0.008$)."

Conclusions

While baseline sleep quality was comparable, post-intervention outcomes favoured the teacher-led arm, which demonstrated lower PSQI scores and reduced depression, anxiety, and stress. Teacher-led interventions may therefore be more effective than peer-led approaches in improving adolescent sleep health. However, peer-led strategies, though easier to implement, may require enhanced training and structured support. Further research is needed to optimize peer-led models while strengthening teacher-based interventions.

Acknowledgements

Indian Council of Medical Research New Delhi India.

Presenting Author
Asmaa Albitar (Qatar)

Authors
Asmaa Albitar (Qatar); Amal Alnaimi (Qatar); Haneen Toma (Qatar); Mutasim Abu-Hasan (Qatar)

Presentation Day and Board Number
Friday, April 10, 2026 | P22

Title
Positional vs non-Positional Obstructive Sleep Apnea in Children with Obesity

Introduction
The prevalence and severity of childhood obesity is increasing worldwide which increases the risk of obesity-associated morbidities. Childhood obesity is associated with multiple sleep breathing disorders such as OSA and hypoventilation. OSA in general occurs in 1–5% of healthy children. Unfortunately, the risk increases up to 5 folds in obese children. Chronic untreated OSA in children significantly complicates obesity and is an independent risk factor for cardiovascular and metabolic in obese children. Early identification and treatment of OSA in this susceptible population will likely improve their health outcomes. Locally there are multiple papers highlighting the high prevalence of obesity in children in Qatar. The Aim of the study is to describe obstructive sleep apnea phenotype in children with obesity including REM OSA and positional OSA, also to evaluate the effect of supine and non-supine sleep on OSA severity during REM and NREM sleep stages.

Materials and Methods
A retrospective chart review of all obese patients who did diagnostic polysomnography in our sleep lab. The following demographic and clinical data were collected: age, gender, BMI z score, symptoms of snoring and/or witnessed sleep apnea, other clinical comorbidities (Down syndrome, Prader well syndrome or other diseases), reported adenoid/tonsillar hypertrophy, history of adenotonsillectomy, the number and type of ENT surgical intervention required. Persistent OSA post adenotonsillectomy based on PSG or OSA symptoms. The following PSG parameters was collected: sleep efficiency, Rapid eye movement sleep (REM) percentage, Apnea Hypopnea Index (AHI), Obstructive apnea Hypopnea Index (OAHI), Central AHI, REM-AHI, mean O2 saturation, nadir O2 saturation, AHI in supine and non-supine position. All obstructive and central apnea and hypopnea events was scored according to the AASM criteria. Patients who had other diagnosis e.g. Down syndrome, Prader Willi syndrome were excluded.

Results

A total of 273 patients, 168 (61.5%) male. Mean (SD) Age was 9.3 (3.0) years. Mean (SD) BMI was 36.9 (7.2) kg/m2. Mean (SD) OAHI was 5.6 (8.8) events/hour. Mean (SD) REM OAHI was 15.5 (23.3) events/hour. Mean (SD) OAHI in supine position was 5.8 (7.9) events/hour. There was no significant difference between supine OAHI and non-supine OAHI in the entire cohort. However, there was significant difference between REM AHI and NREM AHI (14.7 + 22.6 vs 4.1+ 11.2, P<0.001), and a significant difference between REM OAHI and NREM OAH (13.4 + 21.4 vs 4.5 + 14.5, P<0.001). We found 95 patients (34%) with positional OSA. Positional OSA group had higher BMI than non-positional OSA group (40 + 11.3 vs 36 + 8.4, P < 0.001). Positional OSA group had significantly higher AHI, OAHI, REM AHI and REM OAHI than non-positional group (8.3 + 10.9 vs 5.2 + 13.2, P= 0.05; 7.7 + 11.0 vs 4.7 + 12.4, P= 0.04; 19.6 + 19.3 vs 12.0 + 23.7, P= 0.008; 18.1 + 18.5 vs 10.9 + 22.5. P= 0.008, respectively).

Conclusions

Positional OSA have more severe OSA than non-positional OSA in children with obesity. Severity of positional OSA correlates with degree of obesity and severity of REM OSA. These findings support targeting these children with positional therapy.

Presenting Author
ATHINA SOPIADOU (Greece)

Authors
ATHINA SOPIADOU (Greece); Theodoros Samaras (Greece); Apostolos Nikolopoulos (Greece); Evangelia Kouidi (Greece); Elisavet-Anna Chrysochoou (Greece); Kiriaki Tsiroukidou (Greece); Athanasios G. Kaditis (Greece); Elpis Hatziagorou (Greece)

Presentation Day and Board Number
Friday, April 10, 2026 | P23

Title
Autonomic Dysfunction and Reduced Cardiovascular Complexity in Overweight and Obese Children with Sleep-Disordered Breathing

Introduction
Obstructive sleep apnea is present in more than 50% of children with obesity. Both obesity and obstructive sleep apnea have been associated with cardiovascular complications and dysfunction of the autonomic nervous system. The study aimed to assess autonomic nervous system function using photoplethysmography-derived pulse rate variability (PRV) in overweight and obese children with suspected sleep-disordered breathing.

Materials and Methods
Overweight and obese children and adolescents (2–15 years) undergoing overnight cardiorespiratory polygraphy were studied. PRV was derived from photoplethysmography and analysed in time, frequency, and non-linear domains. Associations between PRV indices, anthropometric data, and sleep study parameters were examined.

Results
Thirty-five children and adolescents (mean age 11.6 years, 54% male) were included. Median Body Mass Index (BMI) was 32.3 kg/m^2, and the mean heart rate was 81 bpm. Median apnea hypopnea index (AHI) and oxygen desaturation index (ODI3) were 2.1 and 4.0 events/h, respectively. Significant associations were observed between PRV indices and sleep parameters (AHI, ODI3, SpO_2min). Children with sleep apnea showed reduced PRV complexity, with lower approximate entropy (ApEn: 0.75 vs 0.83, p = 0.031) and higher recurrence determinism (Rec DET%: 99.88 vs 99.84, p = 0.012) compared to those without sleep apnea. ODI3 was negatively associated with the percentage of successive NN intervals differing by >50 ms (pNN50) after adjustment for age and BMI (β = −0.05, 95% CI −0.09 to −0.01; p = 0.031).

Conclusions

In overweight and obese children and adolescents, findings suggest autonomic nervous system dysfunction characterized by reduced parasympathetic activity and complexity, which appears to be mainly related to intermittent hypoxia during sleep.

Presenting Author
Badar Al Dhouyani (Qatar)

Authors
Badar Al Dhouyani (Qatar); Amal Alnaimi (Qatar); Mutasim Abu-Hasan (Qatar)

Presentation Day and Board Number
Friday, April 10, 2026 | P24

Title
Characterization of Pseudo-Central Hypopnea Events Detected in Patients with Duchenne Muscular Dystrophy During Diagnostic Polysomnography

Introduction
Duchenne Muscular Dystrophy (DMD) is an X-linked genetic disease characterized by progressive muscle weakness resulting in loss of ambulation, hypoventilation, cardiomyopathy and eventual death due to respiratory or cardiac failure. Polysomnography (PSG) is recommended to detect early sings of severe respiratory muscle weakness, which manifests as frequent hypopnea events during sleep. Such events are commonly called pseudo central hypopnea (PCH) events to distinguish them from other types of hypopnea events. There are no clear criteria for scoring PCH events that differentiates them from other respiratory events, and their clinical significance is poorly studied. We aim to fully characterize PCH events that occur during sleep in DMD patients who have abnormal PSG.

Materials and Methods
All DMD children who completed at least one PSG with apnea hypopnea index (AHI) ≥ 1.5 events/hour were included in the study. All hypopnea events which did not meet AASM criteria for obstructive hypopnea events were considered PCH events and were characterized in detail. Continuous variables were summarized as mean (SD) or median (range) based on distribution. Categorical variables were summarized as frequency (%).

Results
Only 4 patients, with 7 PSG studies, met the inclusion criteria. Median age was 14.9 (12.6-16.8) years. All patients were wheelchair bound. Median FVC was 34.3 (18- 57) % predicted. Median maximal inspiratory pressure was 55.7 (21 – 55) cm H2O. Median Maximal expiratory pressure was 24.3 (19 – 31) cm H2O. Median AHI 1.95 (1.6 – 7.3) events/hour. Calculated Median OAHI 1.27 (0.41 – 2.15) events/hour

A total of 58 PCH events were identified in these patients. None of the events was associated with snoring, flattening of airflow or paradoxical breathing. The median (range) duration of

the events was 31 seconds (21 - 52). Fifty-one (88%) events occurred during REM sleep, and 28 (48.2%) events in supine position. Majority of events (96.5%) were associated with decrease in thoracic and abdominal signals, but was more pronounced in thoracic signal. Thirty-two (55%) events ended with sharp increase in air flow, and 13 (22.4%) events ended with gradual increase in airflow. Fifty-five (95%) events were associated with O2 desaturation, and 3 (5.1%) events were associated with arousals only. The median drop in baseline O2 desaturation was 4.6% (2.2). The median duration of O2 desaturation was 29 seconds (22 - 42). O2 desaturation started in the first half of 19 (32.7%) events, the second half of 31 (53.4%) events, and post-event in 4 (6.8%) events. The mean respiratory rate pre-event was 15 (1.3) bpm, during event was 15.9 (2.6) bpm and post-event was 18.1 (3.1) bpm. The mean heart rate pre-event was 77.8 (11.6), during event was 64.14 (10.2), and post-event was 80.23 (8.9).

Conclusions

Pseudo-central hypopnea events in DMD are characterized by significant decrease in airflow due to decrease in chest and abdominal effort, predominantly during REM sleep, with O2 desaturation and end sharply with post-event increase in respiratory rate and heart rate.

Presenting Author
Bethan Cornick (United Kingdom)

Authors
Bethan Cornick (United Kingdom); Caroline Richards (United Kingdom); Stacey Bissell (United Kingdom); Catherine Hill (United Kingdom); Desaline Joseph (United Kingdom); Chris Oliver (United Kingdom); Georgie Agar (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P25

Title
The SAFEBED Study: Stakeholder Perspectives on Enclosed Bed Designs

Introduction
Enclosed bed designs lack a consensus definition but typically consist of a mesh tent-like structure fixed onto an existing bed frame or comprise a stand-alone bed. An individual is zipped into the bed overnight and cannot exit the bed independently. Anecdotal evidence suggests enclosed beds are being used by individuals with intellectual disability as a last resort to manage sleep and behaviour overnight. However, there has yet to be an empirical evaluation of enclosed beds, and the mechanisms by which they may improve sleep or safety, if at all, is not well understood. Further there is currently no published guidance on the use of enclosed beds, and the prevalence of enclosed beds in the UK is unknown. Despite positive anecdotal caregiver accounts detailed in the literature, there are concerns about the restrictive nature of enclosed beds. We therefore sought to understand caregiver and professional perspectives on enclosed beds using a mixed-methods design.

Materials and Methods
Methods were three-fold: caregiver focus groups and interviews, an online professional survey, and a freedom of information request. Nineteen caregivers participated in a focus group or interview and were asked about the effect of their child's enclosed bed on the whole family's sleep, behaviour, and wellbeing, and the enclosed bed assessment process. Previous sleep support implemented prior to the enclosed bed was also investigated. An online survey was answered by 117 health and social care professionals, exploring their confidence and experience in different areas of the enclosed bed clinical pathway. A freedom of information request was sent to all UK local authorities to assess enclosed bed prevalence, implementation process and cost.

Results

Quantitative data were analysed with frequency and descriptive statistics whilst content and thematic analyses were used for qualitative data. Preliminary thematic analysis indicates that although some caregivers face issues during the assessment, funding and implementation process, enclosed beds have a positive impact on children and the wider family. Most caregivers had not received previous sleep support before an enclosed bed was provided. Frequency analysis identified that over 50% of professionals had experience with and had previously recommended an enclosed bed. Professionals broadly agreed that the most important factor to evaluate when examining enclosed bed efficacy related to the individual receiving the bed. However, professional confidence in the enclosed bed pathway varied, and this variation differed between occupations. Freedom of information findings identified that 1,457 beds have been provided by UK local authorities in the last five years, with a range from 1 to 103 beds (Mean = 15.3, Standard Deviation = 18.1) provided per region.

Conclusions

An empirical evaluation of enclosed beds is critical to understand their potential effectiveness in improving children's sleep and safety overnight. Such evaluation would inform the development of best practice guidance on the use of enclosed beds for children with intellectual disability.

Acknowledgements

The authors would like to thank all caregivers and professionals who participated and the funder, The Baily Thomas Charitable Fund.

Presenting Author
Burcu Aygun (Turkey)

Authors
Burcu Aygun (Turkey); İsmail Hakkı Akbeyaz (Turkey); Dilsad Turkdogan (Turkey)

Presentation Day and Board Number
Friday, April 10, 2026 | P27

Title
Sleep and Behavioral Problems in Childhood Self-Limited Epilepsies:Protocol for a Prospective Actigraphy-Based Study

Introduction
Self-limited childhood epilepsies (SeLE) typically follow a benign course; however, many children experience sleep disturbances, behavioral challenges, and difficulties in executive functioning that impact daily life. Families often report frequent night awakenings, restlessness, and daytime struggles with attention and emotional regulation. Actigraphy provides a practical and child-friendly method to capture sleep–wake patterns and sleep fragmentation in real-world settings, offering insight into aspects of sleep that may not be fully captured through subjective reports. By combining objective sleep data with standardized behavioral and executive function assessments, this study aims to improve understanding of neurocognitive vulnerability in children with SeLE and to explore the role of maternal well-being in shaping child outcomes.

Materials and Methods
This prospective observational study will include children aged 6–12 years diagnosed with (SeLE). All participants will wear the MotionWatch8 actigraphy device on the non-dominant wrist for a minimum of 72 hours. Actigraphy metrics will include total sleep time, sleep onset latency, wake after sleep onset, sleep efficiency, fragmentation index, frequency of wake bouts, diurnal activity levels, and light exposure patterns. Sleep diaries will be collected to support the interpretation of actigraphy-derived sleep–wake periods. Mother will complete the Children's Sleep Habits Questionnaire (CSHQ), the Strengths and Difficulties Questionnaire (SDQ), and the Behavior Rating Inventory of Executive Function (BRIEF), assessing behavioral difficulties and executive function domains such as inhibition, shifting, emotional control, working memory, and planning. Mothers will also complete the Pittsburgh Sleep Quality Index (PSQI) and the Beck Depression Inventory (BDI) to assess maternal sleep quality and depressive symptoms. Clinical epilepsy characteristics (epilepsy subtype, age at

onset, nocturnal seizure frequency, EEG features, and current treatment) will be recorded from hospital charts.

Descriptive statistics will summarize sleep, behavioral, and maternal measures. Correlation analyses will explore associations between actigraphy-derived sleep fragmentation and questionnaire-based behavioral and executive outcomes. Regression analyses will evaluate the contribution of maternal sleep quality and depressive symptoms to child sleep and behavioral profiles.

Results

As this is an ongoing study, data collection and analysis are still in progress. Preliminary findings are not yet available. Expected results include patterns of prolonged sleep latency, increased WASO, and elevated fragmentation index in children with SeLE. These sleep disruptions are anticipated to relate to higher behavioral difficulty scores and weaker executive functioning, particularly in working memory and inhibitory control.

Conclusions

This study is expected to provide one of the first comprehensive actigraphy-based examinations of sleep and executive functioning in children with SeLE. By integrating objective sleep metrics with behavioral outcomes and maternal factors, the research aims to identify modifiable contributors to sleep fragmentation and neurobehavioral challenges. Findings may inform early monitoring, family-centered interventions, and clinical approaches to sleep and cognitive health in childhood epilepsy.

Acknowledgements

This study is supported by the Scientific and Technological Research Institution of Turkey (TÜSEB) under the A-Group Emergency R&D Call for PhD / Medical Specialization Students (Call No: 2023-A3-02). We gratefully acknowledge TÜSEB's support for the project led by the Principal Investigator (PI No: 37641).

Presenting Author
Catriona Ewart (United Kingdom)

Authors
Catriona Ewart (United Kingdom); Joanna Inchley (United Kingdom); Anne Martin (United Kingdom); Sharon Simpson (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P31

Title
Widening the Lens on Adolescent Sleep: Using Photovoice to Explore Stakeholder Perspectives and Inform the Development of a Co-Produced Sleep Health Intervention

Introduction
Poor sleep among adolescents is a growing public health concern. However, existing interventions often lack stakeholder input during development, potentially limiting their effectiveness, acceptability, and scalability. This study used Photovoice, an arts-based participatory method, to engage adolescents, parents, and teachers in identifying barriers, facilitators, and multilevel strategies to improve adolescent sleep.

Materials and Methods
The study was conducted in three Scottish schools between January and December 2024. Forty-two adolescents aged 11–15 years (M = 13.1; 56% female) participated in the multistage study including photovoice training, photography tasks, participatory workshops, photo-elicitation interviews, and a community exhibition. Additional focus groups were held with parents (n = 14) and teaching staff (n = 15). Data from interviews, focus groups, workshops, and exhibition feedback were thematically analysed, with content analysis of photographs. Themes were mapped onto the socioecological model to identify leverage points and potential intervention targets.

Results
Sleep was influenced by factors across all socioecological levels: intrapersonal (knowledge, beliefs, self-efficacy, neurodiversity), interpersonal (parenting practices, peer influences, social media), institutional (school schedules and curricula), and societal (social norms, technology, health and education policy). Participants proposed a range of strategies including sleep education for students and parents, peer-led initiatives, social media campaigns, school policy guidance such as flexible class scheduling, and public health initiatives to promote sleep health.

Conclusions

Photovoice gave voice to young people to share an adolescent-led perspective on their sleep health and helped promote critical dialogue with parents, teachers, and other stakeholders through community exhibitions. Findings highlight the need for integrated, multilevel approaches that combine education, family and peer support, and wider systemic change to address broader determinants shaping adolescent sleep. Building on these insights, the next phase of this work will involve stakeholder workshops to co-develop strategies to promote adolescent sleep health.

Presenting Author
Catriona Ewart (United Kingdom)

Authors
Catriona Ewart (United Kingdom); Anne Martin (United Kingdom); Joanna Inchley (United Kingdom); Sharon Simpson (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P32

Title
Examining Effectiveness, Feasibility and Acceptability of Adolescent Sleep Interventions Delivered Across the Socioecological Model: A Mixed Methods Review

Introduction
Adolescent sleep health is a complex public health issue shaped by the interplay of individual, social, and societal factors. However, most interventions focus on individual behaviour alone, limiting potential to address upstream determinants or achieve population-level impact. This mixed-methods systematic review examined the socioecological levels addressed by adolescent sleep interventions, their effectiveness in improving sleep quality and duration, and the barriers and facilitators affecting feasibility, acceptability, and implementation.

Materials and Methods
Five databases (2003 – 2025) were searched for studies involving adolescents aged 10–19 years (population), participating in interventions aimed at preventing poor sleep or improving sleep (intervention) quality and/or duration (outcome). Segregated convergent design was used to synthesise quantitative data assessing effectiveness with vote counting and qualitative data thematically analysed in parallel, and findings were narratively reported.

Results
Fifty-three studies met the inclusion criteria. Most (71.7%) targeted a single socioecological level, primarily delivering intrapersonal components such as sleep education and therapeutic approaches. Interventions delivered at one (n = 38), two (n = 9), or three (n = 6) levels improved total sleep time in 71.4%, 77.8%, and 83.3% of studies, respectively. Improvements in sleep quality were reported in 68.8%, 80.0%, and 33.3% of studies across these levels. Qualitative synthesis highlighted both level-specific and cross-cutting influences on implementation, including intervention burden, the need for personalised components, and perceived relevance and effectiveness.

Conclusions

Despite growing evidence that multilevel approaches may offer greater improvements in sleep outcomes, most adolescent sleep interventions continue to target only a single level, typically the intrapersonal level, such as knowledge, beliefs, or habits. Future intervention development should integrate individual, interpersonal, organisational, and policy-level strategies to address the wider determinants of adolescent sleep to enhance scalability and potential population-level impact.

Presenting Author
CHAN SOON PARK (South Korea)

Authors
CHAN SOON PARK (South Korea)

Presentation Day and Board Number
Friday, April 10, 2026 | P33

Title
body composition and pedicatric OSA

Introduction
Adenotonsillectomy (AT) is the first-line treatment for pediatric obstructive sleep apnea (OSA), yet residual OSA after surgery is common. The extent to which treatment response is related to body habitus and body composition remains unclear.

Materials and Methods
We conducted a single-center retrospective study of children with OSA who underwent AT and both pre- and postoperative polysomnography (PSG). Demographics, height, weight, and preoperative body mass index (BMI) were recorded. PSG indices included sleep efficiency, sleep latency, REM sleep percentage, apnea–hypopnea index (AHI), respiratory disturbance index (RDI), oxygen desaturation index (ODI), snoring time, and minimum oxygen saturation. A subset of patients also underwent preoperative bioimpedance-based body-composition assessment. Pre- and postoperative PSG parameters were compared using paired tests. A "responder" was defined as having ≥50% reduction in AHI and postoperative AHI <2 events/h.

Results
28 (67.9% boys) had paired PSG and were included in the main analysis. Mean age was 7.7 ± 2.0 years and preoperative BMI was 19.2 ± 5.4 kg/m^2. Surgery was associated with large improvements in respiratory indices: mean AHI decreased from 19.35 ± 19.41 to 2.58 ± 2.50 events/h, RDI from 19.46 ± 19.53 to 2.58 ± 2.50 events/h (both $p<0.001$), and ODI from 12.94 ± 17.82 to 1.03 ± 1.58 events/h ($p=0.001$). In contrast, sleep efficiency, sleep latency, REM sleep percentage, snoring time, and minimum oxygen saturation did not change significantly. Postoperatively, 8 children (28.6%) had AHI <1, 12 (42.9%) had AHI <2, and 25 (89.3%) had AHI <5 events/h. Overall, 12 of 28 children (42.9%) met the responder definition. Compared with non-responders, responders tended to be younger (6.9 ± 1.5 vs 8.3 ± 2.1 years, $p=0.06$) and had a significantly lower preoperative BMI (15.7 ± 5.1 vs 21.9 ± 3.8 kg/m^2, $p=0.002$), whereas baseline AHI did not differ significantly. In the subset with available InBody data (n=17), this

BMI difference remained significant (15.4 ± 5.6 vs 22.9 ± 4.9 kg/m^2, p=0.016), while individual fat and lean mass indices showed no statistically significant group differences.

Conclusions

In children with OSA who underwent AT and had paired PSG, surgery produced substantial improvements in PSG-defined respiratory parameters, yet fewer than half fulfilled strict responder criteria and approximately 10% remained with AHI ≥5 events/h. Lower preoperative BMI, rather than baseline AHI, was associated with a greater likelihood of treatment response, suggesting that adiposity is an important marker of residual risk even after surgical treatment. Further studies integrating detailed body-composition and craniofacial assessments are warranted to refine risk stratification and postoperative follow-up strategies in pediatric OSA.

Presenting Author
Charlène Thauvin (Canada)

Authors
Charlène Thauvin (Canada); Geneviève Forest (Canada); Rachel Pétrin (Canada); Stéphanie Mazza (France); Amandine Rey (France); Sabine Plancoulaine (France); Lucie Malevergne (France); Évelyne Touchette (Canada); Marie-Hélène Pennestri (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P34

Title
Differences in Napping Practices and Beliefs in Quebec and France: A Cross-Cultural Analysis

Introduction
Although about half of children naturally stop napping around ages 3–4, this transition varies widely across children. Unlike nighttime sleep, naps mostly occur while children attend childcare or preschool, where daily routines are structured by institutional regulations. This study aims to compare napping practices in children aged 3 to 5 years in Quebec (daycares) and France (schools) by surveying professionals (educators and teachers) about their observations, practices, and beliefs, to better understand institutional differences between the two countries. Hereafter, the term “preschoolers” will correspond to children aged 3 to 5 years as an age group, regardless of the educational setting they attend.

Materials and Methods
This cross-border study was conducted in collaboration with McGill University, the University of Quebec in Outaouais, the University of Quebec in Trois-Rivières (Quebec, Canada), and Lyon 1 University (France). Responses from 288 school and childcare professionals (191 teachers from France and 97 educators from Quebec, all working directly with preschoolers) to an anonymous online questionnaire on napping practices were analyzed. Respondents reported observations, napping practices (nap frequency, duration, and onset time), and beliefs about napping among preschoolers. Differences from Quebec and France were examined using t-tests and chi-square analyses.

Results
Both Quebec and French professionals observed positive effects of a resting period including sleep (98.8% vs. 98.3%; $p = .796$) or not including sleep (82.4% vs. 86.4%; $p = .381$), as well as negative effects of nap absence (85.5% vs. 83.3%; $p = .688$) on preschoolers’ cognitive and behavioral functioning. Quebec professionals were more likely than French professionals to

report a scheduled nap period (100% vs. 75%; $p < .001$). Preschoolers in Quebec napped longer (92 ± 33 min vs. 79 ± 27 min; $p = .003$) and earlier (12:47 p.m. ± 21 min vs. 1:15 p.m. ± 28 min) than their French counterparts. Quebec professionals were also more likely to believe daily naps were essential for all children (67.5% vs. 50.8%; $p = .012$), while most professionals both in Quebec and France reported not having received information on child sleep during their training (55% vs. 66%, $p = .089$).

Conclusions

These results suggest that while professionals' observations are similar across Quebec and France, significant differences exist in actual napping practices. Preschoolers in Quebec are more likely to be offered a daily nap opportunity, nap for longer, and begin their nap earlier than French children. Quebec professionals were also more likely to believe that a daily nap is essential for all children. Importantly, professionals in both Quebec and France reported not having received information about child sleep in their training. Overall, these findings suggest that napping practices may be shaped more by the cultural and institutional contexts in which they develop than by children's physiological sleep needs. Further research is needed to determine optimal napping practices for preschoolers and to support the development of evidence-based guidelines.

Acknowledgements

This work was supported by the Programme Samuel-de-Champlain (FRQ, Canada and France Council, France) [grant to Evelyne Touchette and Amandine Rey, principal investigators]. Marie-Hélène Pennestri holds the Canada Research Chair (II) in Pediatric Sleep.

Presenting Author
Cheng-Hui Lin (Taiwan)

Authors
Cheng-Hui Lin (Taiwan); Yu-Shu Huang (Taiwan)

Presentation Day and Board Number
Friday, April 10, 2026 | P35

Title
Surgical Treatment to Reverse the Vicious Cycle of Pediatric Obstructive Sleep Apnea

Introduction
Pediatric sleep-disordered breathing is closely related to craniofacial underdevelopment. In patients with craniofacial deformities such as cleft, hemifacial microsomia, Pierre-Robin Sequence, Treacher-Collins Syndrome, or craniosynostosis, the craniofacial skeleton could be narrowed, and the upper airway is compromised since birth. In pre-school children, tonsillar and adenoid hypertrophies are the main reasons for pharyngeal airway obstruction. Nasal obstruction and mouth breathing negatively impact craniofacial growth. Affected craniofacial structures may further compromise the upper airway. Thus, a vicious cycle forms.

Materials and Methods
Retrospective review of 10 pediatric patients of obstructive sleep apnea. Cephalometries before and more than 6 months after adenotonsillectomy were obtained. Overbite, overjet, pharyngeal airway dimensions, craniocervical angles, and distance from hyoid to mandibular plane are measured.

Results
At 6 months after surgery, the apnea-hypopnea index improved from 15.7/hr± 8.3/hr to 3.6±3.2/hr. The pharyngeal airway dimensions are improved. The craniofacial structures and measurements are also modified toward the normal range, including dental and skeletal relationships over the craniomaxillofacial region.

Conclusions
Proper surgical treatment of pediatric obstructive sleep apnea may improve polysomnographic indices and help children out of the vicious cycle of underdevelopment of the skeletal framework, a narrowed pharyngeal airway, and sleep-disordered breathing.

Presenting Author
Chiara Piantino (United Kingdom)

Authors
Chiara Piantino (United Kingdom); Ankitha Rajaram (United Kingdom); Ullrich Bartsch (United Kingdom); Paul Gringras (United Kingdom); Adam Birdseye (United Kingdom); Emily Senior (United Kingdom); Laura Pérez-Carbonell (United Kingdom); Thomas Rossor (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P36

Title
Narcolepsy Revolution: Wearable technology and interpretable machine learning for automated sleep and diagnostic classification in narcolepsy and other hypersomnia.

Introduction
Narcolepsy is a rare neurological disorder with the occurrence of rapid eye movement sleep after sleep onset as a typical symptom. Current diagnostic protocols rely on manual assessments of sleep neurophysiology, including overnight polysomnography (PSG) followed by the Multiple Sleep Latency Test (MSLT) by clinically trained personnel. These procedures are resource-intensive and operationally demanding, contributing to prolonged diagnostic delays in many healthcare systems due to limited clinical capacity.

Emerging wearable technology and machine learning offers significant promise for improving the diagnosis of narcolepsy and other sleep disorders by enabling automated, data-driven analysis of sleep physiology.

Materials and Methods
We conducted an evaluation study by deploying a wearable electroencephalography (EEG) headband (Waveband, Beacon Biosignals, Boston, MA – formerly Dreem 3S) in parallel to standard of care assessments including PSG and MSLT. We recruited 61 participants that presented with symptoms of hypersomnia or other unusual sleep patterns and asked them to wear the headband for up to 7 consecutive nights at home. EEG and movement were recorded by the device and uploaded to the manufacturers cloud storage and raw sensor data was downloaded for further analysis.

To develop our feature engineering pipeline and classification models, we used an open-source PSG dataset (MNC, sleepdata.org) as training data. We used a single frontal EEG channel to calculate a set of features that included time-domain, frequency-domain, and

nonlinear metrics. Feature sets were used to train a number of machine learning models including XGBoost and Random Forest (RF) architectures to predict sleep stages and diagnosis in training data and the clinical sample.

Results

Our results show that the deployment of a wearable EEG headband is feasible in a clinical environment.

Our EEG analysis demonstrates robust sleep stage classification in patients with sleep disorders. Using type 1 narcolepsy and hypersomnia patient datasets with feature engineering and a balanced RF classifier achieves up to 89% accuracy, 89% sensitivity and 75.8% specificity for sleep stage classification.

In addition, we explored how EEG derived features allow distinction of type 1 narcolepsy from other hypersomnia and healthy controls in the training set.

Conclusions

By leveraging features extracted from a single lead sleep EEG, machine learning can identify diagnostically relevant features with high accuracy and consistency.

The combined use of wearable technology and explainable machine learning has the potential to streamline diagnostic workflows, reduce clinician workload, and shorten time to diagnosis, particularly in resource-constrained settings.

Acknowledgements

This work was supported by Great Ormond Street Hospital Charity Grant V4823.

Presenting Author
Chien-Ming Yang (Taiwan)

Authors
Chien-Ming Yang (Taiwan); Ya-Chuan Huang (Taiwan); Yun-Sen Chang (Taiwan)

Presentation Day and Board Number
Friday, April 10, 2026 | P38

Title
To Connect or Not to Miss Out: Distinct Motivations for Pre-Sleep Social Media Use and Their Associations with Sleep and Emotional Problems in Adolescents

Introduction
Pre-sleep social media use has been linked to sleep disturbances and emotional distress among adolescents; however, the psychological mechanisms underlying these associations remain insufficiently understood. In particular, little research has examined how motivations for engaging in social media before bedtime relate to sleep and mental health outcomes. Previous research suggests that pre-sleep social media engagement may be driven by both negative reinforcement through reducing perceived threats (e.g., fear of missing out), and positive expectations of benefits (e.g., staying informed and maintaining social connection). To further understand the psychological processes underlying pre-sleep social media use, the present study examined associations between distinct motivational dimensions of pre-sleep social media use and sleep problems, and emotional symptoms among adolescents.

Materials and Methods
A total of 3,820 adolescents aged 11–19 years (52.6% female; Age Mean = 15.13, SD = 1.77), recruited from high schools in Taipei City, participated in this cross-sectional study. Participants completed a package of self-report questionnaires assessing motivations for pre-sleep social media use (Pre-Sleep Social Media Use Motivation Scale; PS-SMUMS), sleep problems (Children's Sleep Habits Questionnaire; CSHQ), anxiety symptoms (Generalized Anxiety Disorder scale; GAD-7), and depressive symptoms (Kutcher Adolescent Depression Scale; KADS). The PS-SMUMS comprises two motivational dimensions: cost avoidance and benefit expectation. Pearson's correlations between PS-SMUMS subscale scores and the sleep and mood variables were conducted separately for each motivational dimension subscales, controlling for age.

Results
The cost-avoidance subscale of the PS-SMUMS showed moderate associations with GAD-7 (r =

0.31, p < .001) and KADS scores (r = 0.35, p < .001). The benefit-expectation subscale was also significantly associated with anxiety (r = 0.21, p < .001) and depression (r = 0.26, p < .001), although theses associations were weaker in magnitude. Cost-avoidance motivation was also significantly associated with a broad range of sleep difficulties, including bedtime resistance (r = 0.08, p < .001), sleep onset delay (r = 0.06, p < .001), inadequate sleep duration (r = 0.12, p < .001), sleep anxiety (r = 0.17, p < .001), night wakings (r = 0.16, p < .001), parasomnias (r = 0.22, p < .001), breathing-related sleep problems (r = 0.20, p < .001), and daytime sleepiness (r = 0.20, p < .001). In contrast, benefit-related motivation showed significant but smaller associations with inadequate sleep duration (r = 0.08, p < .001), sleep anxiety (r = 0.08, p < .001), night waking (r = 0.08, p < .001), parasomnia (r = 0.15, p < .001), breathing-related sleep problems (r = 0.09, p < .001) and daytime sleepiness (r = 0.16, p < .001), but was not significantly associated with bedtime resistance or sleep onset delay (rs = .01, n.s).

Conclusions

The present findings indicate that motivations for pre-sleep social media use are differentially associated with emotional distress and, to a less extent, subjective sleep problems among adolescents. Specifically, cost-avoidance motivation, reflecting concerns about being offline or missing out, demonstrated stronger and more consistent associations with both emotional symptoms and sleep difficulties than benefit-expectation motivation. Notably, cost-avoidance motivation, but not benefit expectation, was associated with bedtime resistance and delayed sleep onset. These results underscore the importance of examining motivational processes underlying pre-sleep social media use to inform more target strategies for managing nighttime media engagement and mitigating its negative impact on adolescent sleep and mental health.

Acknowledgements

This study is supported by the Department of Health, Taipei City Government.

Presenting Author
CHOW KHUEN CHAN (Malaysia)

Authors
CHOW KHUEN CHAN (Malaysia); LIANG CHYE GOH (Malaysia)

Presentation Day and Board Number
Friday, April 10, 2026 | P39

Title
Perspectives and Challenges of Incorporating Artificial Intelligence and Sleep Technology for Sleep Monitoring among Children: A Systematic Review

Introduction

In the sleep healthcare for children, incorporating artificial intelligence (AI) and wearable sleep technology represent a significant technological breakthrough in apprehending the sleep pattern among the children. The capability of the two technologies provides convenience and faster interpretation in sleep monitoring among the children. Additionally, this facilitates essential data that affects the children's developmental outcomes, identifying problems, which occur much earlier. AI and wearable technology able to provide detailed, accurate and prompt data about sleep patterns, such as sleep stages, durations and quality. However, the capabilities and concerns relating to these two technologies have not been fully apprehended. Hence, this review ought to identify the abilities and challenges of these technologies, particularly for children suffering diseases.

Materials and Methods
Search strategies: The following keywords were used to search for articles in each database from 2019 to May 2025: (''sleep quality'') AND (''artificial intelligence'' OR ''machine learning'' OR ''deep learning") AND (''wearable technology'' OR ''modern technology'') AND (''children'' OR ''paediatrics''). The search was limited to peer reviewed, English medium original studies. The studies were selected to allow for the inclusion of up-to-date research while ensuring a sufficient span of years to identify trends. Review papers, case studies, and early access papers were excluded. The search was restricted to the title and abstract fields to enhance relevance. Web of Science, Scopus, and PubMed were utilized to gather relevant studies. Study screening was conducted by a single reviewer, which may introduce a risk of selection bias; however, pre-defined inclusion and exclusion criteria were applied to minimize this risk. The study selection process follows the PRISMA flow diagram. Exclusion criteria: The following exclusion criteria were employed during the screening process: (1) Animal studies; (2) Any

clinical population; (3) Qualitative studies; (4) Review papers; (5) Experimental studies; (6) Age range outside of children; (7) Case studies. EndNote was used to store and manage the included studies. Duplicate removal was performed twice using both the automatic duplication removal function of EndNote and manual checking.

Results

A considerable number of articles were identified in the initial search, whereby duplicates were removed. Articles that did not meet age criteria or include necessary data were removed. All included studies were assessed based on the study design, location, sample size, age range, sleep assessment methods, and variable assessment.

Conclusions

This review underscores the roles in enhancing paediatric sleep management through AI and wearable technology. The technologies' efficacy notes the impact on treatment strategies that lead to proper and restorative sleep habits. These technologies facilitate better sleep, which leads to improved problem-solving skills, memory and emotional processing. AI is able to classify sleep scoring and facilitate prediction. Nevertheless, accuracy of AI outcomes is debatable because of the limited dataset, which leads to biasness. Utilizing modern sleep devices provides timely interventions aside from reducing the sleep-related cognitive impairments. However, this technology could emit low EMF, which could prone to children's safety and parental concerns. It is important to consider whether the devices are FDA-registered as wellness device or FDA approved for better data interpretation among healthcare professionals.

Acknowledgements

This research is supported by Universiti Malaya Impact Oriented Interdisciplinary Research Grant (IIRG004B-2022SAH).

Presenting Author
Christian Caussé (France)

Authors
Giuseppe Plazzi (Italy); Michel Lecendreux (France); Gert Jan Lammers (Netherlands); Patricia Franco (France); Mikhail Poluektov (Russia); Christian Caussé (France); Jeanne-Marie Lecomte (France); Jean-Charles Schwartz (France); Yves Dauvilliers (France)

Presentation Day and Board Number
Friday, April 10, 2026 | P40

Title
Safety and efficacy of pitolisant in children aged 6 to 18 years with narcolepsy with or without cataplexy: results from a prolonged open-label extension

Introduction
In a multicenter, randomized, double-blind, placebo-controlled study, pitolisant demonstrated efficacy and safety in children aged 6 years and older with narcolepsy, leading to its approval by the European Medicines Agency and the U.S. Food and Drug Administration in 2023–2024. The present presentation reports the long-term safety and effectiveness of pitolisant observed during the prolonged open-label extension period.

Materials and Methods
Following the double-blind period (8 weeks of pitolisant or placebo followed by a 1-week placebo phase), patients were offered participation in an open-label (OL) extension to assess the long-term safety and effectiveness of pitolisant. During the OL period, patients could continue treatment with pitolisant until commercial availability or until reaching 18 years of age. Long-term effectiveness was evaluated primarily through reductions in excessive daytime sleepiness, as measured by the Pediatric Daytime Sleepiness Scale (PDSS).

Results
A total of 115 patients were screened, of whom 110 were randomized in the double-blind (DB) period (38 to placebo and 72 to pitolisant). One hundred and six patients (36 previously receiving placebo and 70 previously receiving pitolisant) entered the open-label (OL) period, and 105 patients received at least one dose of pitolisant. Overall, 77.1% of patients were treated for at least 12 months during the OL period. Follow-up visits were conducted every 6 months after one year.

The mean (SD) age at inclusion was 12.8 (3.0) years, with 83% of patients diagnosed with NT1 and 17% with NT2. During the stable-dose phase of the OL period, among 75 patients, 57

patients (18 previously on placebo and 39 previously on pitolisant) received pitolisant 40 mg, 10 patients (4 and 6, respectively) received 20 mg, and 7 patients (4 and 3, respectively) received 10 mg.

The most frequently used concomitant medications during the open-label (OL) period were sodium oxybate (SO) and methylphenidate. At the end of the study, SO was reported by 25% of patients, and methylphenidate by 11.5%.

Among patients entering the OL period, the mean (SD) Pediatric Daytime Sleepiness Scale (PDSS) total score was 20.1 (3.5) and 20.0 (3.7) at baseline in the prior placebo and pitolisant groups, respectively. Scores decreased to 17.8 (6.0) and 14.8 (5.8) at the end of the DB period, and further to 12.3 (5.7) and 13.1 (6.3) at the end of the OL period.

Overall, 247 treatment-emergent adverse events (TEAEs) were reported in 56 patients (52.8%) throughout the study. The proportion of patients experiencing at least one TEAE during the DB period was similar between treatment groups (31% in the pitolisant group and 34% in the placebo group). During the DB period, 60 TEAEs occurred in the pitolisant group and 27 TEAEs in the placebo group, whereas 103 and 57 TEAEs, respectively, were reported during the OL period. Across the entire study, the most frequently reported adverse events were headache (22.6%), insomnia (10.4%), and irritability (5.7%)."

Conclusions

This long-term study confirms that pitolisant is effective and generally well tolerated in children aged 6 to <18 years with narcolepsy, with or without cataplexy.

Presenting Author
Christine Matarese (United States)

Authors
Christine Matarese (United States)

Presentation Day and Board Number
Friday, April 10, 2026 | P43

Title
Central sleep apnea in the setting of a Chiari I malformation

Introduction
This poster will illustrate a case of central sleep apnea (CSA) in a 2-year-old boy with a Chiari 1 malformation (discuss presenting symptoms, show polysomnogram (PSG) examples of his CSA, show MRI images of his Chiari 1 malformation and offer discussion on the relationship between sleep disordered breathing and Chiari I malformation.

Materials and Methods
This is a case report of a 2-year-old boy with symptoms of both obstructive and central sleep apnea, known to have a Chiari 1 malformation and referred to Sleep Medicine to evaluate for sleep disordered breathing.

Results
A PSG was performed and central sleep apnea was identified. Obstructive sleep apnea was not present. His episodes of central sleep apnea on PSG were stereotypical (occurred during stage N2, typically 6-9 seconds in duration and occurred in clusters of 4-5 central apneas interspersed with 1-2 normal breaths, usually precipitated by an arousal but this pattern would then continue 4-5 times). MRI brain demonstrated pointed cerebellar tonsils extending 2.1 cm below the level of the foramen magnum with diminished CSF flow. He was scheduled for surgical decompression.

Conclusions
Patients with Chiari 1 malformation have an increased risk of sleep disordered breathing, both obstructive and central sleep apnea. Sleep symptoms of central sleep apnea can be subtle. It is important to consider central sleep apnea in patients with Chiari 1 malformation. Evaluation for sleep disordered breathing can assist with surgical decision making.

Presenting Author
Christine Matarese (United States)

Authors
Christine Matarese (United States); Julie Baughn (United States); Robin Lloyd (United States); Channing Sorensen (United States)

Presentation Day and Board Number
Saturday, April 11, 2026 | P04

Title
Adaptive Servo-Ventilation (ASV) Use in Children: A Case Series

Introduction
ASV is used in the practice of adult Sleep Medicine, particularly for central sleep apnea (CSA) in the setting of heart failure, Cheyne-Stokes respiration, opioid use, or treatment emergent CSA. Treatment options for CSA in children are not well described in the literature and may include oxygen therapy, continuous positive airway pressure (CPAP), or bilevel positive airway pressure with a backup rate. ASV is not frequently used in the pediatric population and there is a paucity of published literature on the use of ASV in the treatment of pediatric sleep disordered breathing. We present five pediatric patients from our pediatric Sleep Medicine practice who are benefiting from ASV for CSA after other treatment modalities failed to provide benefit.

Materials and Methods
This was a retrospective case series of five patients, ages 4-17 years followed in the Center for Sleep Medicine in Mayo Clinic, Rochester MN, USA. They all underwent polysomnograms demonstrating CSA +/- obstructive sleep apnea (OSA). They underwent various combinations of titration studies (CPAP, bilevel positive airway pressure, ASV). Three patients had previously undergone adenotonsillectomy. Some had previously trialed other treatment modalities including supplemental oxygen, CPAP, autotitrating positive airway pressure (autoPAP) and vagus nerve stimulation (VNS) adjustments.

Results
The etiologies of central sleep apnea differed between patients and included cerebral folate deficiency, vagus nerve stimulation (used for the treatment of epilepsy), Chiari I malformation, TECPR2 related hereditary sensory and autonomic neuropathy with intellectual disability and Coffin-Lowry syndrome. Prior treatment modalities including adenotonsillectomy, supplemental oxygen, CPAP, autoPAP and VNS adjustments had failed to

provide benefit for their sleep disordered breathing. All five patients tolerated ASV, and it provided benefit for their central sleep apnea.

Conclusions

Pediatric Sleep Medicine providers frequently care for medically complex children with sleep disordered breathing. Many of these children can be treated with more traditional modalities such as CPAP and bilevel positive airway pressure, but those modalities may not be successful in all patients. This growing, complex and heterogeneous population may benefit from the use of treatment modalities traditionally used in the adult population. We demonstrated the successful use of ASV in five unique, medically complex pediatric patients in our institution after unsuccessful trials of other modalities. Recognizing the potential availability and use of ASV is imperative for pediatric Sleep Medicine providers as it may provide benefit for their most challenging patients.

Presenting Author
Chun Ting Au (Canada)

Authors
Chun Ting Au (Canada); Sanjana Raja Rao Nagaraj (Canada); Mystica Terrance (Canada); Ganesh Subramanian (Canada); Purti Papneja (Canada); Indra Narang (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P44

Title
Prevalence and Characteristics of Positional Obstructive Sleep Apnea in a Racially Diverse Pediatric Population: Preliminary Results from a Community-Based Study

Introduction
Positional obstructive sleep apnea (POSA) is characterized by upper airway obstruction that worsens when individuals sleep in supine position. This OSA subtype is commonly seen in both adults and children. Currently, there is a lack of knowledge regarding the prevalence of POSA in otherwise healthy children who may benefit from personalized treatment, specifically positional therapy, as an alternative to surgical intervention and CPAP. The objective of this study is to determine the prevalence and characteristics of POSA and to evaluate its association with symptoms in a racially diverse pediatric population.

Materials and Methods
Otherwise healthy children aged 4–17 years undergoing clinically indicated overnight polysomnography at a community-based sleep laboratory were prospectively recruited. Data collected included body size measurements, tonsil size, and OSA symptoms assessed using the Pediatric Sleep Questionnaire (PSQ). A PSQ total score of greater than 0.33 indicates a high risk for OSA based on parent-reported symptoms. POSA was defined as: (1) obstructive apnea-hypopnea index (OAHI) ≥1.5 events/hour, (2) supine to nonsupine OAHI ratio ≥2, and (3) at least 30 minutes of sleep in both supine and non-supine positions.

Results
Preliminary analysis included 187 children (mean age 8.7 ± 3.2 years; 62% male; 43% White, 18% East Asian, 9% South Asian, 4% Black). Based on overall OAHI, 43 (23%) had no OSA (OAHI

Conclusions
In this diverse pediatric cohort, 30% of children with OSA were identified as having POSA. POSA was associated with enlarged tonsils and greater neck circumference, but these

children exhibited a similar symptom burden compared to those with non-POSA. These findings suggest that POSA may represent a distinct childhood OSA phenotype with greater anatomical deficits, potentially amenable to positional therapy. Further studies are warranted to investigate potential racial differences and to evaluate both the short- and long-term effects of positional therapy compared to adenotonsillectomy in children with POSA, especially in those with enlarged tonsils.

Acknowledgements

We appreciate all participants for their active participation and the staff at the Richmond Hill Sleep Lung Institute for their contributions to the study.

Presenting Author
Chun Ting Au (Canada)

Authors
Emily Brinovec (Canada); Rianna Sarbajna (Canada); Sanjana Raja Rao Nagaraj (Canada); David Benzon (Canada); Adele Baker (Canada); Jessica Hildebrandt (Canada); Shania Sheth (Canada); Sara Ahola Kohut (Canada); Indra Narang (Canada); Chun Ting Au (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P45

Title
Participants' Experiences of a Mindfulness-Based Intervention to Improve CPAP Adherence in Adolescents with Sleep Apnea: A Qualitative Study

Introduction
Obstructive sleep apnea (OSA), characterized by intermittent upper airway blockage during sleep, is a common disorder in children. Continuous positive airway pressure (CPAP) is the standard treatment for OSA, with its effectiveness relying on nightly use during sleep. However, adherence to CPAP among adolescents is often poor, leading to under-treatment and potential chronic health issues. Prior studies suggest that higher dispositional mindfulness correlates with better CPAP adherence in adults. Mindfulness-based interventions (MBI) have been linked to improved health in adolescents with chronic illnesses, but their effectiveness in improving CPAP adherence is unknown. This study aimed to explore adolescents' experiences and perceptions of their participation in the MBI program.

Materials and Methods
This qualitative study was a part of a two-arm randomized controlled trial evaluating the effectiveness of a 4-week online MBI program versus a peer-support program in 33 adolescents with OSA using CPAP. Semi-structured interviews were conducted post-intervention and four weeks later. Interviews were transcribed and analyzed using Braun and Clarke's thematic analysis framework. Independent coding was performed by two researchers, with themes developed collaboratively.

Results
Ten participants in the MBI arm, each with two interviews, were included in this preliminary analysis. Participants reported overall satisfaction with the program, valued social connections with peers, and appreciated learning mindfulness techniques that helped improve mood, stress, and anxiety. However, most did not perceive a direct impact on their

CPAP use. Suggestions for improvement included increasing group size and incorporating more discussion about CPAP and OSA.

Conclusions

These interviews reveal the benefits of MBI on adolescents with OSA using CPAP, including positive psychosocial impacts. They also suggest areas for enhancing the delivery of MBI, particularly regarding logistical challenges and curriculum structure.

Acknowledgements

This work was supported by the Canadian Institutes of Health Research (CIHR) Project Grant (Ref. no.: 452091).

Presenting Author
Chun Ting Au (Canada)

Authors
Chun Ting Au (Canada); Rianna Sarbajna (Canada); David Benzon (Canada); Adele Baker (Canada); Lena Xiao (Canada); Jessica Hildebrandt (Canada); Sara Ahola Kohut (Canada); Indra Narang (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P05

Title
Can Mindfulness-Based Intervention Improve CPAP Adherence in Adolescents with Obstructive Sleep Apnea?

Introduction
Continuous positive airway pressure (CPAP) is the standard treatment for OSA, with its effectiveness relying on nightly use during sleep. However, adherence to CPAP among adolescents is often poor, leading to under-treatment and potential chronic health issues. Prior studies suggest that higher dispositional mindfulness correlates with better CPAP adherence in adults. Mindfulness-based interventions (MBI) have been linked to improved health in adolescents with chronic illnesses, but their effectiveness in improving CPAP adherence is unknown. This randomized controlled trial evaluated the effectiveness of an MBI program in improving CPAP adherence among adolescents with OSA compared with a peer support group. We hypothesized that adolescents with OSA receiving MBI would have higher adherence to CPAP when compared to receiving peer support.

Materials and Methods
This was a pilot two-arm, parallel-comparison, single-blinded randomized controlled trial. Adolescents aged 13-18 years old with moderate-to-severe OSA diagnosed by an overnight polysomnography at the Hospital for Sick Children and prescribed CPAP were recruited. Following consent, participants were instructed to use CPAP in accordance with usual-care clinical support, and baseline CPAP adherence data will be collected. After 4 weeks, participants were randomized in a 1:1 allocation ratio to receive 1) the online mindfulness-based intervention (MBI) or 2) an online active control intervention, a peer support group for 4 weeks. The MBI program used in this trial was based on the Mindful Awareness and Resilience Skills for Adolescents (MARS-A) program, a group intervention with 4-6 participants, comprising 8 sessions over 4 weeks. The peer support program was led by a nurse practitioner, who facilitated group discussions and sharing of experiences with OSA and CPAP

use. Participants were followed up virtually at 8 and 12 weeks, during which repeat measures and adherence data were collected. The primary outcome was PAP therapy usage measured as the mean minutes of nightly PAP usage. Secondary outcomes, including barriers to PAP use, daytime sleepiness, psychosocial functioning, treatment self-efficacy, and mindfulness skills, were assessed using self-report questionnaires.

Results

A total of 46 adolescents were screened for eligibility. Of these, 37 were enrolled [23 (62%) male, median (IQR) age: 15.5 (13.8–16.7) years, baseline OAHI: 12.8 (8.0−22.6) events/hour], of whom 33 completed study procedures from October 2021 to May 2025. 19 were assigned to the MBI group, while 18 were assigned to the Peer Support group. No significant treatment effect on PAP adherence (in minute/night) could be observed [MBI group: baseline: 61 (0−273), 8-week: 3 (0−200), 12-week: 14 (0−223); Peer support group: baseline: 5 (0−55), 8-week: 0 (0−65), 12-week: 0 (0−65); p (group*time) >0.5]. No significant improvements were observed in any secondary outcomes either.

Conclusions

MBI did not provide measurable improvements in PAP adherence or self-reported clinical outcomes among adolescents with moderate-to-severe OSA.

Acknowledgements

This work was supported by the Canadian Institutes of Health Research (CIHR) Project Grant (Ref. no.: 452091).

Presenting Author
Chun Ting Au (Canada)

Authors
Chun Ting Au (Canada); Sanjana Raja Rao Nagaraj (Canada); Mystica Terrance (Canada); Ganesh Subramanian (Canada); Purti Papneja (Canada); Indra Narang (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P06

Title
Prevalence and Characteristics of REM-related Obstructive Sleep Apnea in a Racially Diverse Pediatric Population: Preliminary Results from a Community-Based Study

Introduction
Rapid eye movement (REM)-related obstructive sleep apnea (OSA) is characterized by obstructive apneas and hypopneas that occur predominantly during REM sleep periods. Identification of REM-related OSA may have clinical relevance in pediatric populations by providing a physiologic explanation for symptom–OAHI discordance in children with low overall OAHI. Currently, there is a lack of knowledge regarding the prevalence of REM-related OSA in otherwise healthy children. The objective of this study is to determine the prevalence and characteristics of REM-related OSA and to evaluate its association with symptoms in a racially diverse pediatric population.

Materials and Methods
Otherwise healthy children aged 4–17 years undergoing clinically indicated overnight polysomnography at a community-based sleep laboratory were prospectively recruited. Data collected included body size measurements, tonsil size, and OSA symptoms assessed using the Pediatric Sleep Questionnaire (PSQ). A PSQ total score >0.33 indicates a high risk for OSA based on parent-reported symptoms. REM-related OSA was defined as: (1) obstructive apnea-hypopnea index (OAHI) ≥1.5 events/hour, (2) REM-to-NREM-OAHI ratio ≥2, and (3) at least 30 minutes of sleep in both REM and NREM sleep stages. Children with less than 30 minutes of REM sleep or NREM sleep were excluded from the analysis.

Results
Preliminary analysis included 187 children (mean age 8.7 ± 3.2 years; 62% male; 43% White, 18% East Asian, 9% South Asian, 4% Black). Based on overall OAHI, 43 (23%) had no OSA (OAHI <1.5), 74 (40%) had mild OSA (OAHI 1.5–5), 37 (20%) had moderate OSA (OAHI 5–10), and 33 (18%) had severe OSA (OAHI ≥10). Among 144 participants with OSA, 35 (24.3%) were

classified as REM-related OSA, 94 (65.3%) as non-REM-related, and 15 (10.4%) were unclassified due to insufficient time in REM or NREM sleep.

Children with REM-related OSA had a higher OAHI during REM sleep [8.5 (5.4—26.5) vs. 3.5 (1.6—8.5) events/hour; p <0.001] and a lower OAHI during NREM sleep [3.0 (1.4—5.1) vs. 4.7 (3.1—7.7) events/hour; p =0.003] compared to the non-REM-related group, despite a similar overall OAHI [5.2 (2.7—10.0) vs. 4.6 (2.9—8.0) events/hour]. Additionally, the REM-related OSA group had a greater waist circumference (72.0 ± 21.3 vs. 63.8 ± 15.6 cm, p=0.043), a higher oxygen desaturation index [6.4 (3.7—9.9) vs. 4.2 (2.8—7.4), p=0.016), but a lower arousal index [9.9 (7.7—14.8) vs 11.6 (9.6—14.6), p=0.046] than the non-REM-related OSA group. No significant differences were found in age, sex, body mass index z-score, ethnicity, or PSQ symptom score between the two groups.

Conclusions

In this diverse pediatric cohort with predominantly mild-to-moderate OSA, approximately a quarter of participants were identified as having REM-related OSA, which was associated with greater waist circumference and a higher oxygen desaturation burden, but with a lower arousal index than non-REM-related OSA. Further studies are warranted to investigate potential racial differences and to evaluate longitudinal clinical outcomes linked to REM-related OSA.

Acknowledgements

We appreciate all participants for their active participation and the staff at the Richmond Hill Sleep Lung Institute for their contributions to the study.

Presenting Author
Dandi Ma (China)

Authors
Dandi Ma (China); Rui Wang (China); Yunxiao Wu (China); Zhifei Xu (China)

Presentation Day and Board Number
Friday, April 10, 2026 | P46

Title
Respiratory events-related aperiodic EEG activity changes in children with obstructive sleep apnea

Introduction
Aperiodic electroencephalography (EEG) activity (slope) is dynamic, reflecting shifting excitatory:inhibitory (E:I) balance with changing environmental conditions. Higher slope indicates lower E:I balance. This study aims to analyze the characteristics of changes in aperiodic EEG activity that occur before, during, and after respiratory events in children with obstructive sleep apnea (OSA).

Materials and Methods
A total of 100 children aged 6–11 years were included. The sleep aperiodic EEG activity was spectrally analyzed in three 10-s epochs across respiratory events, namely consecutive 10-s epochs before event onset, 10-s epochs during event, and 10-s epochs after event termination. The slope, aperiodic EEG feature, of the whole brain distribution in non-rapid eye movement (NREM) and REM periods was compared across respiratory events categorized as obstructive apnea (OA) with and without cortical arousal; hypopnea (H) with and without cortical arousal; central apnea (CA) with and without cortical arousal.

Results
Among the 100 children, 55 were diagnosed with mild OSA, 20 with moderate OSA, and 25 with severe OSA. A total of 2108 isolated respiratory events were analyzed. Compared with slope before events, the slope during events were higher (indicating lower E:I) and the slope after events were lower (indicating higher E:I). A mixed-effects model showed that Δslopeduring-before (slope in during minus slope in before) was positively correlated with obstructive apnea, central apnea, cortical arousal, non-REM sleep stage while negatively correlated with OAHI (all $p < 0.05$). Higher slope changes during respiratory events were impacted by lower OSA severity, apnea-related respiratory events, non-REM sleep stage and respiratory events with cortical arousal. The mixed-effects model showed that Δslopeafter-

before (slope in after minus slope in before) was positively correlated with obstructive apnea, central apnea, non-REM sleep stage while negatively correlated with cortical arousal (all $p < 0.05$). Lower slope changes during respiratory events were impacted by apnea-related respiratory events, non-REM sleep stage and respiratory events without cortical arousal.

Conclusions

Our study reveals that respiratory events trigger suppression of electroencephalographic (EEG) activity, which is detectable particularly in children with mild obstructive sleep apnea (OSA). These findings may help to explain the neurocognitive deficits observed in children with mild OSA.

Presenting Author
Daniel Kopala-Sibley (Canada)

Authors
Daniel Kopala-Sibley (Canada); Anna Mackinnon (Canada); Athina Spiropoulos (Canada); Norah Vincent (Canada); Lianne Tomfohr-Madsen (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P47

Title
A Randomized Control Trial of Web-based CBT-I to Improve Sleep to Prevent Depression in Adolescents at High Risk for Depression

Introduction
Among adolescents, depression is the leading cause of global burden of disability, and unfortunately one of the leading causes of death due to suicide. Children with a parental history of depression are 3-7 times more likely to develop MDD relative to children with no such family history. Approximately 75% of MDD onsets occur in adolescence. We (Soltani et al., 2023) have shown that elevated insomnia symptoms increases risk for first lifetime onsets of both depressive and anxiety disorders in youth with a family history of depression. Cognitive Behavioral Therapy for Insomnia (CBT-I) is the gold-standard treatment for insomnia and has been associated with reductions in depressive symptoms. However, no studies to our knowledge have examined if Cognitive Behavioral Therapy for Insomnia (CBT-I) improves insomnia in high-risk youth in order to potentially prevent first lifetime onsets of depressive and anxiety disorders. The present trial therefore examines if brief, web-based CBT-I reduces insomnia symptoms and improves subthreshold depressive symptoms in adolescents with sleep problems who are at high familial risk for depressive disorders.

Materials and Methods
This trial uses a two-arm, single blinded, parallel group randomized controlled design (N =50). Treatment group participants completed web-based CBT-I comprised of six adolescent sessions and one parent session. Control group participants received a psychoeducational pamphlet about sleep hygiene. Insomnia severity (Insomnia Severity Index) and depressive symptoms (Youth Self Report) were assessed at three time points (baseline, immediately post-treatment, and three months post-treatment). Clinically significant internalizing disorders will be assessed via the Mini International Neuropsychiatric Interview.

Results

While this study is ongoing, initial results from 8 youth (four per group) showed that within the CBT-I group, there was a 34.28% reduction in insomnia symptoms and a 47% reduction in depressive symptoms after 6 weeks. Effect sizes in the CBT-I group around were large (Cohen's d = .96 and 1.14 for change in insomnia and depressive symptoms, respectively). Within the control group, there was a 14.65% reduction in insomnia symptoms and a 14.28% reduction in depressive symptoms. As such, CBT-I was roughly two-to-three times as effective as a control psychoeducation pamphlet in lowering insomnia as well as depressive symptoms.

Conclusions

Web-based CBT-I is a non-invasive, economical, and easily administered intervention targeting sleep which is a potentially modifiable risk factor for the onset of depression. Trial results will inform larger trials to examine if sleep interventions can prevent healthy, but high-risk, adolescents with sleep problems from developing internalizing disorders.

Acknowledgements

Research was funded by a pilot grant from the Hotchkiss Brain Institute and the Mathison Centre for Mental Health Research and Education, University of Calgary, Calgary, Alberta, Canada.

Presenting Author
David Hui (Norway)

Authors
David Hui (Norway); Harriet Akre (Norway)

Presentation Day and Board Number
Friday, April 10, 2026 | P48

Title
Paediatric sleep recording in hospital and at home using PSG/PG and AI – Are there any differences and advantages?

Introduction
Paediatric sleep recording can be challenging to implement in an appropriate manner. It often results in children and their parents having to be hospitalized. This costs the family and the society significant resources. In addition, conventional sleep recording equipment can be challenging to attach to the child, and the equipment can fall off during the night. In this way, there is a need for simpler sleep recording equipment, preferably equipment that the child and their parents can use at home, so that sleep can be examined over time.

Materials and Methods
We have used polysomnography (PSG) and polygraphy (PG), and compared it with artificial intelligence (AI) to see if AI can help simplifying the sleep recording and the analysis after sleep recording. The sleep recording equipment has been used at home and in hospitals. Therefore, we have studied healthy and sick children. We have also developed an algorithm that uses machine learning to recognize patterns, so that pathology during sleep can be detected. In collaboration with the Department of Informatics at the University of Oslo, the ENT Department at Lovisenberg Hospital and the Pulmonary Department at Oslo University Hospital, we are developing a software to analyze sleep recording efficiently and correctly. In addition, the children and their parents have answered a validated questionnaire about quality of life. In this way, we have studied the relationship between sleep and quality of life.

Results
Nearly 200 sick children have been studied and just under 30 healthy children, recruited from health stations, have been studied and followed over time. Validated questionnaires about quality of life have been answered. Preliminary data have been analyzed and points to that AI can be used to simplify sleep recording and analysis after sleep recording. There is also a connection between sleep and quality of life. However, we need to analyze the data further.

Conclusions

AI can be used in connection with paediatric sleep recording. AI shows promising trends and could simplify sleep recording and analysis of sleep data. However, more research is needed.

Presenting Author
Diana Grigsby-Toussaint (United States)

Authors
Diana Grigsby (United States)

Presentation Day and Board Number
Friday, April 10, 2026 | P49

Title
Green Space, Sleep and IL-1B among low-income pregnant women

Introduction
Green space has been associated with salutary birth outcomes, such as lower risk for preterm birth, low birth weight, fatigue or stress. Few studies, however, have used objective measures of stress to explore the relationship between green space exposure and the antenatal and prenatal periods.

Materials and Methods
Women participating in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) at the Rhode Island Department of Health (RIDOH) were recruited for the study. Women are eligible for WIC if they are pregnant, breastfeeding or postpartum (up to six months after the birth of a baby), with incomes that are at or below 187% of the US poverty level. Inclusion criteria included: a) aged 18 years of age or older, b) within the first 24 weeks of pregnancy, and c) expecting a singleton birth, d) English or Spanish speaking.

Exclusion criteria included pregnant women: a) on bed rest, b) <18 years of age, c) >24 weeks pregnant, and d) non-singleton pregnancy.

Participants were recruited using flyers and texts that were distributed by RIDOH. Participants wore a GPS unit and Phillips Actiwatch for one week at two time points, <24 weeks and >24 weeks during pregnancy to capture sleep, physical activity, and green space exposure. Anthropometric measures, saliva and buccal swabs, the Epworth Sleepiness Scale, Pittsburgh Sleep Quality Index, Berlin Questionnaire, SF-36 and the WHO Wellbeing scale were also collected during the same time periods. Correlations between levels of IL1-beta, green space exposure, sleep and birth outcomes were explored.

Results
Thirty women were recruited for this pilot study. Approximately 36.7% of the sample identified as White, and 13.4% identified as Black or African American.

One-third of the participants had a household income of less than $5,000 (36.7%). Paired t-tests showed that women had significantly lower sleep quality in the third trimester of pregnancy based on the PSQI (M:11.91, SD:3.18, p=0.012). Park proximity (<300m) was associated with lower IL-1β in the third trimester of pregnancy (rho =0.512, p=0.009). Moreover, higher IL-1β in the third trimester of pregnancy was associated with lower gestational age at birth (rho=-.927, p=.003), and less sleep (rho=-.41, p=0.047). There is a significant correlation between average tree canopy (tree30_300m) and average sleep efficiency for second trimester (rho=0.427, p=0.042). As the average tree canopy increased, the average sleep efficiency for the second trimester increased."

Conclusions

Using objective measures of green space and a biomarker of stress, we found that green space confers benefits for pregnant women and newborns. However, a larger sample size and more robust analyses are needed to confirm the results of this pilot study.

Acknowledgements

We thank the women for taking the time to participate in our study, and the Rhode Island Department of Public Health for recruiting them and providing advice for study implementation. This work was supported by a seed award from the Division of Research at Brown University, and the Population

Studies and Training Center at Brown University through the generosity of the Eunice Kennedy Shriver National Institute of Child Health and Human Development (P2C HD041020)."

Presenting Author
Dorit Aschmann-Mühlhans (Germany)

Authors
Dorit Aschmann-Mühlhans (Germany)

Presentation Day and Board Number
Friday, April 10, 2026 | P50

Title
DISE – and What Next? Diagnostic and Therapeutic Considerations in Children With Persistent Obstructive Sleep Apnea

Introduction
Pediatric obstructive sleep apnea (OSA) affects up to 4% of otherwise healthy children and is even more prevalent in those with underlying medical or genetic conditions such as Down syndrome. Adenotonsillectomy is the first-line treatment; however, approximately 20% of children—and a larger proportion with comorbidities—continue to experience persistent or recurrent OSA. Recent analyses by Ersu et al., Ehsan et al., and the IPOG consensus highlight the multifactorial origins of persistent OSA and reinforce the need for individualized diagnostic pathways.

Materials and Methods
Three pediatric patients with persistent OSA or CPAP failure underwent drug-induced sleep endoscopy (DISE) as part of a comprehensive clinical assessment. DISE was performed using the 2023 international classification framework evaluating seven upper-airway regions. Each case was analyzed with respect to obstruction pattern, potential etiology, and implications for targeted therapy

Results
DISE revealed different kinds of obstruction in all three patients, uncovering anatomical contributors not evident during routine clinical assessment in two cases. Despite the enhanced dynamic visualization DISE provides, the underlying pathophysiology remained complex and required careful multidisciplinary interpretation. In each case, treatment planning extended beyond ENT surgery and CPAP, consistent with expert recommendations from Ersu, Ehsan, and the IPOG consensus regarding multimodal management of persistent pediatric OSA.

Conclusions
DISE is a valuable diagnostic tool for children with persistent OSA or CPAP intolerance,

especially when applied using the standardized 2023 IPOG classification. However, as emphasized in recent literature, DISE findings must be integrated with individualized clinical judgment and multidisciplinary expertise. These cases highlight the practical need for collaborative decision-making and personalized treatment pathways beyond conventional surgical and CPAP-based approaches.

Acknowledgements

The authors gratefully acknowledge the dedicated team of pediatric sleep specialists and the associate ENT surgeon whose clinical expertise and collaboration were essential in the evaluation and management of the presented cases.

Presenting Author
Eimear O'Connell (Ireland)

Authors
Eimear O'Connell (Ireland); Holly Jones (Ireland); Sheila Javadpour (Ireland)

Presentation Day and Board Number
Friday, April 10, 2026 | P51

Title
Infant Sleep Duration and Risk of Overweight/Obesity in Childhood: Findings from the Growing Up in Ireland Cohort

Introduction
Short sleep duration has been associated with overweight and obesity (OWOB) in childhood and adolescence. However, whether sleep in infancy is associated with childhood OWOB remains unclear. This study aims to examine the association between insufficient sleep in nine-month-old infants with concurrent and later OWOB.

Materials and Methods
This was a secondary analysis of the Growing Up in Ireland (GUI) National Longitudinal Study of Children. Caregivers were interviewed when the child was nine months (n=11,134), three years (n=9,793), five years(n=9,001) and nine years (n=8,032) of age. Sleep duration, among other variables was reported by parents at nine months of age.

Results
Using the WHO growth standard, the prevalence of OWOB at nine months of age was 11%. On cross-sectional analysis, no association between insufficient total sleep and OWOB was found. A protective effect of >15 hours sleep on OWOB at three years of age was observed. (p 0.048)

Conclusions
No clear association between sleep in infancy with concurrent or later overweight/obesity was found in this large nationally representative cohort study.

Acknowledgements
We would like to acknowledge the extensive work done by Growing Up in Ireland research team and thank all families and children who participated in this study.

Presenting Author
Ekjyot Saini (United States)

Authors
Ekjyot Saini (United States); Shambavi Thakur (United States); Maristella Lucchini (United States); Natalie Barnett (United States)

Presentation Day and Board Number
Friday, April 10, 2026 | P52

Title
Child Sleep, Family Context and the Transition to Schooling

Introduction
Sleep during early childhood is essential for healthy cognitive, emotional, and behavioral development. Preschool-aged children (3–5 years) are recommended to obtain 10–13 hours of daily sleep, however, the transition to structured settings such as preschool may disrupt sleep. The start of schooling is a formative milestone for children where alterations in family functioning, schedules, and behavior may be needed to effectively help the child adapt to their new environment and its expectations. Guided by developmental ecological models, which emphasizes the influence of family-level processes, this study examines how the home environment impacts child's sleep and adjustment during this transition period.

Materials and Methods
Families were recruited via email outreach through the Nanit user database in the United States to obtain sleep data via autovideosomnography. Survey data were collected from 445 families, with 106 providing both survey and autovideosomnography data for analysis. Parents retrospectively reported on family chaos and sleep before and after preschool entry. Sleep data were available up to 29 days (M = 15 days) and included total sleep time (TST), sleep efficiency, wake episodes, bedtime, and waketime. Family chaos was assessed using the Confusion, Hubbub, and Order Scale (15 items; higher scores indicate greater chaos). Covariates included child age, sex, and family income. A series of initial multilevel models were fit.

Results
Variability in all sleep parameters was significant, indicating individual differences in adaptation. However, chaos was not a significant predictor of sleep outcomes in conditional models. Moderation analyses examined whether family income interacted with family chaos and significant interaction emerged to predict children's bedtime ($\beta = 0.021$, $p = .02$). Simple

slopes analyses revealed that, for families with higher income, greater chaos was associated with later bedtimes and for families with lower income (slope $\beta = 0.034$, $p = .05$), the association between chaos and bedtime was nonsignificant.

Conclusions

The transition to preschool is a unique developmental period that can cause upheaval in children's sleep. The use of autovideosomnography sleep data across multiple days indicates significant variability in multiple sleep parameters in children. Although family chaos did not directly predict sleep outcomes, the significant moderation by household income suggests that the socioeconomic context shapes how families manage bedtime. Specifically, higher-income families exhibited later bedtimes when household chaos was high, whereas the link between chaos and sleep was nonsignificant for lower-income families. These initial findings underscore the importance of considering family-level factors when examining children's sleep. Additional research will explore other family characteristics to better identify processes that can inform targeted interventions for improving sleep and managing the transition to schooling.

Presenting Author
Elise McLeod (Australia)

Authors
Elise McLeodGillian Nixon (Australia); Nicole Verginis (Australia); Rosemary Horne (Australia); Margot Davey (Australia); Lauren Nisbet (Australia)

Presentation Day and Board Number
Friday, April 10, 2026 | P65

Title
WatchPAT as a diagnostic device for obstructive sleep apnoea in children and adolescents

Introduction
Obstructive sleep apnoea (OSA) is a common condition in children with significant long-term morbidity if untreated. Polysomnography (PSG) is the gold-standard diagnostic modality for OSA however is limited by cost, labour and time requirements, accessibility and tolerability. Therefore, abbreviated testing modalities are needed. The WatchPAT-300 (WP300, Itamar Medical) is a home sleep assessment device validated in adults that measures peripheral arterial tonometry (PAT) using a one-size finger probe with an inflatable cushion. The few studies that have assessed its accuracy in the paediatric population have reported conflicting results. We aimed to assess the tolerance, validity and diagnostic accuracy of WP300 for assessing OSA severity in children >8y compared to simultaneous PSG.

Materials and Methods
This was a prospective study of children aged 8-18 years undergoing diagnostic in-laboratory PSG for suspected OSA, with simultaneous WP300. Children were excluded if they were using medications that might affect the PAT signal, if the WP300 finger probe did not fit securely, or if they had significant co-morbidities or a cardiac pacemaker in situ. PSG data were manually scored using standard clinical paediatric criteria, while WP300 studies were scored automatically using proprietary software. As the WP300 does not quantify signal loss, good quality data was defined as participants having: PSG-total sleep time >4hours, WP300 technically valid sleep time >4hours, and <40minutes discrepancy between WP300 and PSG recording time. The obstructive apnoea-hypopnoea index (OAHI) was used to classify OSA (OAHI≥1/h) and moderate-severe OSA (OAHI≥5/h).

Results
Data were collected in 100 patients, with median (IQR) age 12.2y (10.2, 13.6), body mass index z-score 1.1 (0.1, 1.8), 42% female. All participants tolerated PSG; WP300 was aborted in 6

participants prior to sleep onset, mainly due to discomfort from the finger probe. Good quality WP300 recording was achieved in 79 participants (79%), which was similar for children <12y (n=40, 82%) and those ≥12y (n=39, 76%); p>0.05). Included and excluded participants did not differ based on age, sex, body mass index or PSG parameters (p>0.05). WP300 significantly over-estimated the OAHI compared to PSG (median (IQR) 3.9 (2.2, 7.3) compared to 1.9 (0.5, 5.0) respectively, p<0.001), with a similar pattern seen in both age cohorts. For diagnosis of OSA (OAHI≥1), WP300 yielded high false positive rates (specificity 14%), with almost all children (95%) classified as having OSA compared to 64% by PSG. Conversely, there were no false negatives (negative predictive value 100%). WP300 performed better for moderate-severe OSA (OAHI≥5) with specificity 75%, sensitivity 95%, positive predictive value 75% and negative predictive value 98%.

Conclusions

Four out of five children tolerated the WP300 and recorded good quality data. In this clinically referred population, WP300 over-diagnosed OSA and over-estimated OSA severity. In a clinical population, it is helpful for ruling out moderate-severe OSA but less accurate for ruling it in. The high sensitivity may make it helpful in screening populations at low risk. Further research to characterise the physiological basis of WP300 events and develop a paediatric-specific algorithm for analysing WP300 studies may help improve its diagnostic accuracy in children.

Presenting Author
Elise McLeod (Australia)

Authors
Gillian M Nixon (Australia); Nicole C Verginis (Australia); Rosemary SC Horne (Australia); Margot J Davey (Australia); Lauren Nisbet (Australia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P07

Title
Understanding the automated scoring of WatchPAT respiratory events

Introduction
Diagnosis of obstructive sleep apnoea (OSA) is typically made through polysomnography (PSG) which is limited by accessibility, cost and patient tolerance. The WatchPAT-300 (WP300, Itamar Medical) home sleep assessment device has potential to overcome these limitations. Paediatric validation studies have reached differing conclusions regarding agreement between PSG and WP300 respiratory indices, including the obstructive apnoea-hypopnea index (OAHI), used to diagnose and classify OSA severity. We aimed to directly compare individual respiratory events automatically detected by the WP300 with events manually identified on PSG, to better understand this technology in children.

Materials and Methods
Children aged 8-18 years undergoing diagnostic in-laboratory PSG for suspected OSA underwent simultaneous WP300. PSG were manually scored using standard clinical paediatric criteria. WP300 studies were analysed automatically using proprietary software (zzzPAT® version 5.3.82.5). Included participants had PSG and WP300 valid sleep time >4 hours and

Results
100 children were studied with 21 children excluded due to poor WP300 tolerance and/or insufficient recording time, resulting in 79 included in the analysis (median age 12.2y; 42% female). On PSG result, 28 (35%) had PS, 31 (39%) mild OSA and 20 (25%) MS OSA. 9498 WP300 respiratory events were analysed: 55% sub-criterion ‘Resp. event’, 38% ‘A/H obstructive’, 2% ‘A/H central’ and 5% ‘A/H unclassified’ events. Overall, 60% of WP300 events did not correspond with any PSG event, 27.5% correlated with a PSG respiratory event, 11.5% with a spontaneous/external arousal and 2.5% with a PLM and/or PLM arousal. At higher OSA severity, WP300 respiratory events were more likely to correspond to a PSG respiratory event (PS 7.5%, mild 12.7%, MS 52.6%; p

Conclusions

In this novel analysis directly comparing raw WP300 and PSG event data, we demonstrated that in children, the WP300 automated algorithm more accurately detects respiratory events in MS OSA. In children with PS and mild OSA, a high proportion of WP300 respiratory events did not correspond with any PSG event; in these cases, it is not clear what the device is recognising to score an event. It is important for clinicians and researchers to understand the limitations of this device and consider manual editing before interpreting results. In future, revision of the algorithm by the manufacturer may enable more accurate WP300 event detection in paediatric patients.

Presenting Author
Elizabeth keys (Canada)

Authors
Jelena Komanchuk (Canada); Kelly Romero-Acosta (Canada); Jillian Dawn Law (Canada); Delphine Collin-Vézina (Canada); Jane Jun (Canada); Elizabeth Keys (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P79

Title
Global Knowledge on the Sleep Health of Children in Foster and Kinship Care: Findings from a Systematic Review

Introduction
Children are often placed in foster and kinship care (i.e., cared for by a non-relative and relative, respectively) due to maltreatment concerns, such as neglect and abuse, in their family of origin. There is a robust association between childhood maltreatment and sleep behaviors (e.g., nightmares, quality), but previous reviews have not focused on children in foster and kinship care. Given high rates of maltreatment concerns and that foster and kinship placements have the potential to affect sleep, a systematic review is needed on children's sleep health (e.g., duration, quality, timing) in foster and kinship care.

Materials and Methods
We conducted a systematic review, informed by the Joanna Briggs Institute methodology for prevalence and incidence, to synthesize knowledge on the sleep health characteristics of children and adolescents (aged 0-18 years) in foster and kinship care. We searched seven electronic databases in May 2024 (updated March 2025) with three main concepts: children, sleep, and foster or kinship care. Primary quantitative studies with sleep health (e.g., duration, efficiency, quality) data for children and adolescents in foster and kinship care were included.

Results
Twenty-one studies (within twenty-five publications) met the review criteria. Research was primarily conducted in the United States (k=12/21), followed by China (k=2), Norway (k=2), Canada (k=2), Australia (k=1), France (k=1), and Scotland (k=1). Samples were primarily comprised (> 50% of the sample) of children in foster, rather than kinship, care (k=14). Most evaluations focused on sleep duration (k=9/21), quality/sleep problems (k=8), efficiency (k=7), and parasomnias (k=7). Children and adolescents in foster and kinship care commonly

experienced sleep efficiency difficulties (e.g., falling asleep, staying asleep), general sleep problems, and parasomnias (e.g., nightmares, bedwetting). Not only did children frequently require caregiver support to sleep, but sleep prescriptions/supplements were also commonly reported. Sleep duration findings were mixed and may connect to sleep timing. No significant differences were noted between foster/kinship and community samples in insomnia, but insomnia (k=2) comprised the least investigated outcome.

Conclusions

While research on the sleep health of children in foster and kinship care is limited, overall findings suggest that children and adolescents in foster and kinship care experience difficulties spanning multiple sleep health domains. Further research is needed to clarify sleep health characteristics of children and adolescents in foster and kinship care worldwide, and to guide initiatives aimed at promoting sleep health. To support the development of effective initiatives, foster/kinship caregivers, healthcare professionals, program developers, and policymakers need knowledge of the sleep health characteristics and inequities experienced by children in foster/kinship care.

Acknowledgements

This work was supported by a SSHRC Postdoctoral Fellowship award (756-2025-0047), Michael Smith Health Research BC trainee award (RT-2024-03825), UBCO Postdoctoral Fellowship award (GR030439), and SSHRC Explore Funding (GR029089). We are grateful to the Canadian Sleep Research Consortium and the Consortium on Child Youth and Trauma for ongoing mentorship and support.

Presenting Author
Elizabeth Keys (Canada)

Authors
Jelena Komanchuk (Canada); Delphine Collin-Vézina (Canada); Hannah Finkelstein (Canada); Elizabeth Keys (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P80

Title
“You need the support, but you’re worried your kids gonna get taken away”: Foster and kinship caregivers’ perspectives on sleep in care

Introduction
Sleep is essential for health and development, yet little is known about the sleep experiences of families in foster (non-relative) and kinship (relative) care. Research has shown associations between biological caregiver and children’s sleep, but has not accounted for the complexities (e.g., experiences of trauma) in foster and kinship care. Given the importance of sleep to overall health and development, knowledge is needed on caregiver and children’s sleep in foster and kinship care. Therefore, we aimed to explore foster and kinship caregivers’ perceptions of their own sleep and the sleep of 0–5-year-old children in their care.

Materials and Methods
In collaboration with an advisory panel (comprised of a Syilx Elder, two foster caregivers, and a social worker employed in child welfare) and nine foster/kinship community organizations in British Columbia, we purposively recruited 18 foster and six kinship caregivers of children aged 0-5 years. From May to August 2024, we conducted semi-structured interviews over Zoom. Data analysis is ongoing, utilizing interpretive description with reflexive thematic analysis.

Results
Caregivers’ ages ranged from 30-63 years (M = 47.88), with 2-29 years of foster and kinship caregiving experience. Most participants identified as women (88%), and most identified as white (71%), as well as First Nations, Métis, Filipino, and mixed identities. Preliminary findings indicate that caregivers perceive sleep disturbances as common for children in foster and kinship care, and consider sleep to be connected to trauma, attachment, prenatal exposures, neurodiversity, medical needs, and transitions between homes. Foster and kinship caregivers described reciprocal connections between children’s sleep, caregivers’ sleep, and overall

family functioning. Caregivers also expressed concerns about sleep challenges and placement stability, including fears that asking for support from case workers might lead to the child being removed from their care. Findings from the completed analysis will be presented at the conference.

Conclusions

This study contributes novel insights into sleep within foster and kinship families in Canada, an area which is understudied. Foster and kinship caregivers expressed that sleep disturbances are common and complex, and highlighted potential detrimental impacts, including placement disruptions, for families. Preliminary findings highlight a need for trauma-informed sleep supports for foster and kinship families. Policymakers and individuals working with foster and kinship families (e.g., social workers, nurses, physicians, psychologists) need knowledge of foster and kinship family sleep experiences to support sleep health and overall family functioning.

Acknowledgements

We extend our sincere appreciation to the foster and kinship caregivers who shared their time and entrusted us with their experiences and perspectives. We are grateful for the guidance of the advisory panel, including a Syilx Elder, foster caregivers, and a social worker who works with foster and kinship families. We also thank the foster and kinship community organizations across British Columbia whose partnership made this work possible.

Presenting Author
Erja Rusanen (Finland)

Authors
Erja Rusanen (Finland); Outi Saarenpää-Heikkilä (Finland); Juulia Paavonen (Finland)

Presentation Day and Board Number
Friday, April 10, 2026 | P54

Title
Are maternal bonding problems associated with child sleep problems at 5 years of age?

Introduction
A child's ability to sleep well is crucial for healthy psycho-social development. According to the results of a previous longitudinal study from the CHILD-SLEEP cohort, mother-child bonding problems were associated with infant sleep difficulties at 8 and 24 months of age. This study aimed to investigate whether this association persists when the child reaches 5 years of age, using the same longitudinal sample.

Materials and Methods
The sample is nationally representative of Finland, consisting of 704 Finnish-speaking mothers and their 704 children. Maternal bonding was assessed at 8 months postpartum using the Postpartum Bonding Questionnaire (PBQ) as the independent variable. Child sleep problems at 5 years were measured using the Disorders of Initiating and Maintaining Sleep (DIMS) scale, focusing on its sub-components: severity of night awakenings and problems falling asleep, as the dependent variables. Numerous covariates, measured either prenatally or postnatally at 3 or 8 months, or at 5 years, were included in the analyses.

Results
Spearman's correlation analyses and linear regression analyses revealed that maternal bonding difficulties at 8 months postpartum were significantly associated with child sleep problems at 5 years. These associations remained significant after controlling for multiple factors and excluding children with illnesses. The effects disappeared when maternal depression was added to the model. However, the results partially persisted when maternal stress was added to the model, suggesting that bonding problems may mediate the effects of maternal stress on child sleep problems at 5 years. Alternatively, maternal stress may mediate the effects of bonding problems on child sleep problems at 5 years.

Conclusions
The findings emphasize the importance of the primary caregiver and maternal psycho-social

factors in understanding infant sleep problems. Further research is needed to explore the complex interplay between bonding and maternal psycho-social factors.

Presenting Author
Eunjin Bae (South Korea)

Authors
Eunjin Bae (South Korea); Sungkyoung Shin (South Korea); Goun Jo (South Korea); Jamie Zeitzer (United States); Rachel Manber (United States); Sooyeon Suh (South Korea)

Presentation Day and Board Number
Friday, April 10, 2026 | P55

Title
Impact of Perinatal Cognitive Behavioral Therapy for Insomnia (CBT-I) on Objective and Subjective Infant Sleep: A Secondary Analysis of a Randomized Controlled Trial

Introduction
Cognitive-behavioral therapy for insomnia (CBT-I) effectively improves sleep in perinatal women; however, it remains unclear if these benefits extend to infant sleep outcomes. Therefore, the present study assessed infant sleep using both objective (actigraphy) and subjective (Brief Infant Sleep Questionnaire; BISQ) measures in a group of offspring of women who participated in CBT-I as part of a larger randomized controlled trial (RCT).

Materials and Methods
This secondary analysis included 83 pregnant women with insomnia disorder who were assigned at baseline to either CBT-I (n = 51) or an active control (n = 32) and provided data for at least one assessment point. The CBT-I group received information about infant sleep development and recommendations for optimizing infant sleep development, and the control group received APA guidelines for infant sleep. The average baseline maternal age in the analytic sample of maternal–infant dyads was 33.45 (± 5.06) years. Objective infant sleep was assessed using actigraphy (Actiwatch ACT2) at 8, 18, and 30 weeks postpartum, with sleep measured continuously for seven consecutive days at each assessment; total sleep time (TST) and wake after sleep onset (WASO) were derived. Maternal-reported infant sleep was assessed using the BISQ at 18 and 30 weeks postpartum, including nocturnal sleep duration, daytime sleep duration, and the day–night sleep ratio. Linear mixed models (LMM) were conducted to account for within-infant correlations due to repeated measurements and between-infant variability. Models tested fixed effects of time and group-by-time interaction to evaluate whether longitudinal changes in infant sleep differed by group.

Results
At baseline, infant total sleep time based on actigraphy was 11H 38M (± 1H 6M) and wake after

sleep onset was 53.23M (± 28.43M). There was a significant increase in average total sleep time and decrease in wake after sleep onset based on actigraphy data over time. At 18 weeks, 23.1% (n = 6) of the control group and 32.4% (n = 12) of mothers in the CBT-I group reported their infant had “a sleep problem”. There were no significant differences for objective or subjective infant sleep outcomes between the CBT-I and control groups (p-values > .05).

Conclusions

The observed expected developmental improvements in sleep consolidation overall did not suggest differential changes by group. Thus, the light infant-sleep focused component that was added to CBT-I is insufficient for superior infant sleep outcomes relative to current standard guidelines by pediatricians.

Acknowledgements

This study was funded by National Institutes of Health grant R01 NR013662.

Presenting Author
Evan Toleman (United Kingdom)

Authors
Evan Toleman (United Kingdom); Catherine Hill (United Kingdom); Jessica Bate (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P57

Title
Survey of UK paediatric oncology centres current practices with respect to promoting optimal sleep for children with cancer

Introduction
Sleep is generally worse in a hospital environment than at home due to multiple factors including excessive noise, light, and staff disturbances. We aimed to assess the extent to which UK paediatric oncology centres provide sleep friendly care based on a wide range of criteria, identify barriers and opportunities where centres fall short, and find out if centres have been engaged in targeted quality improvement, and what the outcome has been.

Materials and Methods
An electronic advertisement was constructed and distributed for an anonymous 10-minute Qualtrics survey and a 30-minute interview over Teams to members of the UK Children's Cancer and Leukaemia Group (CCLG), an organisation of NHS professionals who work on paediatric oncology wards. The survey ranked staff agreement on whether their hospital offers sleep friendly care, and the interview explored details of quality improvement projects to improve sleep.

Results
28 survey responses were collected from 13 hospitals, and 3 interviews were conducted. Staff agreed that promoting sleep is an important part of care, but no aspects of sleep friendly care were uniformly offered. Interviews identified that few centres have engaged in targeted quality improvement projects. Where projects were identified, they were unidimensional and lacked a measured outcome. Multiple barriers were also identified, including a lack of standards, staff adherence, and a lack of staff education regarding sleep.

Conclusions
This data highlights the need for national guidance regarding sleep, as while promoting sleep is viewed as important, in practice facilitating sleep in hospitals meets many barriers. In the

future, multi-modal approaches are needed to address sleep in hospitals, including the introduction of evidence-based national sleep standards and staff education on how to effectively promote sleep.

Acknowledgements

I would like to thank my supervisors Professor Catherine Hill and Dr Jessica Bate from the University of Southampton Medical School for their continued advice and support throughout this project as well as developing the original premise.

Presenting Author
Evelyne Touchette (Canada)

Authors
Evelyne Touchette (Canada); Gabrielle Fréchette-BoilardAmandine Rey (France); Stéphanie Mazza (France); Marie-Hélène Pennestri (Canada); Geneviève Forest (France); Graham Reid (Canada); Sabine PlancoulaineAmélie Petitclerc (Cada)

Presentation Day and Board Number
Friday, April 10, 2026 | P58

Title
Developmental daytime and nighttime sleep trajectories from ages 2.5 to 5, the factors shaping them and their influence on receptive language at age 5

Introduction
Between ages 2 and 5, most children are transitioning from a biphasic to a monophasic sleep pattern, with considerable interindividual variability shaped by children's and familial factors. To our knowledge, no study has yet examined whether the speed of this transition, and the factors that shape it, may influence the development of receptive language.

Materials and Methods
Data come from the Quebec Longitudinal Study of Child Development (QLSCD, 1997/1998 - 2003). Mothers reported on children's and familial factors at 5 months (e.g., child's sex, breastfeeding, maternal immigrant status, educational, household, family type), at 17 months (e.g., maternal depression, parental behaviors at bedtime) and at 29 months (e.g., childcare arrangements). Daytime and nighttime sleep duration were reported through maternal reports at 2.5, 3.5, 4, and 5 years of age (n=1912). Multivariate developmental sleep trajectories (daytime and nighttime sleep duration) were conducted in MPlus. A multinomial logistic regression model was used to examine factors associated with developmental sleep trajectories (n=1871). A multiple linear regression was used to test the influence of developmental sleep trajectories on receptive language at 5 years of age (n=944).

Results
Three developmental sleep trajectories from 2.5 to 5 years of age were found: 1) rapid (n=173, 9.0%), 2) typical (n=849, 44.4%) and 3) gradual (n=890, 46.5%). Compared to preschoolers who early attended to certified childhood childcare, preschoolers who never or only occasionally attended childcare, as well as those in family-based childcare with an unrelated caregiver, had substantially higher odds of following a rapid sleep trajectory rather than the

typical one. However, compared to preschoolers who early attended to certified childhood childcare, preschoolers who never or only occasionally attended childcare presented lower odds of belonging to the gradual sleep trajectory rather than the typical one. In contrast, having an immigrant mother was significantly associated with higher odds of following the gradual trajectory rather than the typical one. Moreover, children in the gradual sleep trajectory (-0.10, P=0.004), having an immigrant mother (-0.31, P

Conclusions

Being in a gradual sleep developmental trajectory, having a maternal immigrant status and receiving care outside certified childhood education settings negatively influence receptive language at age 5. Future studies should replicate these findings in a recent and large epidemiological cohort, particularly one that includes children born after the COVID 19 pandemic.

Acknowledgements

This work was supported by the Programme Samuel-de-Champlain (FRQ, Canada and France Council, France) [grant to Evelyne Touchette and Amandine Rey, principal investigators] and the CIHR Operating Grant: Data Analysis Using Existing Canadian Databases and Cohorts [grant to Evelyne Touchette and Marie-Hélène Pennestri, principal investigators, 192822]. We acknowledge the considerable contribution of Bei Feng and Hélène Paradis for their statistical expertise.

Presenting Author
Faith Orchard (United Kingdom)

Authors
Faith Orchard (United Kingdom); Jessica L Hamilton (United States); Jas SarnaMelissa J. Dreier (United States); Aijia Yao (United States); Maria E. Loades (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P59

Title
Project Sleep: A brief, online single session intervention targeting sleep to improve mental health in young people

Introduction
Poor sleep has been linked to a range of negative physical and mental health outcomes in young people. Although effective treatments exist, issues with accessibility and engagement remain. Project Sleep is a Single Session Intervention (SSI) developed based on behavioural principles of evidence-based treatments and structured according to SSI principles. Developed with young people in the US and UK, participants receive sleep psychoeducation, engage in a personalized activity focused on behavioural principles for their sleep problem (e.g., insomnia, sleep irregularity), and develop an action plan. The current study is an international collaboration of a pre-post programme evaluation to test the preliminary effectiveness of Project Sleep for motivation to improve sleep.

Materials and Methods
A total of 1,027 young people (ages 13-25 years) who self-identify as having sleep problems participated in Project Sleep. Participants were recruited from the community in the US and UK and through participant registry pools at the universities. The mean age was 18.79 years, 79% identified as girls, and 46% had minoritized racial/ethnic identities. Participants completed a program feedback scale (1-5), as well as their motivation, control, and readiness to improve sleep rated pre-post SSI (on 0-10 scale; 10 = most).

Results
Most participants reported 6.79 hours of sleep per night (SD=1.48) and most (80%) reported clinical insomnia symptoms (ISI=11.73; 8-23). Participants reported their biggest sleep challenge as “difficulty falling or staying asleep” (41%), “trouble keeping a regular sleep schedule” (40%), or “Not feeling ready for sleep at bedtime” (19%). On average, Project Sleep took 18.19 minutes (SD=11.89). Participants agreed the program was easy (M=4.69), helpful

(M=4.39), and would recommend it to a friend (M = 4.30). Participants' ratings increased pre-to-post SSI across all domains, with most notable gains for perceived importance of improving sleep (pre=7.48; post=8.73) and control over improving sleep (pre=4.97; post=6.88).

Conclusions

Project Sleep demonstrated initial acceptability and effectiveness for enhancing knowledge about and motivation to improve sleep. Project Sleep has the potential to improve scalability of access to effective, evidence-based strategies to improve sleep and health among young people.

Presenting Author
Fatma Guezguez (Tunisia)

Authors
Fatma Guezguez (Tunisia); Amani Sayhi (Tunisia); Balsam Barkous (Tunisia); Inès Ghannouchi (Tunisia); Khansa Derbel (Tunisia); Jihène Sahli (Tunisia); Sonia Rouatbi (Tunisia)

Presentation Day and Board Number
Friday, April 10, 2026 | P60

Title
Artificial light exposure and sleep outcomes in medical students

Introduction
The increasing reliance on digital devices among university students raises concerns regarding artificial light exposure and its potential impact on sleep quality (SQ). Medical students, due to their intensive academic workload, may be particularly vulnerable.

Objective:

To explore the relationship between artificial light exposure and sleep quality among medical students."

Materials and Methods
A cross-sectional study was conducted among medical students at the Faculty of Medicine of Sousse. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), and artificial light exposure was evaluated using a short form of the Light Exposure Behavior Assessment (LEBA). Sleep duration and timing during the week and weekend were self-reported to calculate social jet lag (SJL; midpoint shift >2 hours) and sleep deprivation (SD; sleep duration discrepancy >2 hours). Statistical analyses were performed with SPSS, significance threshold $p < 0.05$.

Results
Poor sleep quality (PSQI >5) was observed in 56.5% of students, SD in 30.9%, and SJL in 27.8%. Students with poor sleep quality had higher LEBA Factor 3 scores, reflecting more frequent phone and screen use in bed (11.6 ± 2.3 vs 10.2 ± 2.5, $p = 0.005$), and lower engagement in regular physical activity (19.7% vs 38.3%, $p = 0.032$). Sleep-deprived students consumed more caffeinated beverages (73.3% vs 41.8%, $p = 0.004$) and had higher BMI (23.3 ± 3.9 vs 21.8 ± 2.6, $p = 0.028$), although LEBA scores did not differ significantly. Students with SJL

also had higher LEBA Factor 3 scores (12.0 ± 2.2 vs 10.7 ± 2.5, p = 0.019). Age, sex, and other LEBA factors were not significantly associated with sleep outcomes.

Conclusions

Poor sleep quality, sleep deprivation, and social jet lag are common among medical students and are strongly associated with evening phone and screen use. These findings highlight the importance of promoting healthier digital habits and light exposure strategies to improve sleep health in this population.

Presenting Author
Fatma Guezguez (Tunisia)

Authors
Fatma Guezguez (Tunisia); Rania Hizem (Tunisia); Inès Ghannouchi (Tunisia); Amani Sayhi (Tunisia); Jihène Sahli (Tunisia); Sonia Rouatbi (Tunisia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P08

Title
Sleep quality and associated factors in Asthmatic children: a cross-sectional study

Introduction
Pediatric asthma is frequently associated with nocturnal symptoms and sleep disturbances. These disturbances negatively affect the quality of life of both children and their families. Despite its clinical relevance, sleep quality in asthmatic children remains insufficiently explored.

Objective: To assess sleep quality in asthmatic children and to identify associated factors."

Materials and Methods
A cross-sectional study was conducted in the Department of Physiology and Functional Explorations, Farhat Hached Hospital of Sousse, Tunisia. Asthmatic children aged 4–16 years were enrolled (n=230) and completed with their parents a questionnaire including asthma characteristics, the Childhood Asthma Control Test (C-ACT), sleep quality using a translated version of the Sleep Disturbance Scale for Children (SDSC). Statistical analyses were performed using SPSS, with a significance threshold set at $p < 0.05$.

Results
Poor sleep quality (SDSC > 45) was found in 76.1% of children. Children with poor sleep quality were more likely to have poorly controlled asthma (76.6% vs 41.8%, $p < 0.001$), a history of hospitalization for severe asthma (65.7% vs 41.8%, $p = 0.002$), and more than two exacerbations during the previous year (25.1% vs 5.5%, $p = 0.002$). Child age, sex, and asthma duration were not significantly associated with sleep quality.

Conclusions
Sleep disturbances are highly prevalent among asthmatic children and are strongly associated with poor asthma control and disease severity. These findings highlight the

importance of systematic assessment of sleep quality in pediatric asthma management and the need for targeted interventions to improve both asthma control and sleep health.

Acknowledgements

Artificial intelligence tools (ChatGPT, OpenAI) were used for language editing. The authors reviewed and verified all content and are responsible for the accuracy of the abstract.

Presenting Author
Fiona Hudson (Australia)

Authors
Fiona Hudson (Australia); George Normone (Australia); Moya Vandeleur (Australia); Karen Waters (Australia); Jasneek Chawla (Australia)

Presentation Day and Board Number
Friday, April 10, 2026 | P61

Title
CPAP use in children with Neurodisability: Clinical and Parent-Reported Insights

Introduction
Continuous Positive Airway Pressure (CPAP) is an established treatment for paediatric obstructive sleep apnoea (OSA), a condition associated with significant morbidity and impact on daytime functioning and family wellbeing (1). Children with neurodisability experience disproportionately high rates of sleep disturbance, with multifactorial and complex presentations requiring multidisciplinary care (2). Certain neurodevelopmental conditions, such as children with Down syndrome, have a particularly high burden of OSA and frequently require further/additional treatment, including CPAP, even after adenotonsillectomy (3). Although CPAP is effective, real-world adherence remains challenging for many families, with behavioural, developmental, sensory, and environmental factors influencing success (4). Clinical management guidelines highlight the need for individualised, family-centered, and behaviourally informed approaches to support CPAP initiation and sustained use (5). This study aims to describe the parent-reported characteristics, comorbidities, surgical history, weight profiles, and experiences of children who have used CPAP from within a large Australian cohort of children included in a wider cross-sectional survey of sleep.

Materials and Methods
This study presents a secondary descriptive analysis of survey data from a large MRFF-funded study; Early Sleep Interventions to Improve Outcomes in Children with Neurodisability. Parents of children aged 0–18 years completed an online REDCap questionnaire capturing demographic information, neurodevelopmental and medical diagnoses, sleep behaviours, ENT and respiratory history, and CPAP/NIV use. A descriptive analysis was conducted on the subset of children whose parents reported their child had used CPAP (N=49). Variables examined included medication, duration/pattern of use, parent-perceived benefit, neurodevelopmental and medical comorbidities, weight, ENT surgeries, and respiratory conditions.

Results

Within a sample of 300 children, 49 children (16.3%; n = 29 male) were reported to use CPAP. Biological age ranged from 0.74 to 26.96 years. Most children (81.6%) were taking prescription medication at the time of the study. When grouping the CPAP subset into study defined primary diagnosis categories, 65.3% had a genetic syndrome (n = 32), 18.4% had a neurological condition (n = 9), 6.1% had ASD/ADHD (n = 3), and 10.2% of children fell into the 'other' category (n = 5).

Across the sample, 49.0% had undergone tonsillectomy and 51.0% had undergone adenoidectomy. A respiratory condition was reported in 58.3%, and a cardiac condition in 26.5%. 26.5% of the children were reported to be overweight.

Usage duration varied markedly, with several families reporting CPAP use for only 1–2 nights. Parent-reported benefit was high, with 80.9% indicating CPAP was helpful for their child. Qualitative responses identified common barriers to usage such as mask intolerance, sensory sensitivity, behavioural resistance, and difficulty maintaining nightly routines.

Conclusions

Children with neurodisability are disproportionately affected by sleep-disordered breathing and are more likely to require CPAP. This study identified that children with genetic or neurological diagnostic groups are most vulnerable. ENT surgery, respiratory conditions, and varied weight profiles were common, highlighting the substantial medical needs of this population. Despite wide variability in CPAP usage parents frequently reported that CPAP was helpful for their child. Descriptions of barriers, including sensory sensitivities, mask intolerance, behavioural resistance, and difficulty maintaining routines, emphasize the challenges families face when establishing CPAP. These findings reinforce the importance of developmentally tailored, behavioural, and family-centered strategies to support CPAP initiation and sustained use in children with neurodisability and complex medical conditions.

Acknowledgements

This work forms part of the Early Sleep Interventions to Improve Outcomes in Children with Neurodisability program, funded by the Australian Medical Research Future Fund (MRFF). We thank the participating families for contributing their time and insights, and acknowledge the Kids Sleep Research Group at the Queensland Children's Hospital and The University of Queensland, The Royal Children's Hospital Melbourne, Murdoch Children's Research Institute, Children's Hospital at Westmead & The University of Sydney.

Presenting Author
Fiona Hudson (Australia)

Authors
Fiona Hudson (Australia); Mark Anderson (Australia); Anne Bernard (Australia); Moya Vandeleur (Australia); Karen Waters (Australia); Jasneek Chawla (Australia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P09

Title
Pharmacotherapeutic Patterns and Sleep-Relevant Medication Burden in Australian Children with Neurodevelopmental Disorders: A Prospective Cohort Study

Introduction
Sleep disturbances are highly prevalent in children with neurodevelopmental disorders (ND), arising from complex interactions between biological, behavioural, and medical factors. Many pharmacological treatments prescribed for ND can positively or negatively influence sleep, yet medication use in this population is poorly characterised, and no clinical guidelines exist to support sleep-focused prescribing. This study aimed to quantify medication use, including pharmacotherapies intended to promote sleep and those with known sleep-disrupting effects, in a large Australian cohort of children with ND.

Materials and Methods
A prospective cross-sectional survey was conducted across Australia, recruiting through three tertiary paediatric hospitals and via national community organizations. Parents and carers of children 2–18 years with a clinician-diagnosed ND completed an online questionnaire capturing demographics, ND diagnosis, and current prescription and over-the-counter (OTC) medications. All free-text medication entries were standardised to generic drug names and categorised by pharmacological class. Descriptive analyses summarized medication prevalence and prescribing frequency, polypharmacy rates, and sleep-relevant drug categories. Diagnostic groups were aggregated into four categories: ASD/ADHD group, genetic syndromes, neurological conditions and other ND.

Results
A prospective cross-sectional survey was conducted across Australia, recruiting through three tertiary paediatric hospitals and via national community organizations. Parents and carers of children 2–18 years with a clinician-diagnosed ND completed an online questionnaire capturing demographics, ND diagnosis, and current prescription and over-the-counter (OTC)

medications. All free-text medication entries were standardised to generic drug names and categorised by pharmacological class. Descriptive analyses summarized medication prevalence and prescribing frequency, polypharmacy rates, and sleep-relevant drug categories. Diagnostic groups were aggregated into four categories: ASD/ADHD group, genetic syndromes, neurological conditions and other ND.

Conclusions

Children with ND experience a substantial and diverse pharmacotherapeutic burden, including both sleep-promoting and sleep-disrupting agents. The high rates of polypharmacy, coupled with the frequent use of medications known to affect sleep architecture, underscore the importance of structured medication review when addressing sleep concerns in this population. These findings highlight an urgent need for targeted prescribing guidelines to support clinicians in managing sleep disturbances in children with ND and to reduce avoidable medication-related contributors to sleep dysfunction.

Acknowledgements

This work forms part of the Early Sleep Interventions to Improve Outcomes in Children with Neurodisability program, funded by the Australian Medical Research Future Fund (MRFF). We thank the participating families for contributing their time and insights, and acknowledge the Kids Sleep Research Group at the Queensland Children's Hospital and The University of Queensland, The Royal Children's Hospital Melbourne, Murdoch Children's Research Institute, Children's Hospital at Westmead & The University of Sydney.

Presenting Author
Gabrielle Fréchette-Boilard (Canada)

Authors
Gabrielle Fréchette-Boilard (Canada); Amélie Petitclerc (Canada); Sylvana Côté (Canada); Graham Ried (Canada); Michel Boivin (Canada); Richard E. Tremblay (Canada); Jacques Montplaisir (Canada); Marie-Hélène Pennestri (Canada); Evelyne Touchette (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P62

Title
Daytime and nighttime sleep interactions at 5 and 17 months and their association with post pandemic contextual factors

Introduction
Most studies have focused on correlates associated with nocturnal sleep in early infancy. Emerging literature shows that daytime sleep is also an important component of young children's 24 hour sleep patterns. Recent contextual factors, such as maternal immigrant status and screen time exposure, seem important to investigate in relation to developmental 24-hour sleep patterns after the post COVID context. However, the influence of these contextual factors associated with the development of daytime and nighttime sleep has not yet been investigated. The objective of this study is to describe young children's sleep patterns at 5 and 17 months and to explore the contextual factors associated with daytime and nighttime interaction.

Materials and Methods
Data were collected from maternal reports for 3 873 infants at 5 months (T1) and 17 months (T2). Participants were part of the Quebec Longitudinal Study of Child Development, 2nd cohort (QLSCD 2, 2021 to 2023), which assessed a wide range of variables, including daytime and nighttime sleep, maternal immigrant status, mean weekly screen time exposure, and other correlates. Cross lagged regression analyses were conducted with MPlus, including correlated for child sex, age at daycare entry, mean weekly screen time exposure, room occupancy rate, maternal age, maternal education, maternal immigrant status, household income, and maternal depression score. Only results with a p-value of <0.01 and below were reported.

Results
Daytime sleep at 5 months predicted nighttime sleep at 17 months (B = 0.07 [0.02–4.56], p <

0.000), whereas nighttime sleep at 5 months was not associated with daytime sleep at 17 months (B = –0.01 [0.02– –0.75], p < 0.456). At 17 months, daytime sleep was positively associated with child's sex (B = 0.04 [0.02–2.83], p < 0.005), maternal education (B = 0.11 [0.02–5.87], p < 0.000), and maternal immigrant status (B = 0.06 [0.02–3.11], p < 0.002). Conversely, daytime sleep at 17 months was negatively associated with age at daycare entry (B = –0.06 [0.02– –3.44], p < 0.001), indicating that children who entered daycare younger sleep more during the day. At 17 months, nighttime sleep was negatively associated with mean weekly screen time exposure (B = –0.09 [0.02– –5.03], p < 0.000), maternal age (B = –0.09 [0.02– –5.20], p < 0.000), maternal immigrant status (B = –0.15 [0.02– –8.60], p < 0.000), and household income (B = –0.05 [0.02– –3.15], p < 0.002).

Conclusions

The results indicate that daytime sleep determine nighttime sleep patterns in infancy, rather than the reverse. Children with a greater screen time exposure, having a maternal immigrant status and living in a lower household income are key contextual correlates which influence children's nighttime at 17 months.

Acknowledgements

This work was supported by the CIHR Operating Grant: Data Analysis Using Existing Canadian Databases and Cohorts [grant to Evelyne Touchette and Marie Hélène Pennestri, principal investigators, 192822]. We acknowledge the valuable contributions of Bei Feng and Hélène Paradis for their statistical expertise.

Presenting Author
Georgie Agar (United Kingdom)

Authors
Amajuoritse Watts (United Kingdom); Emma McIntyre (United Kingdom); Ciara Borrington (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P63

Title
Clinicians' Perspectives on Sleep Management for Children with Neurodevelopmental Conditions: Insights from a UK Urban Setting

Introduction
Sleep is objectively poor in children with neurodevelopmental conditions (NDCs), with deleterious impacts on child behaviour and mood, and caregiver stress. As with typically developing children, sleep hygiene strategies, and behavioural sleep interventions (which ask caregivers to change the way they respond to their child overnight, for example by not entering their child's bedroom until an agreed checking time) can be effective. However, these can be difficult for caregivers to implement without appropriate support. Unfortunately, UK NHS services are often struggling to provide this support, due to extensive waiting lists and the lack of sleep specific training and expertise for clinicians. Clinic appointments are short with lots to cover, so discussions of sleep can be extremely brief. Understanding current NHS provision, and the perspectives of clinicians working with children with NDCs is critical to identifying key areas in which sleep support could be beneficial.

Therefore, this study aimed to identify the sleep management services currently offered to children with NDCs, in a particular urban UK setting (West Midlands). We also explored clinicians' perspectives on the barriers and facilitators to effectively and adequately providing sleep support services for children with NDCs.

Materials and Methods
Twelve clinicians (8 paediatricians, 2 occupational therapists and 2 specialist nurses) participated in online or in person one-to-one interviews or focus groups using a bespoke discussion guide. Participants were predominantly female (n= 9), and all but one were White British, despite working in a very diverse region of the UK (West Midlands). Clinicians had a

combined 170 years of professional experience working with children with NDCs (individual experience ranged from 1-33 years). The data were analysed using reflexive thematic analysis.

Results

The following themes were generated: The Modus-Operandi, Fragmented Service, Core Behavioural Approach, Adjunctive Aids, Parent Burden & Family Dynamic, Burden of a Clinician, Constraints of Practice and The Pie in the Sky. The themes reflected the current approach to managing sleep interventions by clinicians, limitations experienced in providing the services including time, capacity and commissioning and the complexity of working with families of children with NDCs. Clinicians recommended community based multi-disciplinary teams as the best approach to improving sleep in children with NDCs but acknowledged that without a commissioned pathway and adequate capacity, the system leans too heavily on exhausted caregivers.

Conclusions

This is the first known study to explore clinicians' perspectives on sleep interventions for children with NDCs. Barriers and limitations that impede effective delivery in a UK urban setting were explored; however future studies are needed to explore perspectives of clinicians working in more rural areas as well as from a broader range of specialisms (such as neurology and clinical psychology). The findings highlight the need for a commissioned multi-disciplinary sleep service for children with NDCs, as well as tailored interventions for this population.

Acknowledgements

Thank you to all the clinicians who took part for generously sharing their time and perspectives.

Presenting Author
Gillian Nixon (Australia)

Authors
Gillian Nixon (Australia); Deborah Anderson (Australia); Anneke Grobler (Australia); Chris Selman (Australia); Alice Baker (Australia); Amanda Griffiths (Australia); Moya Vandeleur (Australia); Gideon Pinczower (Australia); Joanne Rimmer (Australia)

Presentation Day and Board Number
Friday, April 10, 2026 | P64

Title
Nasal sprays for children with Sleep-Disordered Breathing: The MIST+ Trial

Introduction
Symptoms of obstructive sleep-disordered breathing (oSDB) are common in childhood and associated with significant comorbidity. Surgical treatment with adenotonsillectomy is first-line treatment but medical treatments show potential to improve symptoms and reduce the need for surgery. The MIST trial demonstrated that intranasal saline and corticosteroid both result in resolution of oSDB symptoms in about 40% of children. The current MIST+ trial was a randomized, double-blind, placebo-controlled trial evaluating the efficacy of 6 weeks of intranasal steroid (INS) compared to saline in children with oSDB with persistent oSDB symptoms after a 6-week intranasal saline run-in.

Materials and Methods
Children aged 3-12 years were recruited from specialist clinic waitlists at two sites. All received once daily intranasal saline for 6 weeks (run-in). Those with persisting symptoms (SDB score ≥ -1) were randomized to either once daily intranasal mometasone furoate 50ug (INS) or continued saline for a further 6 weeks. The primary outcome was symptom resolution (score < -1) 6 weeks after randomization. Subgroup analyses were conducted for the primary outcome by age (>6 vs ≤6 years), tonsillar hypertrophy, symptoms of allergic rhinitis in the preceding 12 months, weight status, and baseline severity of oSDB symptoms using the SDB score, Pediatric Sleep Questionnaire, OSA-18 and OSA-5. Secondary outcomes in the randomized participants included: resolution of symptoms at 12 weeks from the end of the run-in phase; the effect on sleep, behaviour, emotions, and quality of life at 6 weeks. Secondary outcomes in the non-randomized participants (i.e. those responsive to the run-in phase) included: resolution of symptoms at 6 and 12 weeks from the end of the run-in phase. Analyses were adjusted for site and baseline measures.

Results

150 children (38% female; mean age 6.2, SD 2.3 years) were recruited. Of 139 children who completed the run-in phase, 41 (29.5%) had symptom resolution after saline run-in. Symptoms remained resolved at the 6 and 12 week follow-up visits in 29/38 (76.3%, 95% CI 59.8, 87.5) and 24/37 (64.9%, 95% CI 47.9, 78.8) respectively. Among 93 randomized (47 INS; 46 saline), symptom resolution occurred in 35.6% (95% CI 22.9, 50.6%) and 36.4% of the INS and saline group respectively, with no evidence for a clinically significant difference between groups (risk difference -0.9%, 95%CI -20.7%, 19.0%, p=0.93). Sustained efficacy in terms of resolution of symptoms at 12 weeks from the start of the treatment phase was less for the INS group (9/40, 20.0%, 95% CI 10.6 to 34.4) than the saline group (15/42, 35.7%, 95% CI 22.7 to 51.3) (risk difference -17.6%, 95% CI -35.7 to 0.5). No group differences were found in secondary outcomes. Sub-group analysis did not reveal a group more or less likely to respond to medical treatment.

Conclusions

Six weeks of intranasal saline resolves oSDB symptoms in nearly one-third of children. An additional 6-week course of INS or saline leads to resolution in another third (total resolution around 50%), with no added benefit from INS. Intranasal saline is an effective short-term first-line treatment for oSDB prior to consideration of polysomnography or surgical intervention.

Acknowledgements

This study was supported by the Garnett Passe and Rodney Williams Memorial Foundation.

Additional authors:

Elizabeth Rose

Catherine Simpson

Andrew Davidson

Senior author: Kirsten Perrett

Presenting Author
Gillian Nixon (Australia)

Authors
Liam Beaumont (Australia); Lauren C Nisbet (Australia); Nicole Verginis (Australia); Margot J Davey (Australia); Gillian M Nixon (Australia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P10

Title
SleepImage® as a tool for investigating sleep in children at high risk of comorbid sleep disorders

Introduction
Children with neurodevelopmental disorders (NDD) have high rates of both respiratory and non-respiratory sleep disorders and experience greater challenges tolerating polysomnography (PSG). SleepImage (SI) (MyCardio, LLC, Denver, USA) is a FDA-approved home sleep assessment device, worn as a ring that assesses both obstructive sleep apnoea (OSA) and sleep quality. This study aimed to assess SI tolerability, compare respiratory and non-respiratory outcomes to PSG, assess the diagnostic accuracy for OSA, and assess the correlation of the SI Sleep Quality Index (SQI) with validated sleep questionnaires and PSG outcomes.

Materials and Methods
Children with NDD aged 3-18 years undergoing in-laboratory clinical diagnostic PSG between April and August 2025 were recruited to wear SI concurrently. Exclusion criteria included: involvement in another sleep research project; children taking regular heart rhythm medication such as beta blockers, or with known cardiac conduction abnormalities or a cardiac pacemaker; and parents with insufficient English proficiency to understand questionnaires and research, or parent anticipating major difficulty tolerating PSG. There was a limit of one SI test per night due to device availability. The SI system measures continuous peripheral arterial tone, heart and respiratory rate variability, oximetry and actigraphy and through automated analysis employing cardiopulmonary coupling, the software generates standardised reports accessible via the online portal. Sleep Disturbance Scale for Children questionnaires (SDSC) were completed by caregivers on the night of PSG. A total sleep time ≥4 hours on SI and PSG and SI signal quality >80% defined acceptable recordings for comparative analysis.

Results

48 children were recruited, with 20 meeting the standard for comparative analysis (median age 10.6y, 50% female). Not including SI recordings affected by technical factors, patient SI tolerance was 70%. The median (IQR) Obstructive Apnoea Hypopnoea Index (OAHI) on PSG was 1.8 (0.8-6.6)/h compared to the comparable index (sAHIOBS) on SI of 4.3 (2.8-6.4)/h (p=0.31), with SI overestimating severity of OSA at milder severities but under-estimating it in severe OSA. SI had a negative predictive value for moderate to severe OSA of 100% but was less accurate at confirming moderate to severe OSA with a positive predictive value of 56%. Abnormal SQI scores were concordant with elevated SDSC total scores in 71% of children. SQI demonstrated significant negative correlation with arousal index (r=-0.45, p=0.046) and was moderately correlated with total sleep time (r=0.4, p=0.09), wake after sleep onset (r=-0.44, p=0.05), and sleep efficiency (r=0.39, p=0.09), but these did not quite reach statistical significance. SQI was not significantly correlated with OAHI (r=-0.26, p=0.27).

Conclusions

SI is tolerated in most children with NDD, is useful for ruling out moderate-severe OSA, but less accurate at confirming this diagnosis. SQI correlated with non-respiratory parameters on PSG, suggesting that SI may be helpful to quantify non-OSA causes of impaired sleep quality. Larger prospective validation and adaptations of the ring and analysis algorithm may increase SI's utility as a tool to investigate sleep problems in the NDD paediatric population.

Acknowledgements

The authors thank the participants and their families for taking part in the study, and the staff at the Melbourne Children's Sleep Centre, Monash Children's Hospital, Monash Health, Melbourne, Australia for their help conducting the project. The SI devices and access to the online results portal was donated by SleepImage and Bird Healthcare, but neither company had access to study data, and the study was analysed and interpreted and the manuscript written by the authors independently.

Presenting Author
Gillian Nixon (Australia)

Authors
Lauren C Nisbet (Australia); Rebecca Mihai (Australia); Nicole Verginis (Australia); Kirsten Ellis (Australia); Margot J Davey (Australia); Gillian M Nixon (Australia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P11

Title
APAP in paediatric obstructive sleep apnoea: Is titration polysomnography necessary?

Introduction
Auto-titrating positive airway pressure (APAP) is commonly used in CPAP initiation protocols in adults, with remote data monitoring used to monitor adherence and assess pressure requirements. We have previously demonstrated that APAP is a safe and effective means of initiating CPAP in children, and results in improved quality of life without adverse impacts on caregiver strain. In the current study, we aimed to 1) detail initial APAP settings; 2) compare adherence in children who required pressure changes over the first month of treatment to those who didn't; and 3) determine if titration polysomnography (PSG) resulted in further changes to APAP treatment.

Materials and Methods
Retrospective review of children commencing APAP in a single paediatric sleep centre from 2020-2025. APAP use was monitored remotely using a modem and proprietary web-based software. Data collected included: demographic data and symptom burden using validated questionnaires, initial APAP prescription, changes to settings in the first 4 weeks, adherence in weeks 3-4 of treatment and recommended treatment changes after subsequent attended PSG performed on APAP (titration PSG). Data are presented as median and interquartile range, with statistical tests for non-parametric data used to compare groups.

Results
143 children commenced APAP (29%F; age 13.2 (9.8,16)y; 80% overweight/obese; 48% other comorbid condition). Median initial minimum pressure was 4 (4,4) cmH2O and maximum 10 (10,12) cmH2O. 59 (41%) required 1 or more pressure changes in the first month of treatment and this group had better adherence in weeks 3-4 [93 (77,100)% vs 57 (7,93)% nights used ($p<.001$); hours of use on days used 7.4 (4.5,8.8)h vs 4.2 (0.7,7.2)h ($p<.001$)]. 83 (59%) underwent titration PSG, with the decision to proceed to PSG based on clinical judgement.

PSG resulted in a recommended prescription change in 50 (60%). 14 (17%) had a change to both the minimum and maximum APAP pressures, whilst change to the minimum pressure only occurred as frequently as change to maximum pressure only (both 17; 20%), and two patients ceased treatment. Although the median change to APAP maximum pressure after titration PSG was 0cmH2O (0,+2), changes ranged from -2cmH2O to +8cmH2O. The change to minimum APAP pressure after titration was 0cmH2O (0,+2), ranging from 0 to +5cmH2O. Prescription changes during the first month did not affect the need for settings changes following titration PSG (p=0.56), nor did age, adherence measures, device apnoea-hypopnoea index, or symptom score.

Conclusions

Examination of remote data resulted in APAP prescription changes in the first month of treatment in 41% of children. Change to APAP settings over the first month of treatment was associated with better adherence, but the direction of this relationship is unclear. Settings changes were recommended after titration PSG in 60%, with the need for change not predicted by changes in treatment settings in the first month or other clinical variables. This highlights an ongoing role for titration in a subgroup of patients; further research is required to better define those who benefit most from titration PSG.

Acknowledgements

This study was supported by a research grant from the Resmed Foundation.

Presenting Author
Gioia Giusti (Italy)

Authors
Gioia Giusti (Italy); Marina Apicella (Italy); Marco Veneruso (Italy); Ramona Cordani (Italy); Antonella Iadarola (Italy); Giulia Silvestrini (Italy); Antonella Barbieri (Italy); Valentina Marazzotta (Italy); Lino Noboli (Italy)

Presentation Day and Board Number
Friday, April 10, 2026 | P66

Title
Could sleep quality be influenced by interception abilities? Interoceptive training in adolescents with mood disorder, eating disorder and healthy control.

Introduction
Interoception is the experience of the physiological condition of the body, its alterations are associated with psychiatric disorders. There may be a vicious cycle where interoceptive dysfunction can cause errors in the sleep-wake cycle. Interoceptive dimensions can be modified through specific training which has shown effects in psychiatric symptoms in adults. Few studies are available about interoception and sleep, especially in childhood. In this on-going study we investigated whether interoceptive training based on Heart Beat Counting task (HBC) in adolescents inpatients with Eating Disorders (ED) and Mood Disorders with suicidality (SI) can improve sleep quality.

Materials and Methods
Thirty participants aged 13-17 years were recruited during hospitalisation in IRCCS-Gaslini Neuropsychiatry department (12 ED and 18 SI). Six adolescent volunteers were recruited as healthy controls (CTR). Interoceptive Accuracy has been measured by HBC, Interoceptive Sensitivity-Awareness has been measured by Multisensory Assessment of Interoceptive Awareness (MAIA) and Body Perception Questionnaire (BPQ). Subjective sleep quality has been measured by Pittsburgh Sleep Quality Index (PSQI).

Patients have been evaluated before (T0) and after intensive interoceptive training (T1) lasting 5-10 days (three sessions/day)."

Results
At the baseline both SI and DCA showed significantly different scores in BPQ BOA/SUP (SI-

CTR: z=3.37; p_fdr=0.00109; DCA-CTR: z=4.12; p_fdr=0.000111) and PSQI tot (SI-CTR: z=3.06; p_fdr=0.00642; DCA-CTR: z=2.24; p_fdr=0.0377) compared with controls. The dimension of MAIA_self regulation was lower in SI than in CTR (z=-2.09; p=0.0359) and DCA(z=2.27; p=0.0227). Negative correlation was observed between the number of training sessions and changes in mean HBC error between T1 and T0 (ΔHBC T1–T0; r = –0.483; p = 0.0146) indicating an improvement in interoceptive accuracy. Changes in total PSQI score between T1 and T0 is negatively correlated with the number of training sessions (r = –0.506; p = 0.0227), indicating an improvement in subjective sleep quality.

Conclusions

Inpatients with mood disorder and DCA showed alterations in both sleep quality and interception compared with healthy controls. A higher number of training sessions is associated with an increase in interoceptive accuracy. The results suggest a significant relationship between interoceptive training and the improvement of subjective sleep quality. In particular greater adherence to training is associated with a reduction in PSQI score. These findings highlight the importance of interoception as a particularly effective target for promoting the restoration of perception of sleep quality.

Presenting Author
Giulia Silvestrini (Italy)

Authors
Giulia Silvestrini (Italy); Marco Veneruso (Italy); Ramona Cordani (Italy); Sergio Garbarino (Italy); Ottavia Guglielmi (Italy); Lino Nobili (Italy)

Presentation Day and Board Number
Friday, April 10, 2026 | P67

Title
Sleep Health in Adolescents: The Role of Stress, Digital Media, and Lifestyle Factors in a Large Population-Based Study

Introduction
Sleep is essential for adolescents' cognitive, emotional, and physical well-being. However, many adolescents experience poor sleep quality and daytime sleepiness, often linked to risky behaviors and stress. Few studies have investigated these associations in Italian adolescents.

Materials and Methods
We conducted a cross-sectional study (SAVe YOUTH project) in all public high schools in Savona, Italy (March–May 2018). A total of 2,280 students (mean age 17 years) completed validated questionnaires assessing sleep quality (PSQI), excessive daytime sleepiness (ESS), and chronotype (MEQ-CA), as well as sociodemographic factors, screen time, substance use, and perceived stress. Associations were analyzed using logistic and ordinal regression models

Results
Poor sleep quality affected 52% of students; 21.6% reported excessive daytime sleepiness; 32.2% were classified as evening chronotype. Poor sleep was associated with male gender (OR=1.36; p=0.005), higher screen time (OR=1.21; p<0.001), phone use at night (OR=1.40; p=0.002), smoking more than 5 cigarettes/day (OR=2.04; p<0.001), moderate to severe school stress (OR up to 2.80; p<0.001) and family-related stress (OR up to 3.40; p<0.001). Positive peer relationships were protective (OR=0.42; p=0.005). Excessive daytime sleepiness was linked to higher screen time (OR=1.14; p=0.004), alcohol use (OR=1.36–1.64; p<0.05), and attending lyceums versus technical schools (OR=0.70; p<0.001). Mild school stress was protective for excessive daytime sleepiness (OR=0.57; p=0.049). Evening chronotype was associated with increased screen time (OR=1.19; p<0.001), smoking 1–5 cigarettes/day (OR=1.33; p=0.032) or more than 5 (OR=1.82; p<0.001), isolated (OR=1.36; p=0.008) or repeated (OR=1.80; p<0.001)

episodes of drunkenness, and mild (OR=1.26; p=0.049), moderate (OR=1.37; p=0.013), or severe (OR=1.40; p=0.024) family-related stress.

Conclusions

Sleep disturbances are highly prevalent and closely linked to modifiable lifestyle and psychosocial factors. Digital habits, stress, and substance use play a key role in adolescent sleep health. These results highlight the need for multi-level prevention strategies that address both individual behaviors and the broader school and family context. School- and family-based interventions promoting healthy digital media use, stress management, and sleep hygiene are crucial to improve sleep outcomes and overall well-being in adolescents.

Presenting Author
Giulia Silvestrini (Italy)

Authors
Giulia Silvestrini (Italy); Marco Veneruso (Italy); Ramona Cordani (Italy); Sergio Garbarino (Italy); Ottavia Guglielmi (Italy); Lino Nobili (Italy)

Presentation Day and Board Number
Saturday, April 11, 2026 | P12

Title
Sleep Health in Adolescents: The Role of Stress, Digital Media, and Lifestyle Factors in a Large Population-Based Study

Introduction
Sleep is essential for adolescents' cognitive, emotional, and physical well-being. However, many adolescents experience poor sleep quality and daytime sleepiness, often linked to risky behaviors and stress. Few studies have investigated these associations in Italian adolescents.

Materials and Methods
We conducted a cross-sectional study (SAVe YOUTH project) in all public high schools in Savona, Italy (March–May 2018). A total of 2,280 students (mean age 17 years) completed validated questionnaires assessing sleep quality (PSQI), excessive daytime sleepiness (ESS), and chronotype (MEQ-CA), as well as sociodemographic factors, screen time, substance use, and perceived stress. Associations were analyzed using logistic and ordinal regression models

Results
Poor sleep quality affected 52% of students; 21.6% reported excessive daytime sleepiness; 32.2% were classified as evening chronotype. Poor sleep was associated with male gender (OR=1.36; p=0.005), higher screen time (OR=1.21; p<0.001), phone use at night (OR=1.40; p=0.002), smoking more than 5 cigarettes/day (OR=2.04; p<0.001), moderate to severe school stress (OR up to 2.80; p<0.001) and family-related stress (OR up to 3.40; p<0.001). Positive peer relationships were protective (OR=0.42; p=0.005). Excessive daytime sleepiness was linked to higher screen time (OR=1.14; p=0.004), alcohol use (OR=1.36–1.64; p<0.05), and attending lyceums versus technical schools (OR=0.70; p<0.001). Mild school stress was protective for excessive daytime sleepiness (OR=0.57; p=0.049). Evening chronotype was associated with increased screen time (OR=1.19; p<0.001), smoking 1–5 cigarettes/day (OR=1.33; p=0.032) or more than 5 (OR=1.82; p<0.001), isolated (OR=1.36; p=0.008) or repeated (OR=1.80; p<0.001)

episodes of drunkenness, and mild (OR=1.26; p=0.049), moderate (OR=1.37; p=0.013), or severe (OR=1.40; p=0.024) family-related stress.

Conclusions

Sleep disturbances are highly prevalent and closely linked to modifiable lifestyle and psychosocial factors. Digital habits, stress, and substance use play a key role in adolescent sleep health. These results highlight the need for multi-level prevention strategies that address both individual behaviors and the broader school and family context. School- and family-based interventions promoting healthy digital media use, stress management, and sleep hygiene are crucial to improve sleep outcomes and overall well-being in adolescents.

Presenting Author
Grace Langdon (Australia)

Authors
Grace Langdon (Australia); Kartik Iyer (Australia); Laetitia Coles (Australia); Jasneek Chawla (Australia)

Presentation Day and Board Number
Friday, April 10, 2026 | P68

Title
Systematic Gaps in Sleep Care for Children with Neurodisability: Insights from Caregivers

Introduction
Neurodisability (ND) is an umbrella term that describes a group of congenital or acquired long-term conditions that are attributed to impairment of the brain and/or neuromuscular system. ND includes conditions such as ASD, ADHD, Down syndrome, acquired brain injuries and Cerebral Palsy. Families of children with neurodisability (ND) often face complex and persistent challenges in supporting their child's development and wellbeing. One highly prevalent factor for children with ND is sleep, with up to 80% of children with ND experiencing some form of sleep problem, whether it be respiratory or behavioural in nature. Despite this high prevalence sleep concerns are not routinely raised or addressed in clinical appointments, leaving many families to endure years of significant sleep disruption. As a result, caregivers feel that they need to advocate for their child's sleep to be treated, highlighting the importance of understanding their experiences and ensuring their perspectives inform future care pathways.

Materials and Methods
Three separate focus groups were held with groups of six for a total of 18 caregivers of children with ND. These discussions formed part of a broader study on child brain and sleep health monitoring and aimed at exploring the lived experiences of families of children with ND gaining their perspectives on navigating healthcare systems. Reflexive thematic analysis (TA) was utilised to analyse qualitative data from the focus groups. The six steps of TA were performed, including familiarisation of the data, generation of codes, searching for the themes, reviewing the themes, defining themes and report writing.

Results
Three overarching themes were identified: 1) The pervasive impact of sleep disturbances on the whole family. Caregivers described navigating the broad physical, emotional, and

functional consequences of poor sleep—not only for the child with ND but also for parents and siblings. These challenges were compounded in families where more than one child experienced sleep difficulties; 2) Systemic gaps in healthcare support for sleep. Families reported limited support from non-sleep specialists, fragmented care pathways, and inconsistent screening for sleep issues. Many caregivers noted their concerns were overlooked or minimised, and even when support was offered, it did not always lead to meaningful improvements in their child's sleep; 3) A lack of coordinated support across healthcare and educational settings. Caregivers described receiving little practical or sustained assistance to manage their child's sleep, prompting them to self-initiate trials with alternative strategies sourced independently. This iterative, often exhausting process frequently occurred at the expense of caregiver wellbeing and contributed to feelings of isolation and desperation.

Conclusions

Children with ND typically require multispeciality care; however, sleep is not consistently recognised or managed within routine clinical interactions by non-sleep specialists. Consequently, families must cope with the long-term impacts of unresolved sleep problems, both for their child and themselves. This leads caregivers to repeatedly experiment with various interventions in the absence of coordinated guidance or support. The findings underscore the urgent need for integrated, proactive approaches to identify and treat sleep problems in children with ND and to ensure families feel heard, supported, and empowered throughout the care process.

Presenting Author
Hannah Vennard (United Kingdom)

Authors
Hannah Vennard (United Kingdom); Hazel Evans (United Kingdom); Martin Samuels (United Kingdom); Jay James (United Kingdom); David Young (United Kingdom); Elise Buchan (United Kingdom); Rebecca Lennon (United Kingdom); Thomas Wilkinson (United Kingdom); Ross Langley (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P69

Title
Using a Combination of Oximetry Measures to Predict OSA in Children with Down Syndrome

Introduction
Children with Down Syndrome (DS) are at in increased risk of sleep disordered breathing (SDB). Obstructive sleep apnoea (OSA) is the most common form of SDB in children with DS. Recent evidence suggests poor predictive potential of using single nocturnal pulse oximetry (NPO) indices to predict OSA in children with DS. The aim of this study is to investigate whether a combined model using NPO indices and demographic data improves the predictive potential of NPO for OSA in children with DS.

Materials and Methods
A retrospective study compared simultaneous cardio-respiratory polygraphy (CRP) and NPO data of children, 2-16 years, at two UK tertiary sleep centres (University Hospital Southampton and The Royal Hospital for Children Glasgow) between May 2016 and May 2024. OSA was defined as OAHI ≥5/hour. We randomly assigned 80% of the cohort for training and 20% for validation. Univariate and multivariate receiver operating characteristic (ROC) curve analysis was undertaken. Logistic regression models were evaluated using the NPO and demographic data, for predicting OSA.

Results
We included 310 children in the training dataset 42.3% female, median age 5.84 years, 25.5% had an ≥OAHI 5/hour. An area under the ROC curve (AUC) was highest using a combination of age, sex, mean SpO2, minimum SpO2, ODI3, Delta D12 (D12) index, % time <90% AUC 0.84 (95% CI 0.79, 0.90), p<0.0001. A model probability threshold of >0.5 had a low sensitivity, 46.8%, and very high specificity, 95.2%; moderate predictive value (PPV), 77.08% and high negative predictive values (NPV), 83.97%. Lower probability threshold of >0.2247 gave the

highest combined sensitivity/ specificity, (78.48%/ 76.62%) and >0.1268 gave a high sensitivity 91.14% with a low specificity of 48.48%. D12 Index had the best predictive potential for OSA for a single NPO parameter, AUC 0.81 (95% CI 0.75, 0.87), p<0.0001.

Of 77 children in the validation dataset 59% were female, median age 7.33 years, 28.6% had an OAHI ≥5/hour. A combined model probability threshold of >0.1268 gave a very high sensitivity of 96.5% as observed in the training dataset with a low specificity of 43.6%, very high NPV of 96.0% and lower PPV of 40.6%. This signposted 67.5% to CR-P evaluation in the validation cohort (21 true positives and 31 false positives) and categorised 32.5% as no OSA (24 true negatives and 1 false negatives).

Conclusions

Limitations in the predictive performance of oximetry despite combining variables likely reflects the multifactorial nature of SDB in children with DS. Combining NPO indices and routinely collected demographic data could improve predictive potential of NPO for OSA in children with DS and be used to stratify OSA risk to support clinical decision making. Combined model scores could be integrated into risk score for moderate/ severe OSA with variable sensitivities and specificities. Such a scoring system would be for use as a screening tool to infer the probability of moderate/ severe OSA.

Presenting Author
Huiping Luo (China)

Authors
Huiping Luo (China); Hui Fa (China); Xiaoyu Zhou (China)

Presentation Day and Board Number
Friday, April 10, 2026 | P70

Title
Caregiver Psychological Distress in Pediatric Adenoid Hypertrophy: A Prospective Study in China

Introduction
Adenoid hypertrophy (AH) is one of the most common etiologies of upper airway obstruction and pediatric sleep-disordered breathing (SDB), including primary snoring and obstructive sleep apnea (OSA). Beyond ENT-related symptoms, AH can fragment sleep, reduce sleep quality, and induce intermittent hypoxia—factors associated with impaired neurocognitive development, behavioral dysregulation, daytime sleepiness, and growth delay. As the management of AH and SDB often requires ongoing clinical decisions, postoperative care, and home-based behavioral adjustments, caregivers play a central role in ensuring effective treatment. Emerging evidence suggests that caregiver psychological distress—such as anxiety and depression—may influence health-seeking behaviors, reduce treatment adherence, and exacerbate perceived symptom severity. Early identification of such distress during clinical encounters may therefore be crucial for optimizing both sleep-related outcomes and overall treatment effectiveness.

Materials and Methods
This prospective observational study recruited 133 caregivers accompanying children aged between 2 and 12 diagnosed with AH at a tertiary otolaryngology clinic in China. Caregivers completed the Generalized Anxiety Disorder-7 (GAD-7) and Patient Health Questionnaire-9 (PHQ-9) to assess anxiety and depressive symptoms. Descriptive statistics were used to determine the prevalence of psychological distress, and correlations between anxiety and depression were examined to assess co-occurrence.

Results
The median GAD-7 and PHQ-9 scores were 11.0 and 12.0, respectively, indicating moderate levels of caregiver anxiety and depression. A substantial proportion met clinically significant thresholds, with 63.16% scoring above the cutoff for anxiety and 73.68% for depression.

Anxiety and depressive symptoms showed a strong positive correlation ($r = 0.789$, $p < .001$), suggesting a high degree of co-occurring emotional burden among caregivers of children with AH.

Conclusions

This study highlights a considerable psychological burden among caregivers of children with AH in China, with many exhibiting moderate-to-severe anxiety and depressive symptoms that may negatively affect both caregiver well-being and children's sleep-related and medical outcomes. Building on these findings, subsequent research will analyze parent–physician consultation recordings to examine whether caregiver distress can be predicted through linguistic features. Ultimately, this line of work aims to inform the development of communication strategies enabling pediatric clinicians to more effectively detect, respond to, and alleviate caregiver distress during routine consultations.

Presenting Author
Huiping Luo (China)

Authors
Huiping Luo (China); Lei He (China)

Presentation Day and Board Number
Saturday, April 11, 2026 | P17

Title
Altered nasal and oral airflow variations during syllable reading tasks in pediatric OSA

Introduction
The obstructive sleep apnea-hypopnea syndrome (OSA) is a prevalent condition among children, between two and eight years of age in particular. Common upper airway obstructions often involve adenoid and/or tonsillar hypertrophy, leading to blockage in key sites like the nasopharynx and oropharynx. Prolonged OSA in children without timely and correct interventions can result in serious consequences, such as neurocognitive and behavioral deficits, cardiovascular complications, growth failures, and craniofacial abnormalities. In addition to reduced ventilation, upper airway obstructions also disrupt speech production. This points to the possibility to use acoustic analysis of speech as a tool for evaluations and diagnoses. While endoscopic and radiological techniques are indispensable, speech acoustic analysis offers a quick and non-intrusive supplement, making it ideal for initial ambulatory assessments and triage. This paper reports our work to analyze variations in the nasal and oral airflows in syllable reading tasks in both groups of OSA and healthy children.

Materials and Methods
We recruited a group of 21 OSAHS children with upper airway obstructions (adenoid and/or tonsillar hypertrophy), and the same number of healthy children as the comparison group (7+/–2.4 years of age). They were required to produce 144 syllables, which are classified into four categories: V (single vowel), NV (nasal consonant + vowel), VN (vowel + nasal consonant) and NVN (nasal consonant + vowel + nasal consonant).

We used the Glottal Enterprises NVS system which simultaneously recorded the airflow pressures at the nasal and oral exits. For each of the nasal and oral airflow during the production of each syllable, we extracted the intensity curve. Two types of variations were calculated for each intensity curve, coefficient of variation (cv) and time-dependent curvature

(curv). Altogether four numeric variables were calculated: cv_nasal, cv_oral, curv_nasal and curv_oral.

For each syllable category (V, NV, VN and NVN), we fitted a mixed-effect binary logistic regression model, where group (pathol vs healthy) was modeled as the dichotomous response variable, and the four intensity variables were fitted as regressors. As all participants produced the same set of syllables, syllables were modeled as random effects.

Results

The variance inflation factors (VIFs) for the four regressors (cv_nasal, cv_oral, curv_nasal, and curv_oral) were all below 5. This confirmed that multicollinearity was within tolerance, thereby supporting the inclusion of all variables in model building. All variables have been tested to be significant in explaining the difference between pathological and healthy groups for all syllable categories.

Conclusions

Our study demonstrates that nasal and oral airflow variations during syllable production are promising indicators of pediatric OSAHS. Further research should investigate how the location and degree of obstruction influence these airflow patterns to validate their utility in ambulatory assessment.

Acknowledgements

Shanghai Magnolia Talent Plan Pujiang Project

Presenting Author
Hyewon Woo (South Korea)

Authors
Ji-Ye Ahn (South Korea)

Presentation Day and Board Number
Friday, April 10, 2026 | P71

Title
Sleep Problems and Associated Comorbidities in Pediatric Patients with Drug-resistant Epilepsy

Introduction
Sleep disturbance is prevalent in pediatric epilepsy, particularly in drug-resistant epilepsy. Sleep and seizures are bi-directionally related, with each potentially exacerbating the other over the course of epilepsy. This study aimed to characterize sleep disturbance in children with DRE, to identify independent clinical and comorbidity-related factors associated with sleep disturbance severity, and to explore its relationship with quality of life.

Materials and Methods
The prospective multicenter registry cohort included children with DRE enrolled at eight tertiary hospitals in South Korea between 2022 and 2024. Caregivers completed mobile-based surveys incorporating the Sleep Disturbance Scale for Children and the Quality of Life in Childhood Epilepsy Questionnaire-16. Sleep disturbance was defined as an SDSC total score >50. Multivariate logistic regression was performed to identify independent factors associated with sleep disturbance severity.

Results
Sixty-nine children with DRE (mean age 8.2 years) were included. Clinically significant sleep disturbance was identified in 45% of the cohort. Among SDSC subdomains, disorders of excessive somnolence (38%), disorders of initiating and maintaining sleep (36%), and sleep–wake transition disorders (25%) were most prevalent. Multivariate analysis demonstrated that sleep disturbance severity was independently associated with caregiver-reported comorbid sleep difficulties (OR 1.54, 95% CI 1.29–1.88), difficulties in social interaction (OR 1.35, 95% CI 1.05–1.49), and a lower number of antiseizure medications (OR 0.92, 95% CI 0.87–0.97). Epilepsy-related factors, including seizure frequency, epilepsy duration, and structural brain abnormalities, were not significant predictors. Sleep disturbance severity was not significantly correlated with QOLCE-16 scores.

Conclusions

Sleep disturbance is highly prevalent in pediatric DRE. The severity of sleep disturbance is more closely associated with neurodevelopmental and social vulnerability than with epilepsy-related factors. Further studies are needed to determine whether early identification of sleep-vulnerable pediatric patients with drug-resistant epilepsy and timely intervention can improve long-term outcomes.

Presenting Author
Ikuko Mohri (Japan)

Authors
Kaori Suzuki (Japan); Ikuko Mohri (Japan); Emi Murata (Japan); Kumi Kato (Japan); Masako Taniike (Japan)

Presentation Day and Board Number
Friday, April 10, 2026 | P72

Title
Association between Heart Rate Variability and Behavioral problem in Children with Obstructive Sleep Apnea

Introduction
Obstructive sleep apnea (OSA) is a disorder in which normal ventilation and sleep patterns are disrupted due to upper airway obstruction during sleep. The apnea-hypopnea index (AHI), representing the number of apneas and hypopneas per hour as revealed by polysomnography (PSG), is used as an indicator of severity. Pediatric OSA, with an estimated prevalence of 1-4%, is characterized by behavioral symptoms such as hyperactivity/impulsivity, aggression, and attention problems, while daytime sleepiness is less pronounced compared to adults (International Classification of Sleep Disorders, 3rd Edition). The primary cause of pediatric OSA is enlarged adenoids and/or tonsils, making adenotonsillectomy (AT) the first-line treatment. We previously reported improvement in behavioral problems after AT in children with OSA, but the improvement of behavioral problems is unrelated to AHI (Murata et al. 2013). This study focused on autonomic nervous system activity in preoperative PSG and performed heart rate variability (HRV) analysis to investigate its association with improvement in problem behaviors after AT treatment.

Materials and Methods
Subjects: Twenty-five children aged 4 to 9 years with OSA diagnosed by PSG and who underwent AT at the Department of Pediatrics, Osaka University Hospital between 2007 and 2013. Behavioral assessment used the Child Behavior Checklist (CBCL/4-18 Japanese version). Participants were divided into two groups: improvement group (n=13) showing more than 3 point improvement, and a non-improvement group (n=12) showing less than 3 point in T-scores post-AT compared to pre-AT. Analysis Method: HRV analysis was used to non-invasively assess autonomic nervous system activity (sympathetic and parasympathetic nervous systems) using heart rate data during PSG. HRV LOG Analysis Pro-DSA Edition (NoruPro Light Systems, Inc) was used for HRV analysis. Frequency analysis and time-domain analysis were

performed on the RR intervals from the PSG heart rate data to calculate sympathetic indicators (Low Frequency:LF) and parasympathetic indicators (High Frequency; HF, Root Mean Square of Successive Differences: RMSSD). Sleep stages were scored using the Rechtschaffen & Kales method (Wake, REM, NREM: Stages 1–4). The degree of improvement in autonomic nervous system activity was compared with the improvement in CBCL T-scores. Paired t-tests were used for statistical testing. This study was approved by the Ethics Committee of Osaka University Hospital.

Results

Compared to the non-improvement group, the AT-improvement group showed increased sympathetic nervous system activity during deep sleep (S3, S4) and increased parasympathetic nervous system activity during REM and S3. Notably, LF values during S3, HF values during REM, and RMSSD values during REM correlated with the degree of improvement on the CBCL's Attention Problems subscale.

Conclusions

The behavioral improvement group in this study exhibited increased sympathetic and parasympathetic activity during deep sleep and REM sleep, respectively, pre AT . Given the observed correlation with attention problems—a concern in pediatric OSA—evaluating the sympathetic and parasympathetic nervous systems via HRV analysis, in addition to preoperative AHI, is considered useful for considering treatment options for children with OSA, such as selecting AT.

Presenting Author
Isabelle Mueller (United States)

Authors
Isabelle Mueller (United States); J David Nugent (United States); Margaret Shair (United States); Daianna J Rodriguez (United States); Nicolò Pini (United States); William P Fifer (United States)

Presentation Day and Board Number
Friday, April 10, 2026 | P73

Title
Autonomic Differences Across Sleep States in Infants Exposed to Prenatal Maternal Depression

Introduction
Prenatal maternal depression (PMD) affects up to 20% of pregnant people and is associated with adverse developmental and behavioral outcomes in the offspring. One proposed mechanism underlying these associations involves alterations of the autonomic nervous system originating in the fetal period, which may lead to subsequent atypical stress responsivity. Sleep may provide a unique window into neurodevelopment, as the emergence and differentiation of sleep states reflect rapid maturation of central and autonomic nervous system organization. Characterizing autonomic physiology within and across sleep states may therefore offer important insights into how exposure to prenatal depression shapes early developmental trajectories.

Materials and Methods
Participants were 1,545 full-term born infants from the NIH PASS cohort without prenatal exposure to alcohol or tobacco. Diagnosis of PMD was abstracted from medical records, with 160 (10.4%) mothers classified as depressed. Infant physiology was assessed via electrocardiogram (ECG) during natural sleep at one month of age. Mean heart rate (HR) and a measure of heart rate variability (HRV), specifically Standard Deviation of Normal-to-Normal intervals (SDNN), were derived by sleep state (active (AS) and quiet (QS)). Linear mixed-effects models examined the effect of PMD on HR and SDNN. Models controlled for sleep state, infant sex (M/F), gestational age at recording, and recording site (South Africa/United States).

Results
HR: significant main effects were observed for sleep state (p=.009), PMD (p=.028), and infant sex (p=.024). Infants exposed to PMD exhibited higher HR (M=128) compared to unexposed infants (M=124). SDNN: significant main effects were observed for sleep state (p

Conclusions

Sleep-based autonomic markers may serve as early, sensitive indicators of neurodevelopmental risk, relevant to pediatric sleep health, prevention, and early intervention. Our findings indicate that prenatal exposure to PMD is associated with differences in autonomic physiology within a critical developmental window. These results underscore the importance of considering PMD as a relevant developmental exposure capable of shaping early autonomic trajectories.

Acknowledgements

We sincerely thank the families whose participation made this study possible.

Presenting Author
Isha Shin (Australia)

Authors
Isha Shin (Australia); Kasey Fullwood (Australia); Laetitia Coles (Australia); Moya Vandeleur (Australia); Karen Waters (Australia); Jasneek Chawla (Australia)

Presentation Day and Board Number
Friday, April 10, 2026 | P74

Title
Parental Sleep Health Priorities in Childhood Neurodisability: Australian Insights

Introduction
Sleep problems are highly prevalent among children with neurodisabilities (ND), a heterogeneous group of lifelong conditions that affect motor, cognitive, behavioural, and sensory functioning. Up to 80% of children with ND experience significant sleep problems, with wide-ranging effects on physical health, behaviour, emotional regulation, and family wellbeing. Despite this burden, research priorities in paediatric sleep health are often informed by neurotypical populations, limiting the relevance and effectiveness of interventions for ND groups. Understanding parent-identified priorities is essential for guiding family-centred and diagnosis-responsive sleep research. This study examined how caregivers across diverse ND diagnoses prioritise sleep-related research topics and whether these priorities vary by diagnostic group, household structure, or prior engagement with sleep services.

Materials and Methods
A prospective cross-sectional survey was distributed across three tertiary Australian paediatric hospitals and national disability organisations. Eligible participants were primary caregivers of children under 18 with a clinician-diagnosed ND. The survey included demographic items and a ranking of ten sleep health research priorities developed through expert and consumer consultation. ND diagnoses were grouped into four categories: developmental disorders (Autism Spectrum Disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD)), genetic syndromes, neurological disorders, and other disorders. Data were analysed using descriptive statistics, t-tests and one-way ANOVAs, and to examine differences in priority rankings across diagnostic groups, household size, and previous sleep clinic attendance.

Results

In total, 298 complete responses were analysed (male 57.77%, median age 8.59 years). Genetic syndromes accounted for 41.3% of the sample, followed by developmental disorders (25.8%), neurological disorders (17.8%), and other conditions (15.1%). Across all ND types, parents consistently prioritised improving sleep continuity (M rank 7.76), enhancing daytime functioning (M rank 7.55), and addressing the broader impact of sleep difficulties on the family as a whole (M rank 7.51).

Differences in sleep priorities between ND diagnosis groups were reported, with parents of children with genetic syndromes ranking “sleep breathing problems” significantly higher than parents of children within other ND groups including developmental disorders ($p < 0.001$). Conversely, parents of children with developmental disorders ranked sleep timing as a significantly higher priority ($p = 0.03$) than those in the neurological disorders group. Household size had minimal influence on sleep prioritisation patterns. However, prior attendance at a sleep clinic was associated with higher prioritisation ($p < 0.01$) of sleep breathing problems."

Conclusions

Parents of children with ND share common concerns centred on sleep continuity, daytime functioning, and family wellbeing, highlighting universal unmet needs across diagnostic groups. Furthermore, these priorities reflect the pervasive disruption caused by night-time awakenings and their downstream effects on behaviour, attention, and family stress. Differences in priorities for sleep breathing and sleep timing underscore the importance of diagnosis-specific approaches to assessment and intervention. The influence of clinic attendance on parental prioritisation further emphasises the need for accessible sleep education and early referral pathways. These findings provide a foundation for shaping targeted, equitable, and family-centred sleep research for children with neurodisabilities to guide clinical assessment and treatment of sleep problems in children with ND.

Presenting Author
Isha Shin (Australia)

Authors
Isha Shin (Australia); Andrew Collaro (Australia); Jasneek Chawla (Australia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P13

Title
Understanding sleep disruption in hospitalised children: an Australian mixed-methods study

Introduction
Adequate sleep is essential for children's physical recovery, neurocognitive functioning, and emotional regulation. In hospitals, however, sleep is frequently compromised by environmental and clinical factors. Despite global recognition of sleep as a modifiable determinant of inpatient recovery, evidence describing children's sleep within real-world paediatric hospital environments remains limited. This mixed-methods study examined sleep quality, environmental conditions, and caregiver experiences of children admitted to a tertiary paediatric hospital, with the aim of informing sleep-improvement strategies relevant to international paediatric care settings.

Materials and Methods
Families of children admitted for ≥2 nights were recruited from the Queensland Children's Hospital. Quantitative measures included actigraphy across two hospital nights and two home nights where possible, complemented by noise and light monitoring, sleep diaries, and caregiver and staff surveys. Qualitative data were also obtained through semi-structured caregiver interviews and analysed using reflexive thematic analysis to identify cross-cutting influences on sleep.

Results
Data from 15 children were available for preliminary analysis (10 females, median age = 6 years [IQR 10]). Through actigraphy reports analysed by Sadeh algorithm, children had a median of 528 (IQR 142) minutes of sleep per night in hospital, compared to 526 (IQR 122) minutes at home, with similar sleep efficiency observed in hospital and home (median at hospital = 91% [IQR 12], median at home = 87% [IQR 22]). Median sound levels taken in hospital were 40.9 dBA compared to 37 dBA at home; both exceeding World Health Organisation recommendations. Five overarching themes emerged through thematic analysis of interview data: (1) environmental noise, particularly other children, monitor alarms and

equipment sounds; (2) intrusive light, especially from hallways and bedside devices; (3) clinical care routines, including overnight observations, blood pressure checks and IV administration, which often woke children despite their perceived necessity; (4) caregiver fatigue and discomfort, influenced by environmental disruptions, anxiety about the child's condition and inadequate parent sleeping arrangements; and (5) adaptation and improvement suggestions, with caregivers recommending hospital system-level changes, including designated quiet periods and enhanced sound and light insulation.

Conclusions

Children's sleep during hospitalisation is affected by a constellation of modifiable environmental and procedural factors, with consequences for both child and caregiver well-being. Consistent with global literature, findings from this study emphasise the need for evidence-based, system-level interventions such as centralised alarm systems, scheduled quiet periods, and improved environmental design. As quantitative analyses progress, these insights will help guide the development of internationally applicable, co-designed strategies to improve sleep quality in paediatric inpatient care.

Presenting Author
Ishnoor Nahal (Canada)

Authors
Ishnoor Nahal (Canada); Myka Estes (Canada); Elizabeth Deliscar (Canada); Suzanne Deliscar (Canada); Callum Heathcote (Canada); Greta Heathcote (Canada); Deborah Dewey (Canada); Megan Thomas (Canada); Sarah MacEachern (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P75

Title
Co-designing Nova Sleepcare: A Real World Solution to Improve Sleep for Children with Neurodevelopmental Disorders who have Behaviours of Concern

Introduction
Up to 86% of children with neurodevelopmental disorders (NDDs) have significant challenges with sleep quality and quantity, including difficulty falling asleep, frequent and/or prolonged overnight awakenings, and very early morning awakenings. Sleep problems contribute substantially to behaviours of concern (BoC; e.g., aggression, self-injury), with greater sleep disturbances associated with more severe behaviours. Conversely, improving sleep can improve behaviour. At their most severe, BoC can prevent youth from safely living at home, limit future independence, and result in disproportionate healthcare utilization, estimated to be 2 to 5 times higher for children with severe BoC. The cascading effects of caregiver burnout, family stress, and reduced quality of life create an urgent need for accessible interventions. Sleep education, the collaborative provision of behavioural strategies to improve sleep, effectively addresses sleep problems in youth with NDDs regardless of underlying etiology, serving as an essential first-line treatment without which other interventions often fail. Caregivers value this education, and it is associated with strong improvements in youth sleep outcomes when paired with individualized support. Yet despite established efficacy and clinical guidelines, most children with NDDs never receive behavioural sleep interventions. To bridge this implementation gap, we co-created Nova Sleepcare, an individualized sleep intervention that can be delivered at the point-of-care, specifically during physician visits when sleep problems and BoC are identified. It delivers active sleep education: a collaborative, physician-led process in which families co-develop practical, customized strategies based on evidence-based sleep hygiene and behavioural principles.

Materials and Methods

An initial prototype of Nova Sleepcare was tested in a cohort of seven children who visited the Child Development Centre in Calgary, Canada. To further refine Nova Sleepcare, we conducted a two-phased co-design journey. Phase I: Eight youth, nine caregivers, and six physicians participated in unstructured interviews exploring barriers and facilitators of effective in-clinic, physician-delivered sleep education. Meeting recordings were transcribed verbatim and a reflexive thematic analysis (RTA) conducted using NVivo software (V12). Phase II: Four youth, six caregivers, and five physicians participated in consensus discussions using nominal group technique to finalize Nova Sleepcare for feasibility and efficacy testing.

Results

Nova Sleepcare consists of handouts for youth, caregivers, and physicians, a Pathway to Better Sleep for stepwise implementation of strategies including melatonin, and a website. Preliminary testing found that, on average, children fall asleep 40 minutes faster, slept three hours longer, and behavioral outcomes were reduced by 50%. RTA identified the following facilitators: 1) strong motivation among youth and caregivers to improve sleep and reduce BoC; (2) Nova Sleepcare's accessibility and ability to be tailored across diverse presentations and settings; and (3) its stepwise Pathway to Better Sleep, helping families and pediatricians collaboratively prioritize manageable strategies. The barriers reflected end-users' limited capacity to deliver or implement sleep strategies. To enable successful implementation of Nova Sleepcare, priorities included pre-appointment materials, visual learning tools, and needs assessment to guide physician training.

Conclusions

Nova Sleepcare is an innovative approach to the treatment of BoC by embedding active sleep education in routine pediatric workflows.

Acknowledgements

Thank you to all research partners who were involved in the co-design of Nova Sleepcare.

Presenting Author
ivan francisco alvarez orozco (Colombia)

Authors
ivan francisco alvarez orozco (Colombia); Jenny Libeth Jurado Hernández (Colombia)

Presentation Day and Board Number
Friday, April 10, 2026 | P76

Title
Pharmacological Sleep Onset Insomnia vs. “Vamping” in Caribbean Colombian Adolescents: Dual Nicotine Use Drives Sleep Debt Independent of Screen Time

Introduction
Electronic Nicotine Delivery Systems (ENDS) use has surged globally among adolescents. While respiratory effects are documented, the association between ENDS use, mental health, and sleep quality remains understudied in Latin America. We aimed to analyze the association between ENDS consumption comparing exclusive versus dual use and symptoms of anxiety, depression, and insufficient sleep in adolescents from Valledupar, Colombia.

Materials and Methods
A cross-sectional analytical study was conducted in 2024 involving 9,069 adolescents (mean age: 13.9 ± 1.9 years) from public schools selected via cluster sampling. Data were collected using standardized questionnaires covering sociodemographics, vaping habits, and sleep patterns. Mental health symptoms were assessed using the validated Goldberg Anxiety and Depression Scale. Participants were stratified into four groups: Non-Users, Exclusive Conventional Smokers, Exclusive ENDS Users, and Dual Users. Associations were evaluated using Poisson regression models adjusted for age, gender, school, and “vamping” (screen use before sleep).

Results
The prevalence of habitual ENDS use was 14.0%, and 2.6% were identified as Dual Users. Adjusted Poisson regression confirmed that habitual vaping is an independent risk factor for depression (aPR: 1.27; 95% CI: 1.23–1.31) and anxiety (aPR: 1.36; 95% CI: 1.29–1.43). Dual Users exhibited the most severe clinical profile: 45% increased prevalence of anxiety (aPR: 1.45; 95% CI: 1.31–1.59) and 26% increase in depression (aPR: 1.26; 95% CI: 1.19–1.34) compared to non-users. Critically, dual use was the strongest predictor for insufficient sleep (aPR: 1.23; 95% CI: 1.06–1.44; p=0.007). Exclusive ENDS users demonstrated significant reduction in sleep hours (β = -0.16 hours; p=0.011). Notably, Dual Users perceived insufficient

sleep despite showing no significant reduction in total sleep hours, suggesting sleep onset insomnia rather than sleep deprivation.

Conclusions

This finding points towards a pharmacological mechanism: nicotine's activation of nicotinic acetylcholine receptors in arousal-promoting brain regions (locus coeruleus, basal forebrain) increases cortical alertness and prolongs sleep latency. The "Double Burden" observed in dual users likely reflects higher cumulative nicotine levels leading to profound neuroadaptations. Importantly, these associations persisted after adjusting for "vamping," demonstrating that sleep disturbance is pharmacologically driven by nicotine's stimulant properties rather than behavioral factors alone.

Presenting Author
Jared Saletin (United States)

Authors
Jared Saletin (United States); Grace Kupka (United States); Aashritha Sadu (United States); Giulia Righi (United States); David Barker (United States); Mary Carskadon (United States)

Presentation Day and Board Number
Friday, April 10, 2026 | P77

Title
Three Lessons from Adapting Sleep and Circadian Research Methods in a Child Psychiatry Hospital

Introduction
Sleep problems are common in children with neurodevelopmental and neuropsychiatric disorders. Research remains limited by high-burden methodologies not easily adaptable for many young people with these conditions, particularly acute patients in hospital-based day or in-patient treatment. We present three examples of our hospital's COBRE-funded Sleep and Circadian Methods Research Core adapting sleep and circadian research methods to complex mental health questions in patients at the oldest child psychiatry hospital in the United States.

Materials and Methods
We present insights from three on-going projects adapting gold-standard methods to our child psychiatry context: (1) assessing at-home dim-light-melatonin-onset in youth with ADHD symptoms; (2) adapting actigraphy scoring to sedentary psychiatrically impaired youth; and (3) developing best-practices for wearable sleep EEG in child psychiatry research.

Results
(1) At-home dim-light melatonin-onset phase in ADHD youth:

Sixty adolescents ranging in ADHD symptoms (28M;11.76±1.24) completed at least five nights of sleep stabilization before providing 10 saliva samples over a data collection evening at home. Following an evening video-call orientation, children continuously wore light-dimming glasses and provided saliva samples every 30-minutes extending 1-hour past bedtime. Saliva was assayed for melatonin by radioimmunoassay; DLMO was computed by temporal

interpolation (absolute threshold of 4 pg/ml). DLMO capture was successful in 92% (n=55) of youth. ADHD status did not moderate the rates of success ($\chi 2=0.69$, p=.44, Cramer's V=0.16).

(2) Scoring actigraphy in psychiatric youth:

Thirty-six adolescents (24 F; ages 13-17 years [m±sd: 15±1.7]) diagnosed with anxiety related disorders wore a patch-based activity monitor over their dominant triceps (8.7±3.1 nights) to estimate sleep in 1-minute epochs (Sadeh). Sleep periods were scored with both gold-standard rules (sleep onset at first of 3-minutes of sleep; offset at last of 5 minutes; "3-5 rule") and an alternative adjusted for peri-sleep sedentary behavior (15-minutes continuous sleep required for both onset and offset; "15-15 rule"). 15-15 scoring reduced need for expert-consensus-decisions (70 nights in total, averaging 17% of a participant's record) compared to 3-5 scoring (147 nights, 30% of a participant's record) and did not alter estimates of total sleep time (mean: -5.2 minutes [-16.2, 5.8] with 15-15 rule).

(3) Wearable sleep EEG in neuropsychiatric youth:

Polysomnography is burdensome, costly, and may not be appropriate for child psychiatry research. Our research core has deployed wearable EEG (e.g., ZMax, Dreem 3, CGX Patch EEG, etc.) for children in neuropsychiatric (e.g., anxiety) and neurodevelopmental (e.g., autism, ADHD) contexts. We will present best-practice protocols and example data to indicate a high rate of data acquisition success and the fidelity of wearable EEG data (including whole-night hypnograms and spectrograms, and oscillatory detection).

Conclusions

These concrete examples present a path forward for scalable sleep and circadian research methodologies in a child psychiatry context. Key lessons include adapting instrument selection, participant instructions, and data processing procedures to each patient's and setting's unique needs. New strategies should be evaluated for robustness. The Sleep and Circadian Methods Research Core is a model resource for facilitating state-of-the-art sleep measurement in settings where traditional methods are inappropriate.

Acknowledgements

P20GM139743 (NIGMS; PI: Carskadon), R01HD103665 (NICHD; PI: Saletin).

Presenting Author
Jay Jones (United Kingdom)

Authors
Jay Jones (United Kingdom); Lauren Shelley (United Kingdom); Andrew Bagshaw (United Kingdom); Rory T. Devine (United Kingdom); Caroline Richards (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P78

Title
The impact of sleep on children's executive functioning: A systematic review and meta-analysis.

Introduction
Children's executive function (EF) skills (i.e., working memory, response inhibition and cognitive flexibility) are purported to be impacted by poor sleep. Research has observed the association between sleep parameters and performance on EF tasks in both typically developing children and children with neurodevelopmental conditions (NDC), but critically, sleep and EF are operationalised and/or measured in many ways across individual studies. The purpose of this meta-analysis is to identify the reported associations between sleep and executive function tasks in children, and to assess the direction and magnitude of such effects.

Materials and Methods
This multi-level meta-analysis was pre-registered prior to data extraction (https://www.crd.york.ac.uk/PROSPERO/view/CRD420251230788) and conducted in accordance with PRISMA guidelines . A systematic literature search was conducted in Ovid PsycINFO, Ovid MEDLINE, Ovid Embase, Scopus, PubMed and ProQuest Dissertations & Theses Global using keywords pertaining to EF and sleep. Records were screened and extracted if they reported, or provided sufficient data to calculate an effect size between one or more sleep parameters and one or more task-based EF in a sample of children (mean age < 18) who either (a) are typically developing or (b) have a neurodevelopmental/neurogenetic condition. Where the data allow, we will utilise subgroup analyses to explore potential sources of heterogeneity amongst reported effect sizes. Primarily, we aim to investigate whether the relationship between sleep and task-based EF differs between typically developing children and children with NDCs, with further stratification by condition (e.g., autism, intellectual disability, neurogenetic syndrome) where feasible. We will also examine the specificity of the links between particular sleep parameters (e.g. sleep duration) and

particular domains of EF, and examine whether the relationship between sleep and EF is moderated by methodological or sample differences (e.g., study quality, mean age).

Results

Database searches identified a total of 15181 records. After de-duplication, title and abstract screening was completed for 9101 records, of which, 443 met the eligibility criteria at this stage and were retained for full text review. Full text screening and preliminary analyses are underway, in line with the pre-registration.

Conclusions

This meta-analysis will synthesise a diverse body of literature which explores the impact of disrupted sleep on executive function task performance in children and will be the first to investigate how this impact differs amongst children with neurodevelopmental conditions and typically developing children. The findings from this study will enhance our understanding of the relationship between sleep parameters and daytime outcome in children and will delineate the importance of sleep support for children experiencing poor sleep. This is particularly pertinent for children with NDCs, where heightened rates of sleep disorders are reported compared to TD children, and where sleep support and intervention may be a valuable avenue for modifying daytime outcome.

Acknowledgements

This work was funded by Cerebra (Charity).

Presenting Author
JEONG WHUN KIM (South Korea)

Authors
Seunghun Kim (South Korea); Junki Hong (South Korea); Dongheon Lee (South Korea)

Presentation Day and Board Number
Friday, April 10, 2026 | P82

Title
Sound-Based AI Sleep Staging in Pediatric Patients

Introduction
This study evaluates the efficacy of a sound-based AI model for pediatric sleep staging as a non-contact adjunct to traditional polysomnography (PSG). Sleep disturbances are prevalent in children and can significantly affect development, behavior, and quality of life. Polysomnography (PSG) remains the gold standard for evaluating these conditions. However, PSG presents significant challenges in pediatric populations due to the physical contact required for electrode and sensor placement. Previous studies report that one-third of parents consider their child's sleep during PSG to be atypical compared to home sleep. Even home-based PSG systems face limitations, notably due to young children removing monitoring leads. These challenges highlight the need for contactless technologies as a practical alternative, particularly in pediatric home settings.

Materials and Methods
We evaluated the performance of a sound-based AI sleep staging model using synchronized audio recordings from PSG equipment and corresponding PSG data from 195 nights, obtained from 191 pediatric patients sleeping alone in a hospital setting. Participants had a mean age of 15.04 years (SD: 3.26; range: 2.7–18.9), a mean body mass index (BMI) of 22.66 (SD: 5.50), and a mean apnea-hypopnea index (AHI) of 7.65 (SD: 17.39). The sound-based AI model used in this study was previously validated in adults with an accuracy of 80.01% and a macro F1 score of 0.76 for four-stage classification. Epoch-by-epoch accuracy was evaluated, and macro F1 scores calculated per night were analyzed for correlations with age.

Results
Across the pediatric dataset, epoch-by-epoch sleep staging accuracy was 72.66%, with a macro F1 score of 0.71, indicating a modest reduction from adult performance by approximately 7% in accuracy and 0.05 in macro F1. Stage-specific performance analyses showed consistent reductions compared to adults for Wake, Light, and REM stages, each

decreasing by approximately 0.08 in F1 scores. In contrast, the F1 score for the Deep sleep stage increased by about 0.06, primarily due to a significant improvement in precision. When examining macro F1 scores of individual nights by age, a positive correlation coefficient of 0.33 was observed between age and model performance. Linear regression analysis indicated that performance improved proportionally with age, with a slope of 0.02 and an intercept of 0.36, resulting in near-adult macro F1 scores of approximately 0.74 by age 19.

Conclusions

This study demonstrates the potential of a sound-based AI model as a non-contact adjunct to PSG for pediatric sleep staging, particularly beneficial for children sensitive to conventional PSG procedures. Limitations include the relatively poor audio quality of PSG recordings and the scarcity of data from younger children, with only 17 nights recorded from children under 10 years old. Nonetheless, these findings suggest that incorporating additional younger pediatric data into model training could further enhance performance, ultimately supporting the practical application of sound-based AI models for accurate and comfortable pediatric sleep monitoring.

Presenting Author
Jodi Mindell (United States)

Authors
Jodi Mindelll (United States); Erin Leichman (United States); M. Catherine Mack (United States)

Presentation Day and Board Number
Friday, April 10, 2026 | P84

Title
Sleep and bonding in parents of newborns

Introduction
The parent-to-infant bond is an important emotional connection. Poor

bonding is associated with negative developmental and mental health outcomes in children, as well as negative parental mental health. One contributor to bonding may be sleep, however few studies have investigated this relationship.

Materials and Methods
125 parents (96.8% mother) of newborns (2-6 wks; M =4.4 wks) completed the Postpartum Bonding Questionnaire (PBQ, lower scores indicate increased bonding), Brief Infant Sleep Questionnaire–Revised (BISQ-R), PROMIS Sleep Disturbance (SDi) and Sleep-Related Impairment (SRI) scales with additional sleep pattern questions, and Brief Mood Introspection Scale (BMIS).

Results
PBQ ranged from 0-29 (M=8.3), with parent mood scores averaging 6.1. Overall, 46.4% of parents reported that their newborn's sleep was a problem. Sleep disturbance (SDi; mean T score=54.7) was elevated for 12.0% of parents, and sleep related impairment (SRI; mean T score=56.7) was elevated for 39.2%.

Poorer bonding was associated with parental outcomes: worse daytime sleep-related impairment (SRI; r=.38, p

Conclusions
Overall, poorer bonding is related to parents' poorer daytime functioning, including unpleasant mood, daytime sleepiness/fatigue, and less daytime sleep. Interestingly, no relationships were found between bonding with newborn sleep patterns or parent nighttime sleep patterns, but poorer bonding was associated with negative perceptions of their baby's

nighttime and daytime sleep. In addition to addressing parental overall mood, pediatric providers may want to problem solve with parents of newborns ways they can personally get more sleep and assistance during the day to potentially help with bonding.

Presenting Author
Jovita Corzo (Chile)

Authors
Jovita Corzo (Chile); Claudia Riffo (Chile); Sofia Valenzuela (Chile); Tomas Mesa Latorre (Chile); Maria Olga Retamal (Chile)

Presentation Day and Board Number
Friday, April 10, 2026 | P85

Title
Restless Sleep Disorder in Neurological Patients

Introduction
Restless Sleep Disorder (RSD) is a primary sleep disorder linked to iron deficiency and dopaminergic alterations. Although its prevalence has been documented in sleep centers (7.7%) and in patients with ADHD (9.1%), there is a significant gap regarding its impact in general pediatric neurology consultations. This work represents the first Latin American study to evaluate RSD prevalence in children attending pediatric neurology clinics. The objective is to transcend the known link with ADHD, investigating its presence in conditions such as Autism Spectrum Disorder (ASD) and Epilepsy, where "restless sleep" is a frequent but understudied clinical complaint. Identifying RSD is crucial for clinical practice, as iron supplementation offers an effective therapeutic route to improve the behavioral, cognitive, and social functioning of these patients.

Materials and Methods
A cross-sectional, descriptive study was conducted in a general pediatric neurology clinic. A 12-item survey was administered to parents of patients whose primary reason for consultation was not sleep-related. The instrument assessed the reason for consultation, comorbidities, and international diagnostic criteria for RSD. This design allowed for the identification of prevalence and clinical patterns in a real-world neurological setting.

Results
The study included 68 patients (46 males, 22 females) with an age range of 2 to 15 years and a median age of 8. The prevalence of "probable" Restless Sleep Disorder (RSD)—meeting all diagnostic criteria except for ferritin levels—was 25%. Analysis of neurological associations showed that ADHD (35%) and ASD (23%) were the most frequent comorbidities, followed by headache (17.6%) and epilepsy (12%). The most prevalent landmark symptom was large muscle group movements (94%), occurring at least three times per week in 82% of cases, with

daytime symptoms reported by 76%. Additionally, 41% of the sample presented medical comorbidities, most notably bruxism (28%) and frequent snoring (15%).

Conclusions

This study of 68 patients (median age 8) revealed a 25% prevalence of "probable" RSD, a figure that quadruples the 7.7% reported in international sleep centers. This is a disruptive finding, demonstrating that the prevalence in general neurology clinics is significantly higher than in populations already referred to sleep specialists. Unlike classic literature focused mainly on ADHD, our results show a diverse distribution across ADHD (35%), ASD (23%), headache (17.6%), and epilepsy (12%). Identifying this phenotype is critical, as 76% of patients experience daytime symptoms. Timely diagnosis is essential to prevent the exacerbation of underlying neurological symptoms and to substantially improve the quality of life for both the patient and their family.

Acknowledgements

We thank the institutional Pediatric Neurology and Sleep team for their support, and Dr. Del Rosso for her invaluable review of the questionnaire. Their contribution was fundamental to this work.

Presenting Author
Judith Owens (United States)

Authors
Kiran Maski (United States); Anne Marie Morse (United States); Sally Ibrahim (United States); Rakesh Bhattacharjee (United States); Judith Owens (United States); Luis E. Ortiz (United States); Gary Feldman (United States); Narong Simakajornboon (United States); Joshua Henderson (United States)

Presentation Day and Board Number
Friday, April 10, 2026 | P81

Title
Demographics and Disease Characteristics Among Pediatric Patients With Narcolepsy

Introduction
Narcolepsy is a chronic disorder, with symptom onset frequently occurring between ages 10-25 years. Clinical and demographic information is lacking in pediatric patients with narcolepsy. It is particularly important to understand the path to diagnosis for pediatric patients with narcolepsy, as missed or delayed diagnosis may have adverse effects on quality of life and impact social and academic development. This study was conducted to better understand this population, including the prevalence of narcolepsy subtypes, time from symptom onset to diagnosis, and patterns of medication use.

Materials and Methods
A retrospective review of Pulse Infoframe registry data of patients aged ≤18 years with a diagnosis of narcolepsy type 1 (NT1) or type 2 (NT2) from 22 US hospitals between 2009-2017 was conducted. All patients included in the analysis had undergone a clinical evaluation, an overnight polysomnographic study, and a Multiple Sleep Latency Test. Data were analyzed descriptively.

Results
In total, 471 pediatric patients were identified in the dataset (NT1, 70.3%; NT2, 29.5%; unknown narcolepsy type, 0.2%; female, 47.6%; white, 48.2%; Black, 41.2%; non-Hispanic, 89.4%). The most reported Tanner stage classifications were stage 1 (n=79 [16.8%]) and stage 5 (n=55 [11.7%]); 48.9% (n=235) of classifications were not available. The median (IQR) ages at the onset of excessive daytime sleepiness (EDS) and at diagnosis were 9.0 (6.9-12.5) years and 12.0 (8.5-15.0) years, respectively. Mean (SD) Epworth Sleepiness Scale for Children and Adolescents (ESS-CHAD) scores in patients before treatment were 17.8 (4.5). Over half of the

patients reported restless sleeping (62.6%), sleep maintenance problems (58.4%), sleep talking (57.3%), and snoring (54.4%). The most frequently reported comorbidity was excessive weight gain (48.4%). Prior treatments included stimulants (87.9%), wake-promoting agents (69.4%), and antidepressants (50.7%); 30.6% had tried sodium oxybate.

Conclusions

In this pediatric dataset, most patients reported a delay of ~3 years from symptom onset to narcolepsy diagnosis, with NT1 being a more prevalent diagnosis than NT2. A high proportion of patients were either white or black, and a wide range of pubertal developmental stages at diagnosis was observed. ESS-CHAD scores reflected substantial levels of EDS; sleep-related symptoms were also common in these patients. These findings emphasize the need for timely diagnosis and access to effective treatments for these patients.

Acknowledgements

Full Author List: Kiran Maski, Boston, MA, USA; Anne Marie Morse, Danville, PA, USA; Sally Ibrahim, Cleveland, OH, USA; Rakesh Bhattacharjee, San Diego, CA, USA; Judith Owens, Boston, MA, USA; Luis E. Ortiz, St. Petersburg, FL, USA; Gary Feldman, Irvine, CA, USA; Narong Simakajornboon, Cincinnati, OH, USA; Joshua Henderson, Boston, MA, USA; Jennifer Gudeman, Chesterfield, MO, USA; Brian Abaluck, Chesterfield, MO, USA; Femida H. Gwadry Sridhar, Boston, MA, USA

This study was funded by Avadel Pharmaceuticals (Chesterfield, MO). Medical writing support was provided by Hannah Riley Knight, PhD, from Citrus Health Group, Inc. (Chicago, IL), and was funded by Avadel Pharmaceuticals (Chesterfield, MO)."

Presenting Author
Julian Mollin (Germany)

Authors
Julian Mollin (Germany); Thomas Erler (Germany); Jan Däbritz (Germany); Frank Mayer (Germany); Osman S. Ipsiroglu (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P87

Title
Revisiting the Diagnostic Approach to Sleep Related Movement Disorders in Children and Adolescents within the ICD-11 Framework

Introduction
Restlessness at bedtime as a core symptom of sleep-related movement disorders (SRMD) is frequently misinterpreted or overlooked. To enable a training background-independent, phenotype-oriented classification of sleep disorders, International Classification of Diseases 11th Revision (ICD-11) introduced a dedicated chapter on Sleep-Wake Disorders (SWDs), classifying Restless Legs Syndrome and differential diagnostic considerations in the subchapter of SRMDs. This framework provides a broader basis for SWDs related to childhood restlessness, including the evaluation of sleep quality, as sleep deprived children fight daytime sleepiness with restlessness. Consequently, restlessness, a core symptom in neurodevelopmental/mental health disorders has emerged to a clinical core outcome measure, thus differential diagnostic considerations have to start already at the community level. Therefore, for enabling systematic evaluation and structured phenotyping, we need to revisit our understanding of paediatric restlessness in SWDs.

Materials and Methods
We analysed commonly used developmental and sleep medicine/psychology questionnaires (n=14) published between 1989-2013, and divided these further into restlessness-related items during the day, night, and wake-sleep transitions for identifying the various screening questions for restlessness presentations.

Results
Analysis: None of the questionnaires assessed restlessness across all times of day, night, and wake-sleep transitions. 3/6 developmental questionnaires captured restless daytime behaviours (e.g., Attention Deficit Hyperactivity Disorder, Autism), while 6/8 sleep

questionnaires captured restless behaviours during the day (3/6), during transitioning to sleep (2/6), and during sleep (5/6).

Prior to the introduction, validation, and implementation of ICD-11 compatible new questionnaires, we suggest a pragmatic explorative approach for clinical practice:

Community Level. A conceptual communication-framework for lay-audience will support early recognition of SRMDs: (1) restlessness at daytime can be a sign of sleep deprivation; (2) restlessness during sleep/wake transition and/or during sleep can affect daytime functioning/wellbeing through sleep deprivation. (3) The presence of either requires further investigations.

Primary Care. To capture restlessness as a treatable contributor to SRMDs with standardized bloodwork investigations and treat with first-line-treatment recommendations, we extracted a list of questions related to day- and nighttime restlessness and daytime somnolence from the questionnaires. These allow physicians to prompt parents to describe their child's 24/7 restlessness and investigate "probable SRMD" rather than establishing a definitive day and/or nighttime associated diagnosis with a single questionnaire. Necessary clinical evaluation includes physical examination, family SWD- and SMRD-history, laboratory screening for common causes of restlessness, and information on non-pharmacological interventions if SRMDs affect sleep quality and/or are chronic.

Secondary/Tertiary Care: Referral to a sleep medicine-trained subspecialist for persisting symptoms despite first-line-treatment. National/international guidelines direct further diagnostic workup and are not subject to this community-based screening concept."

Conclusions

The new ICD-11 framework asks to revisit traditional categorical diagnosis-focused concepts and focuses on resource-oriented, stepwise frameworks for screening and diagnosis of paediatric SRMDs. Nighttime restlessness as a core symptom, outcome measure, and differential diagnosis, needs to be investigated at the community level. With this screening framework, we expect to increase the diagnostic yield for SRMDs; clinical validation and health-economic evaluation will prove benefits and needs for further adaptations.

Presenting Author
Julian Mollin (Germany)

Authors
Julian Mollin (Germany), Kate Lawrence (United Kingdom), Silvia Miano (Switzerland), Natasha Patel (Canada), Lech Popiołek (Poland) Mirja Quante (Germany) Isabel Santonja (Austria), Gulcin B. Senel (Turkey), Rosalia Silvestri (Italy), Narong Simakajornboon (United States), Susan Smith (United States), Megan Thomas (Canada), Margaret D. Weiss (United States), Osman S. Ipsiroglu (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P14

Title
Are we considering Iron Deficiency and/or Homeostasis in Assessment of Sleep-Wake Disorders? An explorative Survey on current Clinical Procedures

Introduction
Iron deficiency (ID) is the most prevalent micronutrient deficiency worldwide and a leading contributor to hyperarousability and restlessness, with direct effects on sleep-wake behaviours. In children and adolescents, restlessness reflects impaired sleep quality and compensatory responses to daytime sleepiness and has therefore emerged as a relevant outcome. While 24/7 restlessness is closely associated with ID, clinical practice has yet to fully integrate the broader concept of iron homeostasis (Fe-homeostasis), which acknowledges multiple factors influencing iron status.

In 2022, the International Classification of Diseases Version 11 (ICD-11) introduced a dedicated chapter on Sleep-Wake Disorders (SWDs), enabling a phenotype-oriented classification independent of training background and diagnostic specialisation. This framework conceptualizes “restlessness” as a key clinical symptom across sleep-related movement disorders (SRMDs) thus allowing the systematic investigation of modifiable root causes, including ID and Fe-homeostasis supporting prevention-oriented assessments across care levels.

This ongoing landscape analysis investigates ID-screening/Fe-homeostasis review in children and adolescents with SWDs, particularly SRMDs, across different clinical settings, addressing the following questions:

How are the concepts of ID/Fe-homeostasis investigated and applied in the diagnostic assessment of children and adolescents presenting with SRMDs?

How are ID/Fe-homeostasis conceptualized and utilized as a preventive mechanism within secondary and tertiary prevention strategies in pediatric sleep medicine?

Materials and Methods

The study is embedded within the Network of the ChildRight2Sleep (CR2S) Initiative (comprising 24 countries). Data on clinical practice and national/regional practice guidelines is collected among network members, who have been liaisons. Ethical approval has been requested through the University of British Columbia.

Block 1: Demographic and Clinical Context. Assessment of patient age groups, clinical setting, information on diagnostic resources and infrastructure.

Block 2: Medical History and Symptom-Oriented Assessment. History related to ID/Fe-homeostasis; including dietary factors, lead exposure, family history, growth and development, sleep-related symptoms, and comorbidities.

Block 3: Clinical Observation and Physical Examination. Clinical observation and physical examinations, focusing on: appearance, academic performance, growth, cardiorespiratory, neurological, and behavioural aspects.

Block 4: Laboratory Investigations. Laboratory investigations; standardized/individualized panels, specific hematological, iron, chemistry and inflammatory parameters.

Block 5: Further Diagnostics: Additional functional diagnostics: sleep and neurophysiological testing, neurocognitive/behavioural assessments, autonomic/respiratory evaluations, and imaging."

Results

The survey has been developed and is under internal review by network members. Data

collection and analysis are expected to be completed by March 2026. Results will capture the variability in diagnostic routines and conceptual approaches across healthcare settings and inform how the concepts of ID/Fe-homeostasis have been integrated in clinical care and support the development of a health economic model, which structures knowledge dissemination, education and thus diagnostic pathways.

Conclusions

The ICD-11 framework prompts a re-evaluation of traditional diagnostic pathways and shifts towards a symptom-based approach in SRMDs.This brings the concepts of ID/Fe-homeostasis into focus as a treatable contributor in children and adolescents presenting with restlessness, before further diagnostic investigations are done. The landscape analysis will inform ID/Fe-homeostasis related future activities.

Presenting Author
Julian Mollin (Germany)

Authors
Osman S. Ipsiroglu (Canada), Edit Bardi (Austria), Palma Benedek (Hungary), Theresa Bengough (Austria), Gulcin B. Senel (Turkey), Thomas Czypionka (Austria), Payam Dadvand (Spain), Nato Darchia (Georgia), Barbara Felt (United States), Thomas Herdin (Austria), Olivia Hill (Canada), Yalda Khaje (Canada), Ourania Kolokotroni (Cyprus), Dariia Kostiukova (Ukraine), Kate Lawrence (United Kingdom), Silvia Miano (Switzerland), Julian Mollin (Germany), Christopher Papandreou (Greece), Natasha Patel (Canada), Lech Popiołek (Poland), Damian Przybycień (Poland), Mirja Quante (Germany), Cátia Reis (Portugal), Zsófia Róna (Austria), Mary A. Ryan (Ireland), Isabel Santonja (Austria), Barbara Schneider (Germany), Alessandro Silvani (Italy), Rosalia Silvestri (Italy), Narong Simakajornboon (United States), Barbara G. Strazisar (Slovenia), Louise Strøm (Denmark), Megan Thomas (Canada), Fiona Tierney (Ireland), Luci Wiggs (United Kingdom)

Day and Board Number
Saturday, April 11, 2026 | P52

Title
Developing Research Evidence & Assessment Measures for Sleep – The ChildRight2Sleep Network's Perspective on ICD-11

Introduction
Sleep disturbances and/or disorders (SDDs) are a main cause of many widespread non-communicable diseases, including mental health disorders, heart disease, stroke, diabetes and chronic lung disease. Across the life course, and even during pregnancy, SDDs have negative effects, increasing susceptibility for non-communicable diseases and adverse neurodevelopmental outcomes. In childhood and adolescence, SDDs impair neurological, cognitive, emotional, social, and academic development. Long-term consequences are distress, psychosocial burden, and societal costs. Perinatal and paediatric SDDs remain insufficiently integrated into public health strategies and routine primary care. Approaches are often fragmented and confined to tertiary settings. Addressing these gaps requires a coordinated, multiprofessional, transdisciplinary, and out-of-the-box strategy to sleep/wake-behaviours and/or SDDs. The ChildRight2Sleep (CR2S) initiative approaches sleep as a fundamental right, providing the rationale for connecting research, policy, and advocacy at the primary care level.

Materials and Methods

The network concept emerged from an analysis process of clinical practice and informed a position statement framing healthy sleep as a child and human right for addressing blind spots in paediatric sleep medicine (Ipsiroglu et al., Aktuelle Kinderschlafmedizin, 2023) and the Vienna Proposal ChildRight2Sleep in Times of ICD-11 (2026). Participant engagement was systematically conducted using four modified Delphi rounds.

Results

Structure. Multiprofessional, transdisciplinary team of investigators (11/60 <40yrs, 24 countries, 67% female). Expertise: clinical medicine (37%), health sciences (32%), psychology (12%), basic medicine (7%), biological sciences (7%), and others (7%) compounded in five working groups and three connector themes.

Concept. Overarching themes: Identification and Harmonization of Outcome Measures, and Sustainability through Teaching and Knowledge Dissemination for Health Services.

Objectives using agreement ratings (AR). (1) Harmonization/standardization of sleep-related outcome measures across research/clinical practice (AR:85%). (2) Mapping/harmonization of sleep variables within mother-child cohorts with protocols for future data collection and linkage (AR:81%). (3) Transformation of sleep education in medicine/psychology curricula through modular, competency-based approaches (AR:91%). (4) Integration of sleep as a core component of preventive health care via standardized screening, diagnostic, and first-line management pathways (AR:93%). (5) Implementation through regional/national/international Sleep Health Hubs (AR:97%)."

Conclusions

The focus on sleep medicine as a subspeciality resulted in SDDs being treated as a niche topic in most medical/paramedical curricula, perpetuating knowledge gaps and hindering the development of prevention-oriented teaching and care strategies for primary care. The World Health Organization introduced in the International Classification of Diseases 11th Revision sleep/wake-disorders as a holistic 24/7 concept, which allows primary physicians to step in as gatekeepers. This highlights the important role of public health messaging and prevention. In this context, the CR2S initiative addresses the critical public health and primary care gap by embedding paediatric and perinatal sleep health into research and education with knowledge dissemination at the community-level. Our endeavour will support developing new strategies for harmonizing outcome measures and revisiting traditional curriculum concepts, thus

improving early recognition of SDDs and supporting sustainable, prevention-oriented health care delivery, which is more cost-effective than the current subspeciality focus.

Presenting Author
Jun Chun Ting Au (Canada)

Authors
Indra Narang (Canada); Jun Au (Canada); Aditi Garg (Canada); Lena Xiao (Canada); Sanjay Mahant (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P02

Title
Continuous Positive Airway Pressure (CPAP) vs High Flow Nasal Cannula (HFNC) for the Treatment of OSA in Children (CHOSA Trial)

Introduction
Continuous positive airway pressure is the standard non surgical therapy for pediatric obstructive sleep apnea, yet home adherence is often low. Heated humidified high flow nasal cannula therapy uses a soft loose fitting nasal cannula and can generate positive airway pressure. CHOSA will evaluate whether heated high flow therapy used in the home setting improves adherence and related outcomes compared with CPAP in children with moderate to severe obstructive sleep apnea.

Materials and Methods
CHOSA is a pragmatic multicentre two arm parallel group randomized controlled trial in Canadian paediatric sleep centres. The planned sample size is 258 children aged 2 to 18 years with obstructive apnea hypopnea index at least 5 events per hour on diagnostic polysomnography within 6 months who are clinically recommended to start CPAP. Key exclusions include hypoventilation, central apnea index at least 5 per hour, need for ventilation with a rate, prior pneumothorax or pneumomediastinum, uncontrolled gastroesophageal reflux or vomiting, uncontrolled oral secretions, and prior CPAP or high flow use in the last 12 months. After consent, baseline questionnaires and anthropometrics are collected and participants are randomized 1 to 1 in REDCap with site stratification and variable blocks. Participants are informed both therapies treat obstructive sleep apnea. Families receive device education and fitting with a brief awake trial, followed by a 2 week home acclimatization period. Overnight titration polysomnography occurs within 4 weeks to prescribe settings using age based adequacy criteria. Participants then use assigned therapy at home for 3 months with respiratory therapist support and follow up at 3 months. Analysis will follow intention to treat principles.

Results

Recruitment has not yet started. The primary endpoint is adherence, defined as average nightly minutes of assigned device use over the 3 month home therapy period, measured from objective device downloads. Secondary outcomes include quality of life, symptoms, sleep quality, psychosocial functioning, caregiver burden, adherence barriers, and cost effectiveness assessed using validated questionnaires. A qualitative subgroup interview in about 10 percent of participants will explore comfort, barriers, and facilitators to therapy use.

Conclusions

CHOSA will generate pragmatic randomized evidence on whether heated humidified high flow nasal cannula therapy used in the home setting for 3 months improves adherence compared with CPAP in children who require non surgical therapy for obstructive sleep apnea, and how adherence relates to patient and caregiver outcomes and cost effectiveness.

Acknowledgements

We thank the CHOSA investigators, participating site teams, and patient and family partners. Fisher and Paykel Healthcare is providing high flow devices as in kind support and has no role in study design, data collection, analysis, interpretation, or publication decisions.

Presenting Author
Jung Hyun CHANG (South Korea)

Authors
Jung Hyun CHANG (South Korea); Donghyeok KIM (South Korea); Min Young SEO (South Korea); Seung Hoon LEE (South Korea)

Presentation Day and Board Number
Saturday, April 11, 2026 | P71

Title
Hypoxic Burden Across AHI-Based Severity Groups in Pediatric Obstructive Sleep Apnea

Introduction
Pediatric obstructive sleep apnea (OSA) is diagnosed using lower apnea–hypopnea index (AHI) thresholds than adult OSA because children are more vulnerable to the adverse effects of intermittent hypoxemia. However, AHI reflects event frequency alone and does not account for the depth or duration of oxygen desaturation. As a result, cumulative hypoxic stress during sleep may be underestimated in pediatric patients. Hypoxic burden, integrating both the depth and duration of desaturation events, may provide complementary physiological information. To evaluate hypoxic burden across AHI-based severity groups in pediatric OSA and to determine optimal hypoxic burden cut-off values using pediatric diagnostic thresholds.

Materials and Methods
Sixty-five children who underwent overnight polysomnography were retrospectively analyzed. Participants were classified into AHI-based severity groups (normal, mild, moderate, and severe). Hypoxic burden normalized to total sleep time (HB_TST) was compared across groups using median-based analyses. Receiver operating characteristic (ROC) analysis was performed to identify optimal HB cut-off values for pediatric OSA defined by AHI thresholds of ≥1, ≥5, and ≥10 events/h.

Results
Median HB_TST increased stepwise across AHI-based severity groups (Kruskal–Wallis test, p

Conclusions
Hypoxic burden increases progressively with OSA severity and accurately identifies pediatric OSA even at the diagnostic threshold of AHI ≥1. These findings support hypoxic burden as a complementary biomarker to AHI for early detection and severity assessment in pediatric OSA.

Presenting Author
Karissa Vallera (Canada)

Authors
Karissa Vallera (Canada); Malka Hershon (Canada); Marjolaine Chicoine (Canada); Karine Dubois-Comtois (Canada); Marie-Julie Béliveau (Canada); Phyllis Zelkowitz (Canada); Marie-Hélène Pennestri (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P90

Title
The Association between Feeding Method and Fathers' Sleep

Introduction
The transition to parenthood is often regarded as an exciting but stressful period for the family unit, marked by many adaptations and changes. As sleep-wake cycles develop for infants, parental sleep also undergoes fluctuations, with more fragmented sleep, often in response to their child's needs, such as to feed. Breastfeeding is known to be associated with infant and maternal fragmented sleep, but the literature examining its role in paternal sleep is quite limited, mixed, and requires longitudinal follow-up. Thus, the aim of this research is to investigate the association between infant feeding method at 3 months and paternal sleep at 3 and 6 months postpartum.

Materials and Methods
The present results are part of a larger study investigating sleep from pregnancy to 6 months postpartum. Present preliminary results include data from 24 fathers, with measurements at both 3 and 6 months. Recordings of a prospective 7-day sleep diary were used to calculate means of fathers' nocturnal sleep duration, the longest period of consecutive sleep, and the number of nocturnal awakenings. The Sleep Practice Questionnaire was used to assess child feeding method (breastfed vs. bottle fed) and sleeping arrangements (solitary sleep, room sharing, or bedsharing). The Edinburgh Ante/Postnatal Depression Scale was used to measure paternal depressive symptoms. Multiple regressions were conducted to investigate the associations between breastfeeding status at 3 months and sleep variables, controlling for sleeping arrangements and depressive symptoms.

Results
Multiple regressions revealed associations between infant breastfeeding status at 3 months and paternal sleep at both 3 and 6 months. Having a breastfed infant at 3 months was

associated with longer father's nocturnal sleep duration at 3 months (β = 0.26, b = .74, SE = .36, p = .04), longer periods of fathers' consecutive sleep at 6 months (β = .26, b = 1.21, SE = .58, p = .037) and less nocturnal awakenings in fathers at 6 months (β = -.26, b = -.45 SE = .16, p = .004).

Conclusions

This study presents preliminary results of one of the few datasets documenting longitudinal associations between infant feeding method and paternal sleep. Results show longer sleep duration and less fragmented sleep in fathers with a breastfed child, compared to fathers of infants who are not breastfed. Future studies should explore this association using objective measures of sleep, such as actigraphy, in larger samples. These preliminary results suggest that breastfeeding may act as a protective factor for fathers' sleep; whether this is related to fathers' implication in nocturnal feeding practices remains to be clarified.

Acknowledgements

This research was undertaken, in part, thanks to funding from the Canada Research Chairs Program and the Canadian Institutes of Health Research.

Presenting Author
Kasey Fullwood (Australia)

Authors
Kasey Fullwood (Australia); Grace Langdon (Australia); Isha Shin (Australia); Fiona Hudson (Australia); Moya Vandeleur (Australia); Karen Waters (Australia); Jasneek Chawla (Australia)

Presentation Day and Board Number
Friday, April 10, 2026 | P91

Title
The impact of sleep problems on daytime functioning outcomes in children with neurodisability and their caregivers

Introduction
Children with neurodisability (ND) represent a group of acquired or congenital conditions that impact functioning. Sleep problems are substantially more common in children with ND (80%) compared to typically developing (TD) children (40%), in which sleep problems often resolve with minimal intervention. In ND, however, sleep difficulties are multifactorial and chronic. While poor sleep in TD children has been linked to reduced daytime functioning, behavioural difficulties, and lower parent wellbeing, the impact of sleep problems on children with ND and their caregivers is not well understood. This study aimed to investigate the relationship between self-reported child sleep measures and outcomes for children and their caregivers.

Materials and Methods
Caregivers completed self-report measures as part of a baseline assessment for a larger randomised controlled trial. Measures included the Child Sleep Habits Questionnaire (CSHQ), Paediatric Quality of Life Inventory (PedsQoL), Depression Anxiety and Stress Scale (DASS-21), Child Affect and Parent Efficacy Scale- Disability (CAPES-DD) alongside a demographic questionnaire. Eligible participants included children aged 2-18 years with a neurodisability diagnoses and their primary caregiver. Neurodisability diagnoses were grouped into five broad groups: Genetic, Developmental, Neurological and Neurometabolic. Statistical analysis included descriptive statistics, Pearson's Correlations and one-way Anova.

Results
Forty-five participants (Mean age= 7.4yrs) completed questionnaires. Developmental Conditions was the most prominent ND group (58%) followed by Genetic (31%), Neurological (6%) and unspecified (4%). Under half had comorbid diagnoses of visual (29%), hearing

(29%), motor (29%) and intellectual impairments (47%). Most children (82%) were on regular medications for their ND conditions, with majority either on, or had trialled melatonin (84%). Comorbid respiratory problems were common (58%) and 47% engaged with ENT services. Total CHSQ scores highlighted clinically significant sleep problems (M=60) with all child scores above the clinical threshold of 41. A one-way ANOVA showed no statistical difference between ND condition groups and CHSQ scores, highlighting the type of sleep problems experienced are similar regardless of their diagnosis. Pearson correlations indicated that higher total CHSQ scores were associated with lower emotional functioning and greater externalising and internalising problems in children. The daytime sleepiness subscale correlated with reduced emotional functioning, while shorter sleep duration was linked to poorer emotional functioning and more externalising and internalising difficulties. Among caregivers, higher total CHSQ scores were associated with greater depression, anxiety, and stress scores, alongside a decreased quality of life. Daytime sleepiness was additionally related to reduced parental emotional functioning. Shorter sleep duration in the child was associated with higher caregiver depression, lower emotional functioning, and a reduced perceived efficacy in managing children's externalising behaviours.

Conclusions

Sleep problems were highly prevalent and did not differ across all ND groups. Our findings indicate that sleep problems may influence child emotional and behavioural functioning, alongside caregiver emotional functioning, mental health and quality of life regardless of the aetiology for the child's ND. These conclusions are novel and to our knowledge are the first published evidence describing the same relationships between self-reported child sleep measures and outcomes for children and their caregivers across a broad ND population.

Presenting Author
Kasey Fullwood (Australia)

Authors
Kasey Fullwood (Australia); Grace Langdon (Australia); Moya Vandeleur (Australia); Karen Waters (Australia); Jasneek Chawla (Australia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P15

Title
Non-sleep specialist allied health and medical clinicians perspectives of assessment and management of sleep problems in children with neurodisability

Introduction
Sleep difficulties are highly prevalent among children with neurodisability (ND). These difficulties arise from a combination of condition-related factors, behavioural influences and environmental contributors, and may involve respiratory or non-respiratory sleep problems. As children with neurodisability are supported by a wide network of medical and allied health providers, sleep-related concerns commonly emerge in routine clinical interactions across many disciplines. Yet, little is known about how clinicians outside of sleep medicine understand or approach these concerns. This study investigates the challenges, barriers and solutions that non-sleep specialist paediatric clinicians, and allied health, encounter for assessment and management of sleep problems in children with ND.

Materials and Methods
A cross-sectional survey was conducted across three tertiary paediatric hospitals and within the community in Australia. Participants included medical staff (consultants and paediatric advanced trainees), senior nursing staff and allied health (psychology, occupational therapy, physiotherapy, speech therapy) working in paediatric specialties other than sleep medicine. The survey included free text responses, multiple choice questions and case studies. Data analysis included descriptive statistics and thematic analysis of free text responses.

Results
One hundred and fifteen clinicians participated. A large proportion of clinicians (80%) identified sleep difficulties as a substantial concern for children with neurodisability, describing sleep issues as commonly discussed by families in both routine and acute care settings. However, most participants (70%) reported using informal assessment strategies, with minimal uptake of validated sleep screening instruments. Eighty-nine percent of medical

specialists reported routinely providing caregivers with advice and support regarding sleep, yet many indicated limited training and low confidence in this area. Barriers include limited clinician training, time constraints, fragmented service pathways, and caregiver capacity and burden, compounded by gaps in knowledge and access to reliable resources. For medical clinicians time constraints were significant and there was support for national guidelines to promote a more consistent and structured approach to sleep assessment and management in children with neurodisability. Allied health clinicians indicated limits in knowledge and awareness of sleep problems, limited access to services and fragmented care pathways, particularly for those in regional areas. Additionally, caregiver capacity to consistently engage with sleep strategies was identified as a barrier and identified the need for accessible educational resources.

Conclusions

Sleep problems are widely recognised by non-sleep-specialist medical and allied health clinicians as a significant concern for children with neurodisability, yet assessment and management practices remain inconsistent with identification of a number of barriers to delivery of care. The need for the development of national treatment guidelines was confirmed, along with access to educational tools, and improved service coordination to support clinicians in assessing and managing sleep problems in this population.

Presenting Author
Kate Ching Ching Chan (Hong Kong)

Authors
Kate Ching Ching Chan (Hong Kong); Tingting Chen (Hong Kong); Ming YangEbe Tsz Yau Jan (Hong Kong); Joseph Tsun (Hong Kong); Maggie Haitian Wang (Hong Kong); Christopher Koon Chi Lai (Hong Kong); Chun Ting Au (Canada); Albert Martin Li (Hong Kong)

Presentation Day and Board Number
Friday, April 10, 2026 | P92

Title
Metabolomic Profiling in Children with Obstructive Sleep Apnoea: An Exploratory Case-Control Study

Introduction
Paediatric obstructive sleep apnoea (OSA) is associated with systemic inflammation, neurocognitive impairment, and cardiometabolic risk. Non-invasive biomarkers are needed to improve diagnosis and monitor treatment response. Urine metabolomics provides a potential avenue for biomarker discovery in children. Our study aimed to explore differences in urine metabolomic profiles between children with OSA and matched controls using untargeted metabolomics.

Materials and Methods
We conducted an exploratory case-control study involving 40 children aged 6–11 years: 20 with polysomnography-confirmed OSA and 20 age- and sex-matched controls without OSA. Morning urine samples were analysed using liquid chromatography–mass spectrometry. Data preprocessing included normalisation and log transformation, as well as Pareto scaling. Partial least squares discriminant analysis (PLS-DA) and orthogonal partial least squares discriminant analysis (OPLS-DA) were performed to assess group separation, and univariate tests identified differentially abundant metabolites (false discovery rate < 0.05). Pathway enrichment analysis was conducted using the KEGG database.

Results
Twenty children with OSA (mean age 8.9 ± 1.4 years, 14 boys, median obstructive apnoea hypopnoea index 2.6 [IQR 1.7-20.2] events/hour), and 20 controls were included in the analysis. PLS-DA and OPLS-DA revealed partial separation between the OSA and control groups, suggesting distinct metabolic signatures. Sixteen metabolites were significantly different between the two groups. They were primarily involved in amino acid metabolism,

such as tyrosine, fatty acid metabolism, and phenylpropanoid biosynthesis. Enrichment analysis revealed perturbations in tyrosine and tryptophan biosynthesis, tyrosine metabolism, and cofactor biosynthesis pathways.

Conclusions

Children with OSA exhibit distinct urinary metabolomic profiles compared to controls, highlighting potential biomarkers and metabolic pathways associated with disease pathophysiology. These findings warrant validation in larger cohorts.

Acknowledgements

We gratefully acknowledge the support provided by the Health and Medical Research Fund, Health Bureau (Reference number: 10210376). We also extend our heartfelt thanks to the children and families who participated in the research.

Presenting Author
Kate Maston (Australia)

Authors
Kate Maston (Australia); Aliza Werner-Seidler (Australia); Malcolm Gillies (Australia)

Presentation Day and Board Number
Friday, April 10, 2026 | P93

Title
Insomnia symptom trajectories during adolescence: a longitudinal investigation exploring risk and protective factors

Introduction
The aim of this study was to identify heterogeneous insomnia symptom trajectories in a population cohort of adolescents during a developmentally sensitive window (ages 13–17), and to examine the influence of individual, social, and environmental predictors on these different trajectories.

Materials and Methods
Insomnia symptoms were assessed in a population-based sample of 6377 adolescents via online questionnaires administered annually at school from grade 8 (age 13–14) to grade 11 (age 16–17). Measures assessing individual, social, and environmental predictors were administered in grade 8 only. We used latent class growth analysis to identify insomnia symptom trajectories and multinomial logistic regression to examine individual, social, and environmental predictors associated with each trajectory class.

Results
We identified four insomnia symptom trajectories: one “low risk” trajectory (low-stable 55.73%), two “elevated risk” trajectories (increasing 27.49% and high-stable 10.95%), and one “remitting” trajectory (high-decreasing 5.83%). Predictors common to elevated risk trajectories (vs low-stable) were female gender, greater internalizing or externalizing symptoms, and greater negative family interactions. Adolescents with high-stable trajectories were also more likely to be gender diverse or diagnosed with ≥1 disabilities, while adolescents with increasing trajectories were more likely to have ≥1 adverse childhood experiences or lower school connectedness. Male gender was the only predictor significantly associated with a remitting trajectory (vs high-stable).

Conclusions
These findings inform future research about the developmental course of insomnia symptoms

during adolescence and can guide screening and intervention efforts aimed at improving sleep health for youth at risk of insomnia.

Acknowledgements

I would like to acknowledge the students and school communities who participated in this study, my coauthors, and the funders (National Health and Medical Research Council, Australia).

Presenting Author
Kate Maston (Australia)

Authors
Kate Maston (Australia); Aliza Werner-Seidler (Australia); Jess Godward (Australia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P16

Title
Sleep Ninja® for the Classroom: Pilot study and evaluation of a sleep education program for early high school students in Australia

Introduction
Many adolescents do not meet recommended sleep guidelines for their age group. Despite this, students receive little sleep education via the current school curriculum. Responding to the need for a curriculum-aligned sleep education program for Australian schools, we developed Sleep Ninja® for the Classroom, which aims to increase high school students' knowledge of sleep health and motivate students to make sleep-related behaviour changes. The program was developed using a participatory design approach, consulting teachers, students, and parents to inform content, delivery, and sustainability. Interventional content was adapted from the Sleep Ninja® app, an evidence-based, self-directed digital intervention for adolescents based on cognitive behavioural therapy for insomnia (CBT-I). Elements of CBT-I appropriate for a universal classroom setting were included in the educational program. The aims of this pilot study were to investigate the implementation of Sleep Ninja® for the Classroom with grade 7-8 students in their regular health classes, assess preliminary effects on students' sleep knowledge and behaviour, and evaluate the program's acceptability, appropriateness, and feasibility for teachers and students within the Australian educational context.

Materials and Methods
Participants were teachers (N=12) and students in grades 7 and 8 (N=428) across four high schools located in Sydney, Australia. The study involved a single-arm design, where all students received the sleep education program, and pre- and post-program measures of student sleep knowledge and behaviour were compared. The evaluation included post-program measures of student- and teacher-rated acceptability and appropriateness, teacher-rated feasibility, and teacher feedback interviews.

Results

Preliminary findings showed improvements in students' sleep knowledge, satisfaction with current sleep pattern, reduced frequency of daytime napping, and small changes in weekend rise time (Mean=25-min earlier) and weeknight bedtime (Mean=6-min earlier). No changes were observed in other aspects of sleep hygiene, nor in students' weekend bedtime or weekday rise time. Program evaluation data showed high acceptability, with most students reporting that the lessons were relevant and interesting, and all teachers agreeing that the program was appropriate and feasible to implement at school. Post-program interviews with teachers suggested some refinements such as developing a structured student workbook and incorporating additional interactive elements to further enhance student engagement.

Conclusions

This study provides preliminary evidence for an Australian curriculum-aligned sleep education program that is acceptable to teachers and students, with positive effects on students' sleep knowledge, satisfaction, and behaviours. Further controlled studies are now needed to investigate whether Sleep Ninja® for the Classroom provides long term benefits for student sleep health, and to evaluate whether the program can be effectively and sustainably implemented in Australian schools.

Acknowledgements

I thank the teachers, students, and school communities who participated in this study. I acknowledge Ms Beverley Laing, curriculum developer, and Ms Aja Bongiorno, graphic designer, for their contributions in creating the educational resources, as well as my coauthors and the funders of this work (nib Foundation, Australia).

Presenting Author
Lauren Shelley (United Kingdom)

Authors
Lauren Shelley (United Kingdom); Bethan Cornick (United Kingdom); Jane Waite (United Kingdom); Emilia Cole (United Kingdom); Sena Mine Yolartıran (United Kingdom); Georgie Agar (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P96

Title
Characterising Sleep in Children with SATB2-Associated Syndrome: An Integrated Objective and Subjective Approach

Introduction
SATB2-associated syndrome (SAS) is a rare neurogenetic disorder characterised by intellectual disability, absent or delayed speech, and craniofacial anomalies. Sleep difficulties are prevalent in SAS, yet their presentation, correlates, and impact on families remain poorly understood. This study aims to provide a comprehensive characterisation of sleep in children with SAS by integrating caregiver-reported questionnaires, qualitative interviews, and objective assessment via actigraphy.

Materials and Methods
Caregivers of 57 children with SAS (Mage = 9.76 years; 60% male) completed standardised questionnaires assessing sleep and clinical outcomes, including adaptive ability, behaviours that challenge, executive functioning, mood, and pain or discomfort. Caregivers of 96 typically developing children (Mage = 7.58 years) completed a questionnaire measure of sleep. Cross-group comparisons examined the severity of sleep difficulties between children with SAS and typically developing children, and associations with clinical outcomes were explored. Semi-structured interviews were conducted with caregivers of 19 children with SAS (Mage = 9.08 years; 74% male) who met clinical threshold for sleep difficulties, exploring changes in sleep over time, impacts on the child and family, caregiver management strategies, and experiences seeking support. A subset of 22 children with SAS (Mage = 9.48 years; 61% male) completed home-based actigraphy (MotionWatch 8) across an average of 10 nights, providing objective assessment of sleep duration, sleep onset latency, and wake after sleep onset.

Results
Questionnaire data indicated that 88% of children with SAS met clinical threshold for sleep

difficulties, with greater severity of night-wakings, parasomnias, and reduced sleep duration than typically developing peers. Delayed sleep behaviours (bedtime resistance, sleep onset delay, and sleep anxiety) were associated with poorer executive functioning, anxiety, and compulsive behaviours, whereas disrupted sleep (night wakings, parasomnias, sleep-disordered breathing) was linked to self-injury and pain or discomfort. Interviews corroborated these findings: night wakings (84%), restlessness (68%), and reduced sleep duration (63%) were common concerns. Sleep difficulties typically persisted, though presentation shifted over time. Caregivers reported impacts on child fatigue, behaviour, and emotions, as well as wide-reaching family effects, particularly caregiver sleep deprivation. Actigraphy confirmed reduced sleep duration relative to age-based recommendations and elevated wake after sleep onset (mean 80 minutes/night). Some children also experienced prolonged sleep onset latency of up to 45 minutes. Management strategies included environmental adaptations, behavioural interventions, and medication, with mixed reports of effectiveness. Access to sleep support was limited, with barriers including dismissed concerns and lack of tailored interventions.

Conclusions

Sleep difficulties in children with SAS are highly prevalent, multifaceted, and have substantial impact on families. Distinct correlates for delayed versus disrupted sleep suggest different underlying mechanisms and intervention needs. Integrating caregiver-reported, qualitative, and objective actigraphy data highlights the value of a comprehensive, multi-method assessment to guide tailored interventions for children and families. Further investigation is warranted to clarify the aetiology of sleep difficulties in SAS.

Acknowledgements

This work was funded by the Baily Thomas Charitable Fund. We wish to thank all the families who participated for generously sharing their experiences and perspectives.

Presenting Author
Liat Tikotzky (Israel)

Authors
Liat Tikotzky (Israel); Yael Porat (Israel)

Presentation Day and Board Number
Friday, April 10, 2026 | P113

Title
Infant Sleep Quality Predicts Changes in Temperament Across the First Year of Life: A Longitudinal Study

Introduction
Sleep and temperament are cornerstones of early development, with each linked to later socioemotional and behavioral outcomes. During the first year of life, infant sleep undergoes rapid consolidation, while temperament (defined as biologically based individual differences in reactivity and regulation) also shows meaningful developmental change. Although substantial research documents associations between infant sleep problems and "difficult" temperament, most studies rely on cross-sectional or unidirectional longitudinal designs, primarily using parent reports, leaving the directionality of these links unresolved. Moreover, few studies have examined whether these associations reflect stable between-infant differences or dynamic within-infant processes. The aim of the present study was to address these gaps by investigating bidirectional longitudinal associations between infant sleep and temperament across the first year of life, with an emphasis on within-person effects.

Materials and Methods
Participants were 232 Israeli families recruited during pregnancy and followed longitudinally when infants were 4, 8, and 12 months old. Infant sleep was assessed over seven nights at each wave using both actigraphy and maternal sleep diaries, yielding indices of sleep duration, minutes wake after sleep onset (WASO), and subjective sleep quality (rated on a 1–10 Likert scale: 1 = very poor; 10 = excellent”). Infant temperament was assessed via maternal report using the Infant Characteristics Questionnaire (ICQ), focusing on the Fussy and Unpredictable subscales. To disentangle stable between-person differences from within-person fluctuations over time, Random Intercept Cross-Lagged Panel Models (RI-CLPMs) were fitted.

Results
Preliminary correlations showed concurrent associations between poorer reported sleep

quality and higher fussiness and unpredictability, whereas actigraphy-based measures showed no significant associations. RI-CLPM analyses revealed significant within-person concurrent associations between poorer sleep quality or higher WASO and greater fussiness and unpredictability, most prominently at 8 months. Importantly, several significant cross-lagged within-person effects emerged from diary-based sleep measures to temperament, but not vice versa. Specifically, lower ratings of infant sleep quality at 4 months predicted higher unpredictability at 8 months ($\beta = -0.23$, $p = .04$), and lower sleep quality at 8 months predicted higher unpredictability at 12 months ($\beta = -0.57$, $p = .007$), with no evidence for effects in the opposite direction. Similarly, greater WASO at 4 months predicted increased unpredictability at 8 months ($\beta = 0.25$, $p = .020$), with a marginal effect from WASO at 8 months to unpredictability at 12 months ($\beta = 0.35$, $p = .076$). No significant between-person associations were observed, indicating that infants who slept worse on average across infancy were not consistently rated as more temperamentally difficult.

Conclusions

The study demonstrates that, at the level of intra-individual change, disruptions in early reported sleep quality predict subsequent increases in infant behavioral unpredictability across the first year of life, highlighting sleep as a potential driver, rather than a consequence, of emerging temperamental regulation. Accordingly, the findings suggest that interventions targeting infant sleep may play a role in supporting early behavioral development.

Acknowledgements

We wish to thank all participating families and all the students that helped with data collection.

The study was supported by the Israel Science Foundation (Grant

number 345/15"

Presenting Author
Lisa Brunel (France)

Authors
Camille Bertin (France); Julie Cassibba (France); Laurianne Coutier (France)

Presentation Day and Board Number
Friday, April 10, 2026 | P30

Title
An overview of the use of respiratory support at home in children - patients and families point of view

Introduction
Home ventilatory support is increasingly used in children with chronic respiratory conditions. Understanding patients' and families' perspectives is essential to improve adherence, manage complications, and enhance quality of life.

Materials and Methods
A prospective single-center study was conducted involving 30 pediatric patients using home ventilatory support. Patients and their families were interviewed using structured questionnaires assessing sleep, symptoms, quality of life, technical issues, side effects, economical obstacle and compliance. Perceptions of treatment success were measured using Likert scales.

Results
Parents reported ventilatory support as successful in 66.7% of cases, with a median success score of 5/5 [4–5]. 93% of the participants noted symptoms improvement following initiation of ventilatory support. 80% experienced complication related to ventilatory support. The median ventilatory support usage time of 9h. There was no economic brake reported. The patients who did not consider the ventilatory support as a success had type 3 Obstructive Sleep Apnea Syndrome for 90% of them, and their mean age was 10 years old.

Conclusions
While home ventilatory support was perceived positively by pediatric patients and their families, and enabled symptoms improvement; attention must be paid to managing complications, technical issues and supporting adherence. The study highlights the importance of education, close support and multidisciplinary follow-up to optimize treatment outcomes and avoid long-term health consequences. A further multicenter study is planned to strengthen these findings.

Presenting Author
Lucie Malevergne (France)

Authors
Lucie Malevergne (France); Alice Desforges (France); Stéphanie Mazza (France); Amandine E. Rey (France)

Presentation Day and Board Number
Saturday, April 11, 2026 | P19

Title
Effect of napping on sustained attention: developmental trajectories from 3 to 6 years old

Introduction
Between 3 and 6 years of age, children progressively transition from biphasic to monophasic sleep, with considerable individual variability in the timing of this transition. Sustained attention undergoes development during this period and is particularly sensitive to sleep-wake patterns. As children are transitioning away from napping, individual sleep needs may moderate the effects of napping on attention. This study examines whether napping frequency moderates the impact of a nap on sustained attention.

Materials and Methods
A longitudinal study was conducted with 53 children aged 3 to 6 years, assessed at up to 6 time points over a two-year period, in five preschools in France. At each time point, children underwent from actigraphic recording for ten consecutive days, including one day with experimental manipulation of nap presence or absence. Children were randomly assigned to either a nap or a wake condition, with this assignment maintained across all assessment time points. Children completed assessments of sustained attention (with a continuous performance test) before and after nap or wake conditions. Nap frequency was calculated as the proportion of days with naps during this 10-day period. Linear mixed models tested whether attentional performance was modulated by nap frequency. Child was included as a random effect to account for repeated measures.

Results
At the first assessment (T1), children napped on average 72% of days per week, which progressively declined to 33% at the final assessment (T6). The effect of nap on attentional performance varied according to nap frequency, with opposite patterns observed for false alarms and omissions. For false alarms, which reflect impulse control, children with high nap

frequency showed an increase after remaining awake compared to the nap condition, whereas children with low nap frequency showed an increase following a nap period ($\beta = 8.87$, $p = .01$). For omissions, which reflect vigilance, the pattern was reversed: children with high nap frequency showed a greater omission increase after a nap, whereas children with low nap frequency showed greater increases after remaining awake ($\beta = -11.12$, $p < .01$).

Conclusions

This longitudinal study shows that the effects of napping on sustained attention performance in early childhood depend not only on developmental stage but also on napping frequency. In habitual nappers, remaining awake during the afternoon was associated with increased false alarms, suggesting reduced inhibitory control under high sleep pressure. Conversely, having a nap was associated with increased omissions, possibly reflecting sleep inertia or reduced arousal. In children who nap only occasionally, napping in the afternoon appears to disrupt attentional functioning rather than improve it. However, the increase in omissions after an afternoon without a nap suggests reduced vigilance later in the day. This indicates that, although these children are generally less dependent on naps, they may still show attentional vulnerabilities when wakefulness is prolonged. Overall, these findings indicate that the effect of napping on sustained attentional depend on the alignment between nap opportunities and children's developmental stage and habitual sleep patterns during the transition toward nap cessation.

Presenting Author
Lucy Wolfe (Ireland)

Authors
Lucy Wolfe (Ireland); Dr. Lisa O'Rourke Scott (Ireland); Dr. Nuala Finucane (Ireland)

Presentation Day and Board Number
Saturday, April 11, 2026 | P20

Title
Sleepless Inheritance. An Interpretative Phenomenological Analysis of Continuity, Change, Maternal Adequacy and Moral Decision-Making around Infant Sleep in Irish Mother-Daughter Dyads

Introduction
Infant sleep is a central concern for new parents, influencing not only child development but also parental well-being, identity, and family relationships. Sleep arrangements and practices are deeply embedded within socio-cultural norms, transmitted and adapted across generations. Intergenerational perspectives offer a rich lens for understanding how parenting beliefs and practices around sleep are maintained, reshaped, or resisted over time. Interpretative Phenomenological Analysis (IPA) is well suited to exploring the lived experience of infant sleep in an intergenerational context. IPA prioritizes personal meaning-making and embodied experience (Smith, Flowers, & Larkin, 2009), allowing the researcher to interpret how participants make sense of emotionally significant events. This study brings together joint interviews from eleven mother–daughter dyads.

Materials and Methods
Design: A qualitative, idiographic approach using IPA was employed to capture the complexity of individual and shared meaning-making around infant sleep. Participants: Eleven mother–daughter dyads participated, each consisting of an adult daughter currently parenting an infant under 18 months, and her mother reflecting on her own maternal experiences.

Data Collection: Semi-structured joint interviews explored recollections of infant sleep, current challenges, perceived influences, support networks, and the impact of sleep disruption on identity and daily functioning.

Analysis: Following Smith et al. (2021), analysis involved iterative reading, detailed noting (descriptive, linguistic, conceptual), development of emergent themes, clustering into superordinate themes, and integration across cases. Given the dyadic format, attention was paid to how each participant’s account was shaped by and responded to the other."

Results

Initial findings: Four unique and interrelated personal experiential themes emerged from the analysis:

1. The continuity and adaption of parenting values and practices.

This theme illuminates continuity and adaptation of parenting values, routines of care, and sleep practices across generations. Influenced by the woman's own cognitions, individual sleep physiology, capacity, individual temperament and that of the child, amidst the backdrop of changing socio-economic conditions and cultural shifts.

2. Moral negotiations around sleep training and settling.

This theme explores the moral, embodied and emotional work that is undertaken when women engage in decisions and practices to settle their baby to sleep. Many of the women entered their motherhood with strong preconceptions about "right" and "wrong", "good or "bad" sleep management and approaches.

3. Sleep as identity work.

From the transcripts, sleep is identified as not just a biological or logistical issue, it emerges as identity work. A space wherein, mothers and their daughters actively construct, defend and necessarily transform their sense of self. Mothers and their daughters narrate their own adequacy through sleep experiences in contexts saturated with moral and cultural meaning.

4. The embodied nature and temporal aspects of sleep disruption

Sleep deprivation is narrated as a fully embodied experience. Mothers express physical, emotional, rhythmic disruption as they navigate through the days with a baby who does not sleep. They situate themselves within temporal horizons, using the past, the present along with the anticipated future, to make sense and meaning of the embodied suffering and continued adaptations.

Conclusions

While much research on infant sleep focuses on either contemporary parenting experiences or historical accounts, there has been limited qualitative work exploring direct intergenerational comparisons between mothers and daughters. Whilst we know that cultural norms around infant sleep has shifted, there is little empirical insight into how core parenting values are maintained and adapted when viewed through the lens of two lived maternal experiences within the same family. In addition, studies tend to examine moral debates about sleep training in contemporary contexts, but few explore how these moral framings have emerged historically and how they differ between women parenting before and after the rise of sleep training discourse. Maternal identity transformation under sleep deprivation is under-researched with existing literature treating maternal sleep disruption as an outcome, neglecting the subjective, embodied dimensions and how they shape maternal worth, as well as sleep choices, across generations.

Acknowledgements

Social Sciences ConneXions Research Institute

Presenting Author
MAHAM HASSAN (Germany)

Authors
MAHAM HASSAN (Germany); Saskia Koller (Germany); Annkathrin Gies (Germany); Axel R. Franz (Germany); Johanna Catharina Brückner (Germany); Vadim Förster (Germany); Christian F. Poets (Germany); Cornelia Wiechers (Germany); Mirja Quante (Germany)

Presentation Day and Board Number
Saturday, April 11, 2026 | P21

Title
Activity profile of school-aged children born preterm and its association with sleep

Introduction
Disturbance in sleep and physical activity behaviors in childhood can lead to long-term adverse health consequences. Children born preterm are at a uniquely higher risk as prematurity tends to contribute towards several cardiometabolic, physical and behavioral problems in later life. Sleep and activity in former preterm born children are reported to be different than their term counterparts but their interrelationship has hardly been studied in this population. We aimed to determine both, sleep and physical activity, and their association in a cohort of very preterm born school-aged children in Germany.

Materials and Methods
A cross-sectional analysis was done in a cohort of 6- to 10-year-old children (N=235) born at <32 weeks' gestation at the Department of Neonatology, University of Tübingen. Actigraphy was used to measure sleep and activity profiles objectively. Information on prematurity and demographic variables was obtained from patient records and questionnaires. T-test or Mann Whitney U-test and Spearman-correlations were used to compare various parameters across gestational age. Similarly, sleep was compared across high and low activity using median as cut-off for moderate to vigorous physical activity (MVPA) levels. We also created multi-variable regression models to look further into the associations of sleep and physical activity.

Results
The mean daily sleep duration was 8.5 (SD: ±0.7) hours, with only 24.2% achieving the recommended 9 hours. Similarly, only 24.7% of the cohort achieved daily recommendations of at least 60 minutes MVPA. Mean axis 1 counts per minute (CPM) differed based on gestational age with children born < 28 weeks' gestation exhibiting significantly higher activity counts. Children with more time in MVPA showed significantly lower sleep efficiency as

compared to those with less time in MVPA (mean difference=2%, Cohen's D=0.45). Regression analysis also showed lower axis 1 CPM (Beta coefficient: -9.7, CI: -17.8 to -1.6) and less time in light activity (Beta coefficient: -2.0 CI: -3.5 to -0.5) with higher sleep efficiency.

Conclusions

Former preterm children at school age do not meet recommended normal levels of sleep and physical activity. Moreover, poor sleep quality is associated with increased activity in very preterm born children. This increased activity might actually be due to the higher fidgety behavior common in such children. It could point towards the modulating role of sleep quality in hyperactivity disorders that are highly prevalent with very premature birth. Sleep interventions and measures to detect and ameliorate hyperactivity traits may be warranted in preterm born children from an early age.

Acknowledgements

This study was sponsored by the Medical Faculty of the University of Tübingen through the Applied Clinical Research Program (AKF), grant number 491-0-0. Dr. Wiechers and Dr. Quante were supported by scholarships of the Medical Faculty of the University of Tübingen (Tübingen Program for the Advancement of Women in Science (TüFF) [CW] and Tübingen Advanced Clinician Scientist Program, grant no. 531-0-0 [MQ]). The other authors report no conflicts of interest.

Presenting Author
Mahtab Matin (Canada)

Authors
Mahtab Matin (Canada); Elizabeth Keys (Canada); Merilee Brockway (Canada); Jannette Festival (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P22

Title
Associations Between First-Week Supplementation Type and Sleep Behaviors in Infants Exposed to Intrapartum Antibiotics at 6, 12, & 24 Weeks of Age: Preliminary result from a pilot randomized controlled trial

Introduction
Infant feeding types, like donor human milk (DHM), formula milk, or exclusive breastfeeding (EBF), may influence early sleep patterns through influences of bioactive components such as probiotics, prebiotics, and hormones in the milk that support the developing gut microbiome and impact gut–brain signaling and circadian development (Schoch et al., 2022). However, direct evidence comparing how these feeding types influence infant sleep remains limited (Matin et al., 2024). This pilot randomized controlled trial addresses this gap by examining how different early feeding types relate to sleep behaviours in full-term newborns exposed to intrapartum antibiotic prophylaxis (IAP) for Group B Streptococcus (GBS) during labor across the first six months of life.

Materials and Methods
This study is part of a larger, single site randomized controlled trial. Eligible participants included postpartum individuals who received IAP for GBS, vaginally delivered a full-term infant, and planned to breastfeed. Parent-infant dyads were randomized to receive formula milk or DHM if supplementation in the first week of life was required; EBF infants were retained in the study as an observational group. Sixteen infants (n=16) received DHM and 17 infants received formula in the first 7 days of life, while 46 were EBF. Infant sleep was measured using the Brief Infant Sleep Questionnaire-Revised Short Format at 6, 12, and 24 weeks. A linear mixed-effects model was used to evaluate longitudinal changes between and within groups.

Results
Mean maternal age was 32.7 years (4.4 years), and gestational age was 39 weeks and 6 days

(7days). Average infant birth weight was 3256.4 grams (424.6 g) and 59.2% of infants were male.

Findings showed expected infant sleep maturation over time. Across feeding groups, infants showed progressive sleep consolidation, with the longest nighttime sleep stretch increasing by 6–7 minutes per week. Preliminary findings suggest infants who received DHM group had the fastest consolidation, while those in the EBF group showed the greatest reduction in awakenings and the most stable sleep–wake patterns. The formula milk group followed a slightly slower sleep developmental pattern, taking about 6 minutes longer to fall asleep and sleeping approximately 40 minutes more during the day but 30 minutes less at night compared with infants receiving human milk. DHM and EBF infants were more likely to fall asleep by themselves between weeks 6–24, with approximately 50% and 30% of infants falling asleep by themselves respectively by week 24. In contrast, only 8.3% of infants in the formula milk group fell asleep by themselves by 24 weeks. Formula-fed infants also co-slept more frequently with parents between 6–24 weeks.

Conclusions

This pilot trial demonstrates preliminary findings which suggest clinically significant differences in early sleep between feeding groups. Infants receiving DHM and EBF showed more independent sleep behaviours by sleeping by themselves and steadier consolidation. However, infants supplemented with formula milk followed a slightly slower trajectory with more co-sleeping and daytime sleep, potentially reflecting parental responses to more fragmented sleep or feeding needs. Additional analyses incorporating microbiome data and additional co-variates may clarify whether these preliminary sleep patterns reflect underlying microbial or metabolic differences. Larger trials, informed by parent advisory committee input, are needed to confirm and explain these trends and to further explore how early feeding shapes infant sleep during the early postpartum period.

Presenting Author
Malin Jakobsson (Sweden)

Authors
Elizabeth Thalin (Sweden); Gunilla Björling (Sweden); Amir Pakpour (Sweden); Karina Huus (Sweden); Anders Broström (Sweden); Staffan Bengtsson (Sweden); Marit Eriksson (Sweden); Malin Jakobsson (Sweden)

Presentation Day and Board Number
Saturday, April 11, 2026 | P24

Title
Hopeful yet conflicted: Adolescents' Expectations and Concerns Prior to Later School Start Times

Introduction
Adolescence is characterised by a biologically driven shift towards later sleep–wake timing, which often conflicts with early school start times. Insufficient sleep in this age group has been associated with impaired well-being, mental health difficulties, and reduced academic functioning. Delaying school start times has therefore been proposed as a structural intervention to better align school schedules with adolescents' circadian rhythms. While international research suggests potential benefits of later school start times, empirical evidence from the Swedish context remains limited. Moreover, adolescents' own perspectives prior to implementation are rarely explored, despite being central to the successful adoption of such changes. The present study aimed to illuminate adolescents' expectations and concerns regarding the introduction of later school start times.

Materials and Methods
The study included 314 adolescents aged 13–15 years (52% girls) from two secondary schools in Sweden. Both schools planned to delay the school start time by one hour, beginning in August 2024. Data were collected between June and August 2024, prior to the implementation of the new schedule. Twenty-eight adolescents participated in individual semi-structured interviews, and an additional 286 responded to a single open-ended survey question. Data were analysed using inductive qualitative content analysis, allowing categories to emerge from adolescents' own descriptions and reflections.

Results
Adolescents' expectations and concerns were summarised into four categories. Participants expected later school start times to lead to altered morning routines, including reduced stress

and a calmer start to the day. They also anticipated improved well-being and performance during the school day, such as increased alertness, concentration, and mood. At the same time, adolescents expected changes in leisure time, describing a perceived trade-off between having more energy after school and experiencing less free time due to longer school days. Finally, adolescents reflected on the overall impact on sleep, expressing hopes for longer sleep duration while also questioning whether later bedtimes might offset potential benefits. Across all categories, adolescents expressed both enthusiasm and apprehension, highlighting a nuanced ambivalence towards the upcoming change.

Conclusions

Prior to implementation, later school start times were largely viewed positively by adolescents, particularly in relation to reduced morning stress, improved sleep, and enhanced daytime functioning. However, concerns regarding longer school days and potential reductions in leisure time were also prominent. This ambivalence underscores both opportunities and challenges associated with delaying school start times. From a practical perspective, involving adolescents, parents, and school staff in planning such changes may support a smoother adaptation. Follow-up research is needed to explore adolescents' lived experiences after implementation and to assess whether anticipated benefits are realised.

Acknowledgements

We gratefully acknowledge the participating schools for inviting the research team to evaluate the introduction of later school start times. We also sincerely thank the adolescents who shared their perspectives. This study was supported by the School of Health and Welfare at Jönköping University and by funding from Stiftelsen Tornspiran, Lia & Erik von Sydows Stiftelse, and Ebba Danelius Stiftelse.

Presenting Author
Marcus O. Harrington (United Kingdom)

Authors
Marcus O. Harrington (United Kingdom); Alice Tunks (United Kingdom); Clare Dixon (United Kingdom); Mary John (United Kingdom); Maria E. Loades (United Kingdom); Jessica L. Hamilton (United Kingdom); Vlad Costin (United Kingdom); Faith Orchard (United Kingdom)

Presentation Day and Board Number
Saturday, April 11, 2026 | P25

Title
A pilot feasibility cluster-randomised controlled trial of sleep workshops in secondary schools; analysis of sleep diaries and actigraphy data

Introduction
As few as 30% of adolescents get the recommended amount of sleep on school days, and reduced sleep is a predictor of depression. Growing evidence suggests sleep interventions could improve both sleep and depression in adolescents, and might therefore provide a promising avenue for early intervention. Cognitive-Behavioural Therapy for Insomnia (CBT-I) is the gold standard for improving sleep. However, traditional CBT-I is time-consuming. Group-based low-intensity CBT-I could be a cost-effective way of providing treatment at scale, consistent with the UK government initiative of providing low-intensity interventions for mild to moderate mental health problems in schools.

Materials and Methods
The iBLISS study is a pilot feasibility cluster-randomised control trial that delivered CBT-I-based workshops to secondary school students. The trial arms include an immediate intervention arm and a delayed arm. The primary aim of the trial was to assess the acceptability and feasibility of delivering these brief, scalable workshops in schools. The workshops were co-designed with adolescents, parents and sleep medicine experts. During the trial, students were screened for sleep difficulties and, if eligible, took part in a three-session workshop delivered by Mental Health Support Teams (MHSTs). The study's secondary aim is to collect pilot data on measures of sleep (assessed via questionnaires, sleep diaries, and actigraphy watches), depression, and anxiety; and to evaluate the mechanisms proposed to change via the intervention, including dysfunctional sleep beliefs and pre-sleep arousal. Outcomes were measured before and after the intervention, with 3-month follow-up assessments.

Results

42 adolescents (Mean age=13.95 years, SD=0.99; 71% Female; 74% White) were eligible and consented to take part in the study, with n=40 retained at post-treatment. 95% attended at least two of the three workshops. Mean PSQI and ISI scores at baseline reflected the sub-clinical eligibility criteria (PSQI Mean=8.03, SD=3.33; ISI Mean=11.69, SD=3.71). Process evaluation revealed that adolescents found the workshops to be a meaningful and useful learning experience that changed their sleep. Analysis of questionnaire data indicated a small-to-moderate effect size pre- to post-treatment for improvement in sleep quality. This poster will focus on the pre- to post-treatment sleep diary and actigraphy data. We will report on the acceptability and feasibility data, and pre- to post-mean differences will be examined in the form of effect sizes with 95% confidence intervals.

Conclusions

School-based sleep workshops for insomnia appear to be acceptable to young people and feasible to deliver. This intervention has the potential to improve access to effective, evidence-based strategies for improving sleep and wellbeing among young people.

Presenting Author
maria olga retamal (Chile)

Authors
Jovita Corzo (Chile); maria olga retamal (Chile); Pablo Brockmann (Chile); Tomas Mesa Latorre (Chile); Gabriela Repetto (Chile)

Presentation Day and Board Number
Friday, April 10, 2026 | P86

Title
Congenital Central Hypoventilation Syndrome in Chile: Clinical Analysis and Genotypic Variability

Introduction
Congenital Central Hypoventilation Syndrome (CCHS) is a rare disorder of the autonomic nervous system (ANS) and respiratory control. It typically manifests in the neonatal period with hypoventilation, hypoxemia, and hypercapnia that worsen during sleep due to chemoreceptor insensitivity. This life-threatening condition is primarily caused by pathogenic variants in the PHOX2B gene, which encodes a transcription factor essential for ANS development. While global literature attributes 90% of cases to polyalanine repeat expansion mutations (PARM), this study presents the first formal report of CCHS in South America, revealing a unique Chilean epidemiological and phenotypic profile

Materials and Methods
This descriptive study analyzed the clinical backgrounds of four Chilean patients with genetically confirmed CCHS. Genetic testing was conducted using bidirectional Sanger sequencing and fluorescent PCR on extracted DNA to identify PHOX2B variants. The study evaluated four representative patients (ages 8 to 31) based on their genetic variant, age of onset, ventilatory support needs (NIV or IMV), and autonomic comorbidities

Results
The Chilean cases demonstrate significant heterogeneity that challenges standard global expectations:

Genetic Profiles: PARM variants identified included genotypes 20/25, 20/26, 20/27, and 20/31.

Clinical Diversity: Unlike the isolated hypoventilation often described in literature, these patients exhibited a wide spectrum of autonomic dysfunction.

Comorbidities: Hirschsprung disease was found in 75% of the studied cases (3 out of 4). Other symptoms included thermoregulation issues, hyperhidrosis, syncope, and neurocognitive delays.

Ventilatory Support: There was no strict linear correlation between the expansion size and clinical severity. For instance, a patient with a 20/31 genotype maintained adequate functionality with NIV during sleep, while a 20/27 patient required permanent invasive mechanical ventilation (IMV)

Conclusions

CCHS is currently underestimated in Chile. This study highlights that Chilean patients often present with systemic, varied symptoms involving multiple neural crest-derived organs rather than simple respiratory failure. While this initial report details four cases, there are currently 30 identified patients in Chile undergoing evaluation to build a comprehensive national profile. High clinical suspicion and early diagnosis are vital to improving the quality of life and reducing morbidity in the region.

Acknowledgements

We sincerely thank the families of the Reinspira Foundation, South America's first CCHS patient organization, for their vital support and commitment to advancing research and care for our patients

Presenting Author
Maria Polselli (Italy)

Authors
Maria Polselli (Italy); Mariaelena Romeo (Italy); Martina Proietti Checchi (Italy); Alessandra Voci (Italy); Massimiliano Valeriani (Italy); Luigi Mazzone (Italy); Romina Moavero (Italy)

Presentation Day and Board Number
Saturday, April 11, 2026 | P26

Title
Assessment of sleep knowledge and habits among young adults: can we talk about a “knowledge-practice gap”?

Introduction
Sleep is a fundamental determinant of health, essential for physical, mental, and emotional development, particularly during adolescence. During this phase, biological and neurobiological factors converge into what literature defines as the ""perfect storm"": circadian drives delay sleep onset, while school schedules mandate early waking, leading to chronic sleep deprivation. Despite the criticality of this phenomenon, studies on sleep awareness in late adolescence remain limited. Assessing the awareness and implementation of sleep hygiene is crucial for adolescent well-being, given the higher probability of shifts in sleep patterns and negative hygiene practices during this period.

Objectives: The primary aim of this study was to evaluate sleep-related knowledge and habits in a sample of Final-year secondary school students. Secondary objectives included assessing the relationship between theoretical knowledge and actual practices, exploring the association between sleep quality and hygiene habits, and analyzing differences in awareness based on demographic variables.

Materials and Methods
A cross-sectional observational study was conducted using an anonymous online questionnaire (Google Forms). The tool comprised eight sections, including ad hoc questions on sleep knowledge and information exposure, along with two standardized scales: the Sleep Hygiene Index (SHI) to measure behaviors and the Sleep Beliefs Scale (SBS) to evaluate beliefs.

Results
Among the 466 enrolled subjects (median age 19.0 years, SD 1.03; 70% female), only 56% reported receiving information on sleep hygiene (33% of whom within a school context),

compared to 96% for sports and 77% for nutrition. While 60% consider sleep ""fundamental"" and 85% correctly identify the recommended sleep duration for their age, only 36% report actually achieving adequate sleep hours.

Regarding timing, 41% go to bed between 11:00 PM and 12:00 AM during the week, while nearly half the sample (46%) retires after 1:30 AM on weekends. Only 11% (n=53) reported a total absence of difficulty initiating sleep, while only 18% reported no nocturnal awakenings. Standardized results revealed that only 10% fall into the ""good"" sleep hygiene category (SHI score ≥ 40), despite 97.2% demonstrating sufficient knowledge (SBS score ≥ 7).

Furthermore, females reported significantly higher SHI scores than males ($p = 0.039$), indicating poorer sleep hygiene. While the effect size was modest ($d = 0.21$), the difference was statistically significant. In terms of awareness of the adverse consequences of poor sleep quality, non-cognitive effects were poorly understood: 66% did not recognize the association with increased cardiovascular risk. Conversely, cognitive effects were far more evident to the sample, with 93% correctly identifying the detrimental impact on concentration."

Conclusions

These data highlight a marked gap between theoretical awareness and practical conduct. Limited school exposure to sleep hygiene programs, combined with the discrepancy between knowledge and habits, underscores the urgent need for preventive interventions. These should move beyond mere information delivery toward behavioral modification strategies to mitigate long-term health risks in young adults.

Presenting Author
Mariaelena Romeo (Italy)

Authors
Mariaelena Romeo (Italy); Maria Polselli (Italy); Martina Proietti Checchi (Italy); Alessandra Voci (Italy); Massimiliano Valeriani (Italy); Luigi Mazzone (Italy); Romina Moavero (Italy)

Presentation Day and Board Number
Saturday, April 11, 2026 | P27

Title
Sleep literacy in university students: knowledge, beliefs and predictors of accurate sleep perceptions.

Introduction
Despite sleep being vital for overall health, many adults maintain irregular habits and hold misconceptions about it. This study investigated sleep knowledge, bedtime behaviors and beliefs in a sample of university students. We also examined their associations with sociodemographic variables and identified predictors of more accurate sleep-related beliefs.

Materials and Methods
A total of 566 students (80.7% female; mean age = 25.3 ± 7.79 years) completed an anonymous online questionnaire. Participants were enrolled in various degree programs, primarily in health sciences and education-related fields. The survey included the Sleep beliefs Scale-SBS (score range 0–20), sleep knowledge items, sleep habits items and attendance of sleep-related courses (42.4% of participants, 2.9 ± 6.8 hours). Due to non-normal distributions, group comparisons were conducted using Mann–Whitney U tests. Spearman's rho assessed associations between SBS score and sleep habit indicators. A multiple linear regression model was performed with SBS score as the dependent variable and sleep knowledge, age, gender, and attendance of sleep-related courses as predictors.

Results
The mean SBS score was 14.2 ± 2.72, indicating a moderate-to-high level of sleep beliefs. No significant differences in SBS scores were observed between sexes (Mann–Whitney U = 22679, $p = .240$), nor between participants who had attended sleep-related courses and those who had not (Mann–Whitney U = 35967, $p = .131$). SBS scores were significantly associated with several sleep habit indicators. Higher SBS scores were related to earlier bedtimes on both weekdays ($\rho = -0.112$, $p = .008$) and weekends ($\rho = -0.104$, $p = .014$), and to lower smartphone use in bed ($\rho = -0.098$, $p = .020$). No significant associations were observed with sleep

duration, morning restfulness, sleep onset difficulties, nocturnal awakenings, or smartwatch use. This pattern suggests that holding more accurate sleep-related beliefs does not necessarily translate into globally healthier sleep habits. The multiple regression model was significant ($R = 0.339$; $R^2 = 0.115$), explaining 11.5% of the variance in SBS scores. Independent predictors of higher SBS scores were greater sleep knowledge ($\beta = 0.207$, $p < .001$) and older age ($\beta = 0.259$, $p < .001$). Attendance of sleep-related courses was not a significant predictor.

Conclusions

Sleep-related beliefs were moderately accurate and demonstrated selective associations with behavioral indicators of sleep self-regulation. The weak and domain-specific nature of these associations indicates that accurate beliefs do not uniformly translate into healthy sleep practices. Moreover, the lack of an effect of course attendance, despite formal exposure to sleep topics, suggests that current educational approaches may be insufficient or inadequately structured to promote meaningful behavioral change. These findings challenge purely informational models of sleep education and support the integrative interventions that combine belief restructuring with behaviorally oriented strategies to foster sustainable sleep health.

Presenting Author
Mariana Coelho (United States)

Authors
Mariana Coelho, MD (United States)

Presentation Day and Board Number
Friday, April 10, 2026 | P114

Title
Non-Pharmacologic Sleep Interventions in Children with Neurologic and Neurodevelopmental Disorders: A Scoping Review

Introduction
Sleep disturbances are highly prevalent in children with neurologic and neurodevelopmental disorders and contribute to worsened cognitive, behavioral, and family outcomes. While pharmacologic therapies are commonly used, non-pharmacologic sleep interventions are increasingly recommended as first-line strategies. However, the scope and characteristics of this literature across pediatric neurologic populations have not been systematically mapped.

Materials and Methods
We conducted a scoping review to identify non-pharmacologic sleep interventions in pediatric populations with neurologic or neurodevelopmental disorders. A comprehensive search of PubMed, Lens.org (as an Embase proxy), and Semantic Scholar was performed. More than 800 records were screened at the title and abstract level for pediatric age, neurologic or neurodevelopmental diagnosis, and use of non-pharmacologic sleep interventions. Data were abstracted at the abstract level to characterize intervention types, populations studied, and reported sleep outcomes.

Results
Over 100 abstract-level studies met inclusion criteria. Identified interventions included behavioral and parent-based sleep programs, sleep hygiene education, sensory-based approaches (e.g., weighted blankets and environmental modifications), physical activity–based interventions, and multimodal programs. Most studies focused on children with autism spectrum disorder and attention-deficit/hyperactivity disorder, with fewer studies addressing epilepsy, cerebral palsy, and other pediatric neurologic conditions. Substantial heterogeneity was observed in intervention design, outcome measures, and study methodology.

Conclusions
The literature on non-pharmacologic sleep interventions in pediatric neurologic and

neurodevelopmental populations is substantial but highly heterogeneous. Evidence is concentrated in select diagnostic groups, with notable gaps in neurologic conditions beyond autism and ADHD. This scoping review highlights opportunities for standardized outcome measures, broader inclusion of neurologic populations, and implementation-focused research to guide clinical sleep care in pediatric neurology.

Presenting Author
Marina Foresti dos Santos (Brazil)

Authors
Marina Foresti dos Santos (Brazil); Eder Leandro da Silva Dantas (Brazil); Tabata Luna Garavazzo Tavares (Brazil); Paula Azevedo Kageyama Longo (Brazil); Amanda Póvoa de Paiva (Brazil); Fernando Gustavo Stelzer (Brazil); Alan Luiz Eckeli (Brazil)

Presentation Day and Board Number
Saturday, April 11, 2026 | P29

Title
Beyond Obesity: Sleep-Disordered Breathing Spectrum in Pediatric ROHHAD Syndrome

Introduction
ROHHAD syndrome (Rapid-onset Obesity with Hypothalamic Dysfunction, Hypoventilation, and Autonomic Dysregulation) is a rare condition with approximately 200 cases described worldwide. The clinical spectrum of ROHHAD syndrome is highly heterogeneous, making diagnosis especially challenging and largely reliant on clinical expertise. Rapid-onset obesity (RO), typically manifesting between ages 2 and 7, is often the first clinical sign, soon followed by sleep-disordered breathing. Patients initially present with obstructive sleep apnea (OSA), which progressively evolves to central hypoventilation as the disease advances. These respiratory disturbances are frequent and significantly contribute to morbidity, frequently causing episodes of nocturnal desaturation and cyanosis that may worsen into daytime hypoventilation and even cardiorespiratory arrest. The potential severity of these complications underscores the importance of early polysomnographic evaluation, comprehensive multidisciplinary care, and rigorous follow-up in affected children.

ROHHAD diagnosis is difficult due to clinical variability and the lack of specific genetic markers. Recent evidence suggests anti-ZSCAN1 antibodies may serve as useful biomarkers. Management is mainly symptomatic and personalized, with close respiratory monitoring because of the high risk of cardiorespiratory arrest. Due to its complexity and mortality, standardized protocols and systematic follow-up are vital, especially in under-resourced settings.

Materials and Methods
This observational, descriptive case series uses retrospective data from electronic medical records of patients suspected of ROHHAD syndrome at a tertiary hospital in Brazil (2010–

2025). Inclusion requires identified search terms and confirmed clinical suspicion. Exclusion applies to insufficient data or discarded cases.

Results

We identified six suspected ROHHAD cases; two were excluded (one due to a genetic cause and another due to a primary obesity diagnose). Four cases were confirmed:

Case 1: GEAF, female, 3 years old, deceased 2019 due to cardiac arrest secondary to severe dengue. Presented with RO, OSA with an obstructive apnea-hypopnea index (OAHI) of 6, using CPAP. Genetic tests were negative. Hormonal deficiencies included TSH, GH, and cortisol.

Case 2: MCLC, female, 10 years old, with RO and confirmed central sleep hypoventilation by capnography and hypoxemia. Tracheostomized, on BiPAP, with diabetes insipidus, bradycardia, ocular movement disorders, neuroendocrine tumor (ganglioneuroblastoma), diffuse nonspecific encephalopathy, and negative genetic testing.

Case 3: AGAL, male, 5 years old, RO beginning at age 3, OSA with nocturnal hypoxemia suggestive of hypoventilation (OAHI 1.4, Spo2<90% in 12% of the night), diffuse nonspecific encephalopathy, thermal instability, negative genetic workup for other causes, awaiting anti-ZSCAN1 antibody results.

Case 4: AAPS, male, 10 years old, RO from age 5, OSA (OAHI 3.8), precocious puberty, cortisol deficiency, epilepsy, positive anti-ZSCAN1 antibodies.

Most cases featured OSA, underlining the importance of rigorous follow-up and treatment of sleep-disordered breathing in this population.

Conclusions

We identified four cases of ROHHAD syndrome in our institution, emphasizing the critical importance of early diagnosis and continuous follow-up. Sleep-disordered breathing, particularly evolving from obstructive sleep apnea to central hypoventilation, is a major cause of morbidity and mortality in these patients. Vigilant respiratory monitoring and multidisciplinary management are essential to improve outcomes and prevent life-threatening complications.

Acknowledgements

We thank the Hospital das Clínicas of the Ribeirão Preto Medical School and the Departments of Sleep Medicine and Pediatric Neurology for their support.

Presenting Author
Maristella Lucchini (United States)

Authors
Shambhavi Thakur (United States), Carmela Alcantara (United States), Sarah Berger (United States), Monica Ordway (United States), Natalie Barnett (United States), Maristella Lucchini (United States)

Presentation Day and Board Number
Friday, April 10, 2026 | P105

Title
Immigrant Generational Status and Its Associations With Objective Infant Sleep and Maternal Sleep Quality

Introduction
Prior research shows that sleep duration and sleep quality differ across racial, ethnic, and immigrant groups, and that acculturation-related stressors may shape these disparities. However, little is known about how these differences emerge in the perinatal period. This study examined whether immigrant generational status is associated with infants' objectively measured sleep and mothers' sleep quality, providing an intergenerational view of sleep health within immigrant families.

Materials and Methods
Participants were 1,274 mothers of infants aged 0–24 (mean 10.07±6.8) months residing in the US. Generational status was defined as follows: first-generation (n = 134) mothers were those not born in the United States (US), and second-generation (n = 183) were those born in the US with at least one parent born outside the US. Non-immigrant mothers (n = 957, mean age 34±4.6 years) were those born in the US to US-born parents. Participants were predominantly White (72%), with additional representation from multiracial (10%), Asian (6%), Hispanic/Latino (7%), Black (3%) and 1% other. Household income was relatively high, with over 55% earning above $150,000 annually. Infant sleep metrics were measured using Nanit autovideosomnography, including total sleep time (TST), night wakings, and parent nighttime crib visits. Parental sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI). Generational differences in infant sleep were examined with linear regressions, while generational differences in parental sleep were examined using ANCOVAs, always adding child age (in months) as a covariate.

Results

Generational differences were seen in mothers' sleep quality. Second-generation mothers reported poorer overall PSQI scores compared to non-immigrant mothers (β= -1.124, SE = 0.323 p=0.002), while first-generation mothers did not differ from either group. Second-generation mothers reported poorer subjective sleep quality (β= -0.190,SE = 0.067 p=0.014) than non-immigrant mothers. First-generation mothers showed the longest sleep latency, with higher latency than both non-immigrant mothers (β=0.293, SE = 0.102, p=0.011) and second-generation mothers (β= -0.465,SE = 0.129, p< 0.001). For sleep duration, both first-generation (β= -0.326,SE = 0.084, p

Conclusions

The findings on maternal sleep indicate that immigrant mothers exhibited poorer sleep profiles compared to their non-immigrant counterparts. Notably, the infant sleep results mirror this pattern: second generation infants, those born to first generation mothers, experienced shorter and more fragmented sleep. This pattern may reflect direct and indirect exposures to immigration-related stressors that often intersect with socioeconomic, neighborhood and other structural factors. Given the importance of adequate sleep for long-term health, this co-occurrence of poorer sleep outcomes across generations, and potential heightened risk of adverse sleep for the second generation, highlights a potential intergenerational transmission of vulnerability within immigrant minority communities.

Presenting Author
Marjeta Peperko (Slovenia)

Authors
Marjeta Peperko (Slovenia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P30

Title
SLEEP HABITS AND PSYCHOSOCIAL DETERMINANTS OF SLEEP HABITS OF ADOLESCENTS IN CELJE MUNICIPALITY

Introduction
Sleep is one of the building blocks of health, influencing our quality of life at every stage. Adolescents are particularly sensitive when it comes to sleep as adolescence is a period of growth and development. Healthy sleep in this period is extremely important, yet adolescents on average do not get enough of it. Sleep deprivation in adolescence is a serious public health challenge that requires appropriate attention. It is therefore necessary to investigate sleep behaviour and psychosocial determinants that influence it, with the ultimate goal of improving their sleep health. For research purposes, translated and validated questionnaires are required. The results of the study can be used to develop cross-sectoral interventions that take into account the perspectives of adolescents, parents and teachers.

Materials and Methods
Translation, cultural adaptation and validation of the Paediatric Sleep Practices Questionnaire (PSPQ), and of the Psychosocial Determinants of Sleep Behaviour and Healthy Sleep questionnaire (PSD). A cross-sectional online epidemiological study was conducted among 369 eight-graders in February 2024 in the Municipality of Celje, Slovenia.

Results
We obtained the Slovenian versions of the questionnaires: PSPQ-SI and PSD-SI that are both substantively valid and reliable. The Cronbach's α coefficient was suitably high for both questionnaires, amounting to 0.702 for PSPQ-SI and 0.798 for PSD-SI. The results of the study (N=356, mean age 13.4±0.55 years, 49.2% female) showed that eight-graders in Celje do not getting enough sleep (66,5 %) and have inconsistent sleep schedules (91,8 %). The observed population of adolescents is characterized by late bedtimes (68,0 %) and extended sleep on weekends (39,3 %). Most of the surveyed adolescents use screens just before bedtime (97,5 %), use them excessively in their free time, and are not sufficiently physically active (70,7 %).

The adolescents surveyed have a positive attitude toward the observed dimensions of healthy sleep and perceive parental encouragement to go to bed on time, however parents do not set rules regarding appropriate bedtimes.

Conclusions

The validated Slovenian questionnaires are reliable tools suitable for research and clinical applications among adolescents. To improve sleep behaviours and sleep health, and consequently the overall health and well-being of adolescents, effective public health interventions that continuously address adolescents, parents and teachers are required.

Acknowledgements

I sincerely thank my mentor, Assoc. Prof. Dr. Andreja Kukec, and my co-mentors, Asst. Res. Anja Strmšek and Asst. Res. Ajda Mlakar for their excellent mentorship. My deep gratitude goes to Prim. Nuša Konec Juričič the members of the NASPAN.si project and to the National Institute of Public Health for their support I also extend my sincere thanks to the principals of the participating primary schools in Municipality of Celje and to the pupils for completing the questionnaire.

Presenting Author
Marjolaine Chicoine (Canada)

Authors
Christine Laganière (Canada); Marjolaine Chicoine (Canada); Hélène Gaudreau (Canada); John Lydon (Canada); Michael Meaney (Canada); Marie-Hélène Pennestri (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P42

Title
Preschoolers' sleep problems: associations with maternal mood and subjective maternal sleep quality

Introduction
Children's sleep problems are frequent complaints from parents. While several studies report associations between infant sleep problems and parents' mood and sleep quality, few studies have assessed these associations during the preschool years. Most of these studies had a low sample size and did not control for relevant confounders such as family socioeconomic status. Importantly, during the preschool period, children start experiencing a wider variety of sleep problems than in infancy. However, most previous studies mostly considered only one type of sleep problem at a time. The objective of the present study is to investigate what types of preschoolers' sleep problems are specifically associated with either maternal mood or maternal subjective sleep quality.

Materials and Methods
Participants were mother-child dyads (N=345) enrolled in the Maternal Adversity, Vulnerability and Neurodevelopment (MAVAN) longitudinal cohort study. Mothers reported on their child's sleep patterns (Children Sleep Habits Questionnaire) at ages 4 and 5 years. At those same time points, mothers also provided sociodemographic information, completed a validated depression scale (CES-D), and reported on their own subjective sleep quality over the last month on a 4-point Likert scale (1-Very good, 2-Fairly good, 3-Fairly bad, 4-Very bad). Generalized Estimating Equation (GEE) models were used to assess the associations between preschoolers' sleep problems and maternal depressive symptoms, while controlling for family socioeconomic status, child's sex, and maternal sleep quality. GEE models were also used to assess the associations between preschoolers' sleep problems and maternal sleep quality, while controlling for family socioeconomic status, child's sex, and maternal depressive symptoms.

Results

Results show that more night awakenings, bedtime resistance, and sleep anxiety in children were associated with poorer maternal sleep quality ($p<0.001$, $p=0.027$, $p=0.037$) but not with maternal mood ($p>0.05$). In contrast, shorter or inconsistent sleep duration, longer sleep onset delay, and the presence of parasomnias in children were associated with poorer maternal mood ($p=0.037$, $p=0.015$, $p=0.013$) but not with maternal sleep quality ($p>0.05$).

Conclusions

These results show that different types of preschoolers' sleep problems are specifically associated with either decreased maternal mood or decreased maternal sleep quality while adjusting for each other. Sleep problems associated with maternal sleep quality (i.e., night wakings, bedtime resistance, and sleep anxiety) may have direct impacts on maternal sleep given the parental involvement needed at bedtime and during nocturnal awakenings, reducing or fragmenting maternal sleep window. The association between sleep duration, sleep onset delay, and parasomnias in children and maternal mood may be partially explained by shared genetic or environmental factors. Overall, further research is needed to better understand the mechanisms linking specific children's sleep problems to maternal mood and-or sleep and the direction of these associations across development.

Acknowledgements

The authors would like to thank all the families, staff, and students involved in the MAVAN cohort. We also recognize the support of the Canada Research Chair in Pediatric Sleep (CIHR, Tier II).

Presenting Author
Marjolaine Chicoine (Canada)

Authors
Marjolaine Chicoine (Canada); Michelle Ly (Canada); Karine Dubois-Comtois (Canada); Marie-Julie Béliveau (Canada); Marie-Hélène Pennestri (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P31

Title
Comparing sleep diaries and actigraphy to assess night-to-night variability of sleeping through the night

Introduction
Sleeping through the night has been operationalized using varied definitions but it is often defined as either 6 or 8 hours of consecutive nocturnal sleep. While there is a common belief that infants should “sleep through the night" by six months of age, recent studies have shown important variability from one infant to another. In addition, sleep is also known to vary significantly from night to night in infancy, but there is a lack of studies assessing this variability using both subjective and objective measures of sleep across several nights. Consequently, the aim of this study was to describe night-to-night variability in achieving 6 or 8 hours of consecutive sleep over two weeks in 6-month-old infants, using subjective and objective measures of sleep.

Materials and Methods
Forty-three (21 girls) 6-month-old infants were included in the present study. Sleep was recorded during a two-week period using both subjective (maternal-reported sleep diaries) and objective (actigraphy) measures. Mothers were asked to complete a sleep diary during two weeks by shading 15-minute periods when their infant was asleep. For actigraphy data, minute-by-minute epochs were analyzed using an activity level of 80 to discriminate between active and rest periods. The mean longest consecutive sleep duration for all nights was compared between sleep diaries and actigraphy. Then, two criteria were used to determine if infants were sleeping through the night: 6 and 8 hours of consecutive sleep. The percentage of nights where the criterion was reached for each infant during the two-week period was also calculated for both sleep diaries and actigraphy.

Results
Although the mean subjective and objective longest consecutive sleep durations were

modestly correlated (r = .30), it was significantly lower for sleep diaries than actigraphy (5.72±2.20 hours vs. 8.17±1.84 hours, p

Conclusions

Sleeping through the night appears to be a developmental process that is highly sensitive to operational definitions and measurement tools. Differences between subjective and objective measures may lead to diverse interpretation of infant sleep consolidation process, underscoring the need for consensus in defining and assessing sleeping through the night in infancy.

Acknowledgements

This research was undertaken, in part, thanks to funding from the Canada Research Chairs Program and the Social Sciences and Humanities Research Council (SSHRC).

Presenting Author
Marta Celmina (Latvia)

Authors
Marta Celmina (Latvia); Antra Kisele (Latvia); Una Purvina (Latvia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P32

Title
SUBJECTIVE SLEEP EXPERIENCE AND OBJECTIVE MEASURES: A COMPARISON OF PATIENT SELF-ASSESSMENT AND MULTIPLE SLEEP LATENCY TEST OUTCOMES

Introduction
Excessive daytime sleepiness is common in children and adolescents, yet accurate assessment remains challenging. Young patients often have difficulty recognizing whether they have actually fallen asleep or entered rapid eye movement (REM) sleep. This study aimed to evaluate the concordance between subjective self-reports of sleep and dreaming and objective findings obtained during the multiple sleep latency test (MSLT).

Materials and Methods
We conducted a retrospective analysis comparing objective MSLT parameters (sleep onset and REM sleep latency) with subjective patient reports of falling asleep and dreaming. Children and adolescents who underwent overnight polysomnography followed by MSLT at the Children's Clinical University Hospital between 2020 and 2025 were included.

Results
Sixty-eight patients aged 8–18 years were analyzed. Subjective perception of falling asleep or staying awake was fully concordant with objective MSLT findings in only 51.8% of patients. In the remaining cases, patients reported staying awake despite objective evidence of sleep. Discrepancies occurred in one nap in 21.4% of patients, two naps in 12.5%, three naps in 10.7%, four naps in one patient, and all five naps in one patient.

Subjective reports of dreaming corresponded with objective REM sleep in 61.8% of patients. However, 38.2% reported dreaming in one to three naps without objective REM sleep. Additionally, 12.7% of patients denied dreaming despite objective confirmation of REM sleep during naps.

Conclusions
Subjective perception of sleep onset and dreaming frequently differs from objective MSLT

findings in children and adolescents. These results highlight the limited reliability of self-reported sleep experiences in this population and underscore the importance of objective testing when evaluating excessive daytime sleepiness and suspected sleep disorders.

Presenting Author
Marta Moraleda-Cibrián (Spain)

Authors
Marta Moraleda-Cibrián (Spain); Débora Itzep-Pérez (Spain); Ana Colmenares-Alvarado (Spain); Ariadna Ramírez-Mallafré (Spain); Neus Baena-Diez (Spain); Maria Lorenzo-Ruiz (Spain); Julian Lara-Herguedas (Spain); Gemma Iglesias-Escalera (Spain); Rosario Cazorla-Calleja (Spain); Ana Roche-Martínez (Spain)

Presentation Day and Board Number
Saturday, April 11, 2026 | P33

Title
Objective baseline assessment of Sleep problems in children with Angelman Syndrome: A follow-up Study

Introduction
Angelman syndrome (AS) is a rare congenital neurodevelopmental disorder characterized by developmental delay, epilepsy, absent speech, motor impairment, and a characteristic happy demeanor. Sleep disturbances affect up to 80% of children with AS and negatively impact quality of life for patients and families. Despite known circadian dysfunction linked to UBE3A loss, a key factor in this neurodevelopmental disorder, detailed objective characterization of sleep abnormalities in this population is limited. Therefore, the aim of the present study was to objectively assess sleep problems in children with AS and compare findings with the parent-reported sleep problems.

Materials and Methods
Families of children with AS followed at two national reference centers were invited to participate in this observational study. Children will be followed for two years, with sleep assessments at baseline and at 6, 12, and 24 months. Inclusion criteria were ages 1 to 18 years, both sexes, and a genetically confirmed diagnosis of AS; the underlying genetic mechanism was recorded for all participants. Objective sleep assessment was performed using an actigraphy, worn on the non-dominant wrist for two consecutive weeks. Subjective sleep disturbances were evaluated using the validated Sleep Disturbance Scale for Children (SDSC), completed by parents.

Results
Twenty-two children and adolescents with AS completed the baseline assessment (mean age 7.6 ± 4.1 years; 50% female). Deletion was the most common genetic mechanism, accounting

for 59% of cases. According to the SDSC, disorders of initiating and maintaining sleep were reported by 75% of families, whereas only 14% of participants met criteria for elevated global score. Actigraphy revealed that total sleep time (TST), relative to age-specific minimum recommendations from the National Sleep Foundation, was reduced in 36% of participants, within the normal range in 59%, and prolonged in 5%. Wake after sleep onset (WASO) exceeded 30 minutes in 59% of cases. Additionally, 41% exhibited a delayed sleep phase, while only 5% showed advanced sleep offset. Daytime napping was observed in 36% of patients. Notably, children under three years of age had significantly reduced mean TST and increased nighttime awakenings compared with older children, with no significant differences in WASO. Boys tended to have lower TST than girls, although these differences were not statistically significant. Compared with children with uniparental disomy or imprinting defects, those with deletions demonstrated longer TST but lower sleep efficiency and higher WASO.

Conclusions

Sleep disturbances in children with AS are common, and highly heterogeneous, encompassing impairments in sleep maintenance, abnormal sleep duration, circadian phase disturbances, and poor sleep habits. Factors such as age, sex, and underlying genetic mechanism appear to influence sleep patterns—particularly total sleep time—in this neurodevelopmental disorder. Accordingly, a systematic objective sleep assessment as part of the comprehensive clinical evaluation is strongly recommended for children with AS suspected of having sleep disorders. These findings further underscore the importance of individualized, evidence-based management strategies.

Acknowledgements

The authors sincerely thank the children and their families for their participation, which made this study possible. We also acknowledge the staff of the Rare Diseases Clinic at Parc Taulí University Hospital and Puerta de Hierro Hospital, the Research and Innovation Team at Parc Taulí University Hospital (I3PT), and FAST (Foundation for Angelman Syndrome Treatment) Spain for their support. This study was funded by the Pau Massana Rare Diseases Grant.

Presenting Author
Martina Gnazzo (Italy)

Authors
Martina Gnazzo (Italy); Valentina Baldini (Italy); Martina Maragno (Italy); Giorgia Varallo (Italy); Giovanni Neri (Italy); Francesco Canulli (Italy); Andrea Fiorillo (Italy); Cristina Donati (Italy); Giuseppe Plazzi (Italy)

Presentation Day and Board Number
Friday, April 10, 2026 | P97

Title
Suicidal risk among adolescent psychiatric inpatients: the role of insomnia, depression, and social-personal factors

Introduction
Adolescents with psychiatric disorders are at increased risk of suicide, with insomnia, depression, and social-personal factors playing pivotal roles. This study investigates the interplay between these factors in a sample of adolescent psychiatric inpatients in Italy, with a particular focus on their association with suicide attempts.

Materials and Methods
We conducted a cross-sectional study on 95 adolescent inpatients (54 suicide attempters, 41 non-attempters) to explore their sociodemographic and clinical variables, including insomnia, depression, and social-personal factors as history of bullying. Logistic regression analyses and Pearson's correlations were used to identify significant predictors of suicide attempts and their interrelations.

Results
Suicide attempters were predominantly female (90% vs. 75%, $p = 0.04$) and more likely to have a family psychiatric history (83% vs. 63%, $p = 0.04$), a history of bullying (26% vs. 9%, $p = 0.01$), and insomnia (79% vs. 53%, $p = 0.01$). Depression was strongly associated with suicide attempts (96% vs. 70%, $p = 0.01$), while physically active adolescents were significantly less likely to attempt suicide (27% vs. 53%, $p = 0.01$). Insomnia and depression were highly correlated ($r = 0.94$, $p = 0.02$), emphasizing the critical role of the former in emotional dysregulation. Behavioral factors, such as physical inactivity and bullying, emerged as additional key contribu- tors to suicidal behavior.

Conclusions
This study highlights the multifaceted nature of suicide risk in adolescent psychi- atric

inpatients, with sleep disturbances, depression, and behavioral factors playing central roles. These findings underscore the need for integrated interventions targeting sleep, emotional regulation, and behavioral vulnerabilities to mitigate suicide risk.

Presenting Author
Martina Gnazzo (Italy)

Authors
Martina Gnazzo (Italy); Antonella Barbieri (Italy); Francesco Biscarini (Italy); Francesca Ingravallo (Italy); Valentina Baldini (Italy); Fabio Pizza (Italy); Giuseppe Plazzi (Italy)

Presentation Day and Board Number
Saturday, April 11, 2026 | P34

Title
Long-Term Clinical and Psychosocial Outcomes in Pediatric-Onset Narcolepsy Type 1

Introduction
Narcolepsy type 1 (NT1) is a chronic neurological disorder frequently beginning in childhood or adolescence. Although often underrecognized, NT1 is considered a disabling neurological condition within the spectrum of central disorders of hypersomnolence, with functional impairment comparable to other major chronic neurological diseases

While the acute pediatric phenotype is well characterized, long-term clinical and psychosocial outcomes into adulthood remain insufficiently explored.

This study aimed to characterize long-term clinical, psychological, social, and functional outcomes in individuals with pediatric-onset NT1, and to identify factors associated with more favorable or more challenging trajectories.

Materials and Methods
We conducted a cross-sectional cohort study including 297 patients with pediatric-onset NT1, integrating retrospective clinical data with a multidimensional survey. Among 232 eligible adults, 129 completed the survey. Subgroup analyses were performed based on age at onset, diagnostic delay, age at diagnosis, and, within the pediatric-diagnosis subgroup, age at onset

Results
Earlier age at onset (

Conclusions
Pediatric-onset NT1 shows heterogeneous long-term trajectories, influenced primarily by age at onset and diagnostic timing. Early onset and timely diagnosis appear to mitigate long-term symptom burden and psychosocial impact, underscoring the need for prompt recognition and multidimensional follow-up throughout development.

Presenting Author
Martina Gnazzo (Italy)

Authors
Martina Gnazzo (Italy); Giulia Pisanò (Italy); Valentina Baldini (Italy); Francesco Canulli (Italy); Diana De Ronchi (Italy); Fabio Pizza (Italy); Giuseppe Plazzi (Italy)

Presentation Day and Board Number
Saturday, April 11, 2026 | P35

Title
Unravelling Narcolepsy: A Case Series of Complex Paediatric Cases

Introduction
Narcolepsy type 1 (NT1) and narcolepsy type 2 (NT2) are rare, chronic neurological disorders of hypersomnolence. NT1 results from the selective loss of orexin-producing neurons, leading to markedly reduced levels of orexin neuropeptides in the brain and cerebrospinal fluid (CSF). NT2 shares some symptoms with the former but has no orexin deficiency. Both disorders manifest as a spectrum of debilitating symptoms, including excessive daytime sleepiness (EDS), cataplexy (NT1 only), fragmented nocturnal sleep, sleep paralysis, and hallucinations. Diagnosis is particularly challenging, especially in paediatric patients.

Materials and Methods
We describe seven paediatric patients presenting with complex narcolepsy phenotype of excessive daytime sleepiness or cataplexy with a diverse array of comorbid genetic, neurological, and neuropsychiatric conditions.

Results
These cases illustrate the diagnostic challenges in differentiating “primary narcolepsy” from “narcolepsy due to a medical disorder” (e.g., Prader-Willi Syndrome) or "narcolepsy associated with autism spectrum disorder or very early-onset schizophrenia". The patients underwent a comprehensive diagnostic work-up, including polysomnography, multiple sleep latency testing (performed after wash-out of concomitant medications), brain magnetic resonance imaging, cerebrospinal fluid hypocretin-1 assay, and, in case of consistent clues, autoimmune and genetic testing.

Conclusions
Ensuring accurate and prompt narcolepsy diagnosis allows effective and patient centred management.

Presenting Author
Melanie Stearns (United States)

Authors
Melanie A Stearns (United States); Christina S McCrae (United States)

Presentation Day and Board Number
Friday, April 10, 2026 | P98

Title
Strict Nights, Short Sleep: Authoritarian Parenting and Sex-Specific Depression in Grandchildren Cared for by Grandparents

Introduction
Inadequate sleep is critical for child emotional health, with insufficient sleep duration linked to greater depression risk. Family dynamics strongly shape sleep, and grandchildren raised by grandparents may face unique stressors that disrupt routines. Authoritarian parenting, especially coercive or hostile behaviors, has been associated with reduced TST and higher depression. Sex differences may further moderate these associations, as boys and girls often differ in sleep patterns and vulnerability to parenting influences. Yet, little is known about how sleep, parenting style, and sex interact in grandparent-headed households to predict depression. Understanding these combined effects is essential for identifying mechanisms of risk and informing tailored interventions. This study addresses that gap.

Materials and Methods
Grandparents (N=185, Mage=54.31, 79.8%-female) who reported living with and being responsible for the care of their grandchildren (Mage=8.05, 49.4%-female) completed the Revised Children's Anxiety and Depression Scale-25, Parenting Styles & Dimensions Questionnaire - Short Version (with 3 main subscales: authoritative, authoritarian, and permissive parenting), and reported on the average hours of sleep their grandchild obtained in the past week (total sleep time-TST). SPSS PROCESS conducted moderation analyses, controlling for grandchild age.

Results
A significant three-way interaction was observed among authoritarian parenting, grandchild sex, and TST predicting depression, (β=.72, SE=.32, p=.004). The interaction between authoritarian parenting × TST (β=1.51, SE=.60, p=.014) was significant in the overall sample, and upon further examination only significant in male grandchildren (β=.79, p=.009), such that greater authoritarian parenting was related to lower TST. Similarly, authoritarian

parenting × grandchild sex (β=3.32, SE=1.15, p=.004) were significant. The interaction between TST × sex was not significant (β=.52, SE=.32 p=.131). We next examined the 3 subscales making up authoritarian parenting (physical coercion, verbal hostility, and non-reasoning). A significant three-way interaction was observed among physical coercion, grandchild sex, and TST predicting depression, (β=.64, SE=.28, p=.023). The interaction between physical coercion × TST (β=1.36, SE=.54, p=.01) was significant in the overall sample, and upon further examination only significant in male grandchildren (β=.72, p=.007), such that greater physical coercion was related to lower TST. Similarly, the interaction between physical coercion × grandchild sex (β=3.32, SE=1.04, p=.002) was significant, such that increased physical coercion was related to increased depression in male grandchildren (β=1.51, p=.003). The interaction between TST × sex was not significant (β=.463, SE=.352 p=.190).

Conclusions

These findings highlight the importance of considering sleep as a critical pathway linking authoritarian parenting to depression in grandchildren being raised by grandparents, with notable sex differences in vulnerability. Clinically, these results suggest that interventions should prioritize improving total sleep time through behavioral sleep strategies while simultaneously supporting grandparents in adopting less coercive parenting practices. Tailored approaches may be especially important for boys, who may be more susceptible to the combined effects of authoritarian parenting and reduced sleep. Future research should employ longitudinal designs and objective measures to clarify these relationships.

Acknowledgements

Support: Sleep Research Society (Stearns, PI)

Presenting Author
Melanie Stearns (United States)

Authors
Melanie A Stearns (United States); Brittani Holland (United States); Mridula Singh (United States); Kevin McGovney (United States); Mary Beth Miller (United States); Christina S McCrae (United States)

Presentation Day and Board Number
Saturday, April 11, 2026 | P37

Title
Out of Sync, Out of Sleep: Stress Reactivity as a Mediator Between Chronotype and Insomnia in Adolescents

Introduction
Adolescence is marked by circadian shifts toward evening preference, heightened stress reactivity, and increased risk for insomnia. While chronotype and sleep problems are often linked, the mechanisms underlying this association remain unclear. Stress reactivity has been proposed as a key vulnerability factor, amplifying the impact of circadian misalignment on sleep disturbance. Understanding whether stress reactivity explains the relationship between chronotype and insomnia can clarify pathways of risk and inform targeted interventions for adolescent sleep health. This study lays the groundwork for filling that gap.

Materials and Methods
Adolescents (N=400, Mage=15.23, 50%-female) completed the Insomnia Severity Index, Morning-Eveningness Questionnaire, and Perceived Stress Reactivity Scale. SPSS and PROCESS evaluated correlations among the variables and the indirect effect of perceived stress reactivity on the relationship between morning/eveningness preferences and insomnia severity, controlling for puberty.

Results
All variables were significantly correlated with each other. Perceived Stress Reactivity Scale mediated (B=-.16) the relationship between the Morning-Eveningness Questionnaire and Insomnia Severity Index in adolescents. Greater morning preference was associated with less overall stress reactivity ($t=-6.9$, $p<0.001$) and greater stress reactivity was related to greater insomnia severity ($t=9.00$, $p<0.001$). However, morning preference was not related to insomnia severity ($t=-1.41$, $p=.16$), suggesting there was no significant direct effect and full mediation.

Conclusions

These findings highlight stress reactivity as a potentially key mechanism connecting circadian preference to insomnia risk in adolescents. Thus, adolescents, especially those with evening preference, may benefit from behavioral sleep interventions which incorporate modules to reduce stress reactivity. We encourage longitudinal and experimental research methodologies to further explore how stress reactivity is related to chronobiology and insomnia.

Acknowledgements

Support: TRIUMPH University of Missouri (McCrae, PI)

Presenting Author
Michelle Ly (Canada)

Authors
Michelle Ly (Canada); Marjolaine Chicoine (Canada); Karine Dubois-Comtois (Canada); Marie-Julie Béliveau (Canada); Marie-Hélène Pennestri (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P40

Title
What variables do mothers use to appraise sleeping through the night?

Introduction
Sleeping through the night (STN) is a frequent concern for parents of infants and one of the most common reasons they seek clinical guidance. However, it lacks a consistent definition. Although a six-hour consecutive nocturnal sleep period is commonly used in scientific literature and in clinical practice, it remains unclear whether this definition aligns with mothers' appraisal. Furthermore, there is no clear data on which sleep variable (consecutive sleep duration, total sleep duration or duration of nocturnal awakenings) influence mothers' appraisal of STN the most. Therefore, the present study aimed to examine which subjective and objective sleep variables contribute to maternal appraisal of STN at six months postpartum.

Materials and Methods
The sample included forty-three mothers of six-month-old infants from Montreal, Canada. Maternal appraisal of STN was assessed using an open-ended question from the Sleep Practice Questionnaire and infants were classified as either STN or not at six months (STN: yes or no). Infant sleep variables, including total nocturnal sleep duration, longest consecutive nocturnal sleep duration, and total duration of nocturnal awakenings, were measured in minutes using both sleep diary and actigraphy and averaged across twelve nights. Infant sleeping arrangements, infant feeding method, and maternal depressive symptoms were included as covariates. Univariate analyses were first conducted to examine associations between sleep variables and maternal appraisal of STN. A forward binary logistic regression model that included all variables was then used to identify the strength of each of variables in contributing to maternal appraisal of STN.

Results
In univariate analyses, all sleep variables measured by sleep diary were significantly

associated with maternal appraisal of STN (p .05). In the forward binary logistic model, only the longest consecutive nocturnal sleep duration measured by sleep diary was significantly associated with increased odds of being appraised as STN (odd ratio = 1.01, 95 % CI [1.004, 1.018], p

Conclusions

Findings indicate that maternal appraisal of whether an infant is sleeping through the night is driven by perceived longest consecutive sleep duration rather than total sleep duration or any objective sleep measures assessed by actigraphy. Results highlight a discrepancy between objective measures of infant consecutive sleep duration and maternal perceptions and suggest that maternal perception of longest consecutive sleep duration is a better estimate of STN appraisal. These results highlight the importance of clarifying how STN is defined and assessed in both research and clinical contexts, to better align expectations and reduce parental concerns regarding infant sleep development.

Acknowledgements

This research was undertaken thanks to funding from Canadian Social Sciences and Humanities Research Council Insight Grant, and in parts, the Canada Research Chairs Program.

Presenting Author
Milagros Merino Andreu (Spain)

Authors
Gonzalo Pin Arboledas (Spain); Milagros Merino Andreu (Spain); Pedro Javier Rodríguez Hernández (Spain); Marta Furones García (Spain); Lucía Monfort Belenguer (Spain); Teresa de la Calle Cabrera (Spain); Guillermo Benito Ruiz (Spain); Óscar Sans Capdevila (Spain); Carlos Javier Egea Santaolalla (Spain)

Presentation Day and Board Number
Friday, April 10, 2026 | P29

Title
Sleep Characteristics and Diagnostic Tools for Insomnia in Individuals Under 18 Years Old with Autism Spectrum Disorder

Introduction
There sleep characteristics are distinctive in children and adolescents with Autism Spectrum Disorder (ASD) which highlight the importance of adequate assessment for management. Diagnosis is an important part and requires integrating both subjective and objective methods, as each provides complementary information about sleep quality and architecture.

Materials and Methods
This work has been developed by six scientific societies Spanish Pediatric Association, Spanish Society for Sleep, Child Psychiatry Society of the Spanish Pediatric Association, Spanish Society of Pediatric Neurology, Spanish Society of Outpatient Pediatrics and Primary Care and Spanish Federation of Sleep Medicine Societies) and one patient association (Autism Spain). The main diagnostic tools used in this population were reviewed, including objective laboratory or home-based studies and subjective records, applying a modified and adapted Delphi process that enabled expert consensus.

Results
Individuals with ASD exhibit specific sleep characteristics, such as longer sleep latency, reduced sleep efficiency and total sleep time, more nighttime awakenings, as well as alterations in circadian patterns, daytime sleepiness, and atypical melatonin secretion patterns, all of which affect their functionality and behavior.

Among the objective assessments, actigraphy, the multiple sleep latency test, ambulatory circadian monitoring, melatonin profiling, and polysomnography are noteworthy. The latter is indicated only when apnea, nocturnal epilepsy, parasomnias, or movement disorders are

suspected, although its use may be limited due to the low tolerance of individuals with ASD to sensors. For this reason, home-based methods such as actigraphy and circadian monitoring are prioritized, particularly for evaluating circadian rhythm disorders and nighttime awakenings.

The main subjective tools are the Children's Sleep Habits Questionnaire (CSHQ), the Sleep Disturbance Scale for Children (SDSC), and sleep diaries, recorded over two weeks, which provide essential information on schedules and nighttime behaviors.

Conclusions

Identifying the unique sleep characteristics of children and adolescents with ASD helps guide interventions tailored to each patient's needs. Optimal diagnosis should combine both subjective and objective tools, prioritizing home-based methods due to their tolerability and clinical value, as the effectiveness of therapeutic management directly depends on an accurate evaluation.

Presenting Author
Milagros Merino Andreu (Spain)

Authors
Milagros Merino Andreu (Spain); M. Pilar Tirado Requero (Spain); M. Angeles Gómez Cano (Spain); Crsitina Barcia Aguilar (Spain); Marta Naranjo Castresana (Spain)

Presentation Day and Board Number
Saturday, April 11, 2026 | P41

Title
IS GENOTYPE ASSOCIATED WITH SLEEP AND AGGRESSIVITY PATTERN IN SMITH-MAGENIS SYNDROME (SMS)?

Introduction
Smith-Magenis syndrome (SMS) is a rare genetic neurodevelopmental disorder caused by a 17p11.2 deletion or pathogenic mutation in the RAI1 gene within this chromosome. SMS is associated with intellectual deficiency, speech delay, maladaptive behavioral disturbance (attention deficit/hyperactivity disorders, tantrums, aggressivity, self or hetero-injury), distinguishing physical features (notably facial traits) and sleep disorders. There is a typical inversion of circadian melatonin secretion, with a diurnal peak time and low nighttime melatonin levels, with an excessive daytime sleepiness, nocturnal restless and fragmented sleep. Tha aim is to explore the relationships between sleep, performance and genetic findings in SMS, we describe the sleep pattern and behavioral problems and explore the potential relation between both and genetic phenotypes.

Materials and Methods
We have included 8 subjects with SMS genetically confirmed (75% males, 7.8 ± 6.3 yo; 25% females, 12.5 ± 5.8 yo). They have been investigated comparing genetic phenotype (DEL, MUT), sleep characteristics (Sleep Disturbance Scale for Children, SDSC) and aggressivity (Buss-Perry Aggression Questionnaire, BPAQ).

Results
In our sample, a high percentage (50%) of subjects with SMS had moderate or severe sleep disorders, frequently difficulty in initiating and maintaining sleep with higher sleep latency. In the DEL group (50%), median total BPAQ score was lower (70.5 vs. 106.5, p = 0.05), as well Verbal Aggression and Hostility BPAQ subscores (p = 0.03 and p = 0.07 respectively). In the other side, SDSC mean value was not significatively different in both groups (38.7 vs. 40.2, p =

0.39). Comparing sleep disturbances and behavioral problems, we have observed a mild positive correlation (r = 0.53).

Conclusions

We have observed that RAI1 mutations are associated with a higher level of aggressivity but not more sleep disorders compared to 17p11.2 deletion. In this sample there was a mild positive correlation between sleep and behavioral problems (the worse these patients sleep, the more aggressive they become) but it is required to conduct more studies, with a larger sample size (considering that there are less that 70 SMS diagnosed individuals in Spain) and longer follow-up time, to further clarify the relationship. Finally, we suggest that the genetic variant may contribute to personalized-management strategies in individuals with SMS, reinforcing the importance to address the sleep problems in their treatment.

Acknowledgements

We thank the children and parents, for participating in this study.

Presenting Author
Miriam Shabetai (United Kingdom)

Authors
Miriam Shabetai (United Kingdom); Bethan Cornick (United Kingdom); Charity Simmons (United Kingdom); Jessica Bodfish (United Kingdom); Lauren Shelley (United Kingdom); Joanne Tarver (United Kingdom); Rebecca Knibb (United Kingdom); Georgie Agar (United Kingdom)

Presentation Day and Board Number
Saturday, April 11, 2026 | P42

Title
The psychometric properties of subjective sleep measures in adolescents aged 12-18 years

Introduction
Adolescents are recommended to obtain 8-10 hours of sleep per night; however, adolescents typically report fewer hours and up to 46% report sleep-related complaints. Subjective sleep measures are often used to evaluate individuals' sleep; however, these are rarely designed specifically for use within adolescent populations. Therefore, researchers and clinicians are required to use measures developed for adult or younger paediatric populations. These measures may be inappropriate for adolescence due to specific questions (e.g., on bed mates and driving) or focus on aspects of sleep which may not be typical in adolescence, such as co-sleeping with and/or regularly disturbing their caregiver overnight.

Furthermore, measures are often informant-report. Whilst these are useful for observable sleep difficulties and have obvious clinical utility, there is evidence of caregivers under- and over-estimating sleep problems. As children become older and enter adolescence, they are less likely to disturb their caregiver and therefore caregivers may be unaware of continued sleep problems such as delayed sleep onset or wake after sleep onset.

This systematic review will review existing sleep quality measures and meta-analyse their psychometric properties to evaluate which might be most appropriate for use with adolescents.

Materials and Methods
The systematic review followed PRISMA guidelines. Six databases were searched: PsychINFO; Embase; Web of Science; PubMed; MEDLINE; and CINHAL, using key search terms for adolescence, measure, sleep, and psychometric properties. Following duplication removal, titles and abstracts were screened, with relevant papers and articles progressing to full-text

screening. Papers that reported the psychometric properties of a subjective sleep measure in participants aged 12-18 years were included in the review and their psychometrics extracted for meta-analysis. Studies were evaluated using the COSMIN guidelines to generate a quality rating.

Results

Initial searches produced 76,031 initial references and 42,151 once duplicates were removed. Titles and abstracts were screened, and 4296 papers progressed to full-text screening and 544 met inclusion criteria for the review. Of these, 206 were translated versions of questionnaires or focused on chronotype. These papers have not been included in the meta-analysis. The remaining papers were evaluated for reported internal consistency, inter-rater reliability, test-retest reliability, convergent validity, and content validity of measures. Psychometric properties were extracted for 65 different sleep measures and preliminary analysis is ongoing.

The largest number of data points were extracted for the PSQI, with 51 papers reporting an internal consistency statistic. Of these, 43 reported a Cronbach's Alpha and were meta-analysed with an overall weighted average estimate of $\alpha = 0.77$ (random effects) and $\alpha = 0.84$ (quality effects). The ISI had the second most data points, with 32 papers reporting internal consistency and 26 papers reporting a Cronbach's Alpha. The ISI had an overall weighted average estimate of $\alpha = 0.85$ (random effects) and $\alpha = 0.92$ (quality effects).

Conclusions

This systematic review and meta-analysis of sleep measures summarises the range of subjective sleep measures used to assess sleep in adolescents and their reported psychometric properties. Many of these were explicitly designed for adults or much younger children, highlighting the need for a more appropriate tool to be developed for adolescents.

Presenting Author
Mirja Quante (Germany)

Authors
Alisha Blum (Germany); Cornelia Wiechers (Germany); Eline De Groot (Germany); Jeroen Dudink (Netherlands); Christian F. Poets (Germany); Mirja Quante (Germany)

Presentation Day and Board Number
Saturday, April 11, 2026 | P43

Title
Influence of the environment (intensive care unit versus intermediate/normal care unit) on the sleep of preterm infants

Introduction
Sufficient sleep is necessary for brain development and especially for synaptic plasticity. However, studies have shown that in neonatal intensive care units (NICUs), many factors such as high intensity light, noise and frequent invasive procedures can disturb the sleep of preterm infants. This study aims to compare the sleep behavior of preterm infants in the NICU compared to the intermediate or normal care unit.

Materials and Methods
The sleep behavior of 19 preterm infants (11 girls, median birth weight 1490 g [IQR 1258; 1785], median gestational age (GA) at birth: 32 weeks + 0 days [IQR 29+2; 34+1]) was recorded using two camera systems, one focused on the facial expression, the other on the whole body. The first sleep recording was made in the NICU, and the second was made within 7 days of the infant being transferred to the intermediate or normal care unit. Each recording lasted for at least three hours. Additionally, noise levels were measured to determine the average sound exposure during the recordings. The videos were then scored manually according to the BeSSPI (Behavioral Sleep Stage classification for Preterm Infants).

Results
Data acquisition is still ongoing, but we see a tendency towards a higher proportion of quiet sleep from the first to the second measurement. The median noise level was 43.40 dB in the NICU and 38.85 dB in the intermediate and normal care.

Conclusions
Originally, we expected a higher proportion of active sleep during the second measurement. Contrary to our hypothesis, there was a trend towards more quiet sleep in the second measurement. This could possibly be explained by the fact that overall preterm infants

showed less quiet sleep in the first video measurement as anticipated for their gestational age, probably because of a stressful environment. Therefore, an explanation could be that preterm infants make up for this deficit in quiet sleep once transferred to a calmer environment.

Acknowledgements

Dr. Quante received funding from the Medical Faculty of the University of Tuebingen (Advanced Clinician Scientist Program, grant no. 531-0-0).

Presenting Author
Mirjana Subotic-Kerry (Australia)

Authors
Mirjana Subotic-Kerry (Australia); Sophie Li (Australia); Philip Batterham (Australia); Brittany Corkish (Australia); Aliza Werner-Seidler (Australia)

Presentation Day and Board Number
Friday, April 10, 2026 | P99

Title
The effects of a digital CBT-I application (Sleep Ninja®) on insomnia in children: A randomised controlled trial

Introduction
Sleep is fundamental to healthy development, growth, and well-being. Adolescence (ages 10–19) is marked by rapid biological and social changes that increase vulnerability to sleep disturbance. Despite recommendations of 8–10 hours of sleep per night, up to one-third of adolescents experience difficulties initiating or maintaining sleep, and approximately half do not obtain sufficient sleep.

Although many common sleep problems in this age group are responsive to psychological intervention, access to treatment remains limited. Existing interventions are often time-intensive and burdensome for families. They are predominantly parent-focused, with relatively few programs targeting children directly or supporting the development of independent sleep self-management skills.

Digital interventions offer a scalable and accessible approach to addressing these barriers. Sleep Ninja®, a fully automated cognitive behavioural therapy for insomnia (CBT-I) smartphone application, was co-designed with young people to promote independent sleep skills. Building on evidence of efficacy in older adolescents (12–16 years), the app was extended for use with 10–12-year-olds, alongside the development of a companion parent website to support implementation. The current trial evaluated whether Sleep Ninja® could reduce insomnia symptoms in adolescents aged 10–12 years compared with an active psychoeducation control."

Materials and Methods
A two-arm, single-blind, parallel RCT was conducted in Australia. Children aged 10–12 years with insomnia symptoms were recruited online and randomly allocated to either (a) the Sleep Ninja® intervention (six app-based CBT-I modules with companion parent website support) or (b) an active control condition consisting of six weekly digital sleep psychoeducation flyers. The primary outcome was child-reported insomnia symptoms at six weeks, assessed using the Paediatric Insomnia Severity Index–Adolescent Version (PISI-A). Secondary outcomes included parent-reported insomnia symptoms, depression, anxiety, daytime sleepiness, sleep quality, and dysfunctional sleep beliefs, assessed at six weeks, three months, and nine months post-baseline. Analyses were conducted on an intention-to-treat basis using mixed-effects models.

Results
A total of 232 children (53% female; M age = 10.6 years) were randomised to Sleep Ninja® (n=117) or an active control (n=115). Compared with the control group, children allocated to Sleep Ninja® showed greater reductions in insomnia symptoms at six weeks (mean difference = 1.73, 95% CI [0.48–2.97], p=0.007; Cohen's d=0.39) and at three months (mean difference = 1.66, 95% CI [0.16–3.16], p=0.03; Cohen's d=0.35). Parent-reported insomnia symptoms also improved at six weeks (mean difference=1.55, 95% CI [0.34–2.75], p=0.012), but not at later follow-ups. Depressive and anxiety symptoms decreased over time across both groups ($p < 0.01$), with no significant between-group differences. No between-group differences were observed for perceived sleep quality or daytime sleepiness. Among participants who engaged with the intervention, adherence was high, with 74 (69.8%) completing three to six lessons.

Conclusions
This study provides the first randomised controlled evidence that a fully automated digital CBT-I intervention can reduce insomnia symptoms in children aged 10–12 years. Sleep Ninja® represents a low-cost, scalable early intervention that can be delivered with minimal clinical input, addressing a critical gap in access to evidence-based sleep treatment for this age group.

Acknowledgements
The authors would like to sincerely thank the children and parents who generously contributed their time and experiences to this study. We also acknowledge Australian Rotary Health for their funding support, which made this research possible.

Presenting Author
Mirjana Subotic-Kerry (Australia)

Authors
Mirjana Subotic-Kerry (Australia); Brittany Corkish (Australia); Kate Maston (Australia); Sophie Li (Australia); Aliza Werner-Seidler (Australia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P44

Title
Parent Perspectives on Sleep Challenges and Support Needs in Children Aged 10–12 Years

Introduction
Sleep difficulties are common in late childhood and increase risk for emotional, behavioural, and academic difficulties. Ages 10–12 years represent a critical developmental transition characterised by increasing autonomy, cognitive-emotional arousal, and exposure to technology, yet parents remain central to shaping sleep behaviours. Despite this, limited research has examined parental perspectives on sleep challenges and support needs during this period. This study aimed to characterise parent-reported sleep difficulties in children aged 10–12 years, identify perceived barriers to sleep, examine the impact of sleep problems on children and families, and explore parents' preferences for information, tools, and resources to support healthy sleep.

Materials and Methods
A cross-sectional online survey was completed by 250 Australian parents or guardians of children aged 10–12 years between May and June 2023. Recruitment occurred via a national mental health institute website, social media advertising, and parent networks. Parents reported on their child's sleep patterns, insomnia symptoms (Paediatric Insomnia Severity Index), perceived barriers to sleep, impacts on child and family functioning, motivation to support sleep improvement, and support needs. Quantitative data were analysed descriptively. Free-text responses were analysed using reflexive thematic analysis with an inductive, data-driven approach.

Results
Sleep difficulties were common. Nearly half of parents reported that their child frequently had difficulty falling asleep (47.6%) or experienced regular bedtime worry (44.8%), and 40.8% reported sleep duration below national recommendations. The most frequently endorsed barriers to sleep were worry and rumination (62.8%), difficulty initiating or maintaining sleep

(50.4%), and screen use (37.2%). Thematic analysis identified cognitive arousal and overthinking as the most prominent sleep challenge, alongside emotional regulation difficulties, bedtime resistance, dependence on parental presence, environmental and lifestyle factors, and neurodevelopmental considerations. Parents reported broad impacts on children's mood, behaviour, school functioning, family routines, and parental well-being. While most parents were highly motivated to improve their child's sleep, many identified gaps in knowledge and access to practical, age-appropriate resources. Key support needs included education about sleep and sleep hygiene, strategies to manage anxiety and rumination, guidance on routines and screen use, relaxation techniques, and access to credible, professionally endorsed resources.

Conclusions

Sleep problems are highly prevalent in late childhood and are frequently underpinned by cognitive and emotional arousal. Parents remain motivated and engaged in supporting sleep but report a need for accessible, developmentally tailored, and evidence-based resources. Findings highlight the importance of family-centred, co-designed approaches that integrate behavioural, emotional, and educational strategies to promote healthy sleep and support family well-being during this critical developmental period.

Acknowledgements

We thank the parents and caregivers who generously shared their time and experiences. This research was supported by Australian Rotary Health.

Presenting Author
Mohana Sundaram SM (India)

Authors
Mohana Sundaram SM (India); Biswaroop Chakrabarty (India); Sheffali Gulati (India); Prashant Jauhari (India); Kanaram Jat (India); Kapil Sikka (India); Vandana Jain (India); Rakesh Lodha (India); Maroof A Khan (India)

Presentation Day and Board Number
Friday, April 10, 2026 | P26

Title
Development of a stepwise algorithm to diagnose sleep disorders in normally developing 2-18-year-olds: a questionnaire, actigraphy and polysomnography based observational study

Introduction
Sleep disorders affect nearly one-third of children and adolescents and are linked to cognitive, behavioral, and medical issues. Although clinical evaluation and polysomnography (PSG) based on ICSD-3 remain the diagnostic gold standard, both require specialized expertise and are often complex to interpret. Limited familiarity with ICSD-3 criteria and PSG reports among general physicians and even among specialists such as neurologists and pulmonologists contributes to underdiagnosis, especially in low middle-income countries. The Childhood and Adolescent Sleep Evaluation Questionnaire (CASEQ), a validated ICSD-3–based screening tool, offers a structured, simple, and practical approach for identifying sleep disorders in this population

Materials and Methods
This study aimed to develop and validate a stepwise diagnostic algorithm combining CASEQ with 3 PSG parameters against gold standard evaluation as per ICSD-3. As a secondary objective, sleep efficiency, total sleep time and sleep latency were compared between PSG and Actigraphy parameters.

Normally developing 2–18-year-olds with suspected sleep disorders were evaluated at the Department of Pediatrics, at a tertiary teaching hospital in north India. Each participant underwent CASEQ administration, actigraphy, and overnight PSG.

Stepwise diagnoses were assigned sequentially using

- CASEQ alone (step 1),

- CASEQ plus Oxygen Desaturation Index (ODI) and Periodic Limb Movement index (PLMI) from PSG (step 2) and

- CASEQ plus Apnea Hypopnea Index (AHI) and Periodic Limb Movement index from PSG (step 3).

The final gold standard diagnosis (Step 4) was made through detailed clinical evaluation and overnight PSG as per ICSD-3. Agreement between actigraphy and PSG parameters was analyzed using Intraclass Correlation Coefficient (ICC) and Bland–Altman plots

Results

Of 164 screened children, after applying inclusion and exclusion criteria and excluding technically inadequate records, 83 cases were included (mean age 9.5 ± 3.2 years; 69% males). The most common indication for PSG was snoring (37%) followed by movements during sleep (26%). The most common final diagnoses were sleep-related movement disorders (81%) and sleep-related breathing disorders (79%), with multiple diagnoses in a sizeable proportion.

The sequential diagnostic sensitivity improved markedly across steps, rising from 32.5% with CASEQ alone, to 75.9% with CASEQ plus ODI and PLMI, and reaching 95.2% with CASEQ combined with AHI and PLMI, closely approximating the gold standard. For parasomnia, nocturnal enuresis and circadian rhythm sleep wake disorders (CRSWD), the sensitivity of the diagnostic algorithm remained 100% at all steps.

Actigraphy demonstrated moderate agreement with PSG for total sleep time (ICC = 0.62) and sleep efficiency (ICC = 0.63), but poor agreement for sleep onset latency (ICC = 0.32)"

Conclusions

The stepwise algorithm combining CASEQ with ODI, PLMI, and AHI achieved over 90% diagnostic accuracy relative to the gold standard ICSD-3. It can be used to train specialists in quick diagnosis of sleep disorders. In children who don’t cooperate for nasal cannula during overnight PSG, and AHI cannot be calculated, DI can be a useful surrogate as it has a 100% PPV. Despite moderate concordance between actigraphy and PSG for TST and SE, actigraphy is not a dependable replacement for overnight PSG

Presenting Author
Mon Ohn (Australia)

Authors
Mon Ohn (Australia); Tracey Verstandig(Australia); Andrew Wilson (Australia); Annie O'Donnell (Australia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P45

Title
Rethinking Eligibility for Paediatric Home Sleep Study: Audit Insights from a Tertiary Hospital

Introduction
Ambulatory home-based sleep tests (HST) are routinely performed at Perth Children's Hospital (PCH), Western Australia's only tertiary paediatric referral centre, as a more accessible and less resource-intensive alternative to in-laboratory polysomnography. Moreover, while oximetry remains a standard screening tool, its diagnostic limitations, particularly in detecting mild obstructive sleep apnoea (OSA), have prompted interest in HST for broader clinical utility.

While current eligibility criteria for HST typically restrict use to children over six years of age without significant comorbidities, clinical demand and evolving practice suggest the need to reassess these boundaries.

This quality assurance audit aimed to evaluate the performance, feasibility, and reliability of the existing HST service at PCH and to explore whether the service could be safely extended to younger children and those with medical comorbidities. We hypothesised that home sleep studies are feasible and reliable across a broader paediatric population than our institute current practice.

Materials and Methods
A retrospective audit was conducted on 142 home-based sleep studies performed at PCH between June 2018 and June 2019. Data collected included patient demographics, referral sources, study validity (defined as ≥4 hours of total sleep time), and diagnostic outcomes. Descriptive statistics were analysed using SPSS.

Results
The cohort included 142 children aged 3–17 years (mean age 9.74 years; 65% male), of whom

27% (38 children) were under 6 years of age. Of the total, 47 children (33%) were relatively healthy, while 95 (67%) presented with comorbidities including obesity, neuromuscular disorders, and syndromic conditions. Validity criteria were met in 131 studies (92%), and there were minimal technical errors. Among the 11 unsuccessful studies, two were attributed to technical faults and nine to absent SpO_2 signals; notably, all invalid studies occurred in older children (ages 7–15), whereas all studies in children under six were successful.

Primary referral indications included snoring (87%), restless sleep, witnessed apnoea, and clinical suspicion of OSA. Referrals were predominantly from general paediatricians (50%), followed by sleep physicians (26%), ENT/general practitioners (17%), and other sources (7%). Diagnostic outcomes revealed mild OSA in 63% (90 children), moderate OSA in 19% (27), severe OSA in 4% (6), increased upper airway resistance in 5% (7), and no sleep-disordered breathing in 8% (12). These findings affirm the clinical appropriateness of referrals—primarily for snoring and demonstrate a high diagnostic yield, with 86% of children diagnosed with sleep-disordered breathing.

Conclusions

This audit demonstrates that ambulatory HST is both feasible and reliable in a diverse paediatric population, including children under six and those with comorbidities. The findings challenge current practice and support expanding access to home-based sleep diagnostics to younger children. Revising HST protocols to lower age thresholds and broaden inclusion criteria could help reduce waitlists and enable earlier diagnosis and management of paediatric sleep-disordered breathing.

Future direction:

This audit's finding of predominantly mild OSA in the PCH cohort highlights the need to review screening pathways for children with snoring. It prompts consideration of whether HST could serve as a first-line diagnostic tool and how its performance compares with oximetry. These questions warrant future audit.

Acknowledgements

We gratefully acknowledge our patients and their families, the Sleep Disorders Unit at PCH, and our institute for their invaluable support in this study.

Presenting Author
Napasorn Jansongserm (Thailand)

Authors
Napasorn Jansongserm (Thailand); Sarisa Thawongit (Thailand); Prakasit Wannapaschaiyong (Thailand); Assoc. Prof. Kanokporn Udomittipong (Thailand)

Presentation Day and Board Number
Saturday, April 11, 2026 | P46

Title
The effects of hypoxic burden on executive function (EF) in preschool children with obstructive sleep apnea

Introduction
Hypoxic burden (HB) is an emerging polysomnographic parameter with increasing evidence of clinically relevant systemic effects. In pediatric obstructive sleep apnea (OSA), executive function (EF) impairment is well recognized; however, existing studies have largely relied on conventional PSG indices, such as the apnea-hypopnea index (AHI), and have focused predominantly on school-aged children. This study, therefore, examines the association between HB and EF, with specific emphasis on the preschool-age population, a critical and underrepresented developmental stage for EF maturation.

Materials and Methods
This observational cross-sectional study enrolled children aged 2-6 years at Siriraj Hospital (February 2025- February 2026). The OSA group included children with PSG-confirmed OSA; 44 participants were included. The control group (N = 28) demonstrated no clinical features suggestive of OSA, with no reports of habitual snoring. HB indices were derived from the DOMINO software version 3.1 (Somnomedics, Germany). Executive function was assessed using the Behavior Rating Inventory of Executive Function-Preschool (BRIEF-P), Thai version, with parent-reported questionnaires completed for participants in both the OSA and control groups. Spearman's rank correlation and regression models were used to evaluate associations among variables. Statistical significance was defined as a two-tailed p-value < 0.05.

Results
In the OSA group (N = 44), the mean age was 4.4 ± 0.9 years, and 59% of participants were male. The mean AHI was 18.7 ± 22.6 events/hour, the mean HB index was 15.6 ± 29.1 %min/hour, and the mean arousal index was 15.2 ± 11.9 events/hour. In the control group (N =

28), the mean age was 4.2 ± 1.3 years, and 64% of participants were male. AHI demonstrated a moderate positive correlation with the HB index ($r = 0.632$, $p < 0.001$). In multivariable logistic regression, preschool children with severe OSA (AHI ≥ 10 events/hour) were the only group independently and significantly associated with an elevated BRIEF-P Global Executive Composite (GEC) T-score (≥ 65) (OR = 0.059, 95% CI: 0.005–0.669, p= 0.022), indicating a significantly higher risk of executive dysfunction in the severe OSA group compared with the non-severe group. In contrast, the HB index, the primary exposure of interest, was not significantly associated with executive function outcomes, including the GEC T-score or any EF subdomains. Similarly, the arousal index showed no significant association with EF measures. However, in the subgroup analysis of children with severe OSA and an HB index ≥ 9 %min/hour, this group demonstrated a borderline trend toward a higher likelihood of abnormal BRIEF-P GEC T-scores compared with those with HB < 9 %min/hour (OR=0.091; p=0.050).

Conclusions

Severe OSA is associated with EF impairment in children. Although the HB index alone showed no independent effect, preschool children with severe OSA and HB ≥ 9 %min/hour demonstrated a trend toward more severe EF dysfunction, supporting early diagnosis and prompt treatment to preserve neurodevelopment.

Acknowledgements

This research project was supported by the Siriraj Research Development Fund, Faculty of Medicine Siriraj Hospital, Mahidol University (Grant No. (IO) R0 15631063).

Presenting Author
Natalie Barnett (United States)

Authors
Shambhavi Thakur (United States); Carmela Alcantara (United States); Sarah Berger (United States); Monica Ordway (United States); Natalie Barnett (United States); Maristella Lucchini (United States)

Presentation Day and Board Number
Saturday, April 11, 2026 | P73

Title
Differences in Infant Sleep Practices and Safe-Sleep Guideline Adherence by Immigrant and Generational Status Among Mothers in the U.S

Introduction
Infant safe sleep practices are essential for reducing sleep-related infant deaths. Prior work shows that caregiver awareness, cultural norms, and contextual barriers influence adherence to recommended infant sleep guidelines. Given persistent disparities across demographic groups, this study examines how immigrant generational status relates to mothers' infant sleep behaviors and adherence to safe-sleep guidelines in the U.S.

Materials and Methods
Participants included 1,274 mothers of infants aged 0-24 months (mean 10.07±6.8 months) residing in the US. Generational status was defined as follows: first-generation (n = 134,mean age 35.4±4.8 years) mothers were those not born in the United States (US), and second-generation (n = 183, mean age 34.7±5.1 years) were those born in the US with at least one parent born outside the US. Non-immigrant mothers (n = 957, mean age 33.7±4.4 years) were those born in the US to US-born parents. Participants were predominantly White (72%), with additional representation from multiracial (10%), Asian (6%), Hispanic/Latino (7%), Black (3%) and 1% other. Household income was relatively high, with over 55% earning above $150,000 annually. Infant sleep behaviors included the sleep location and whether sleep was perceived as a problem (BISQ-R). Mothers were asked whether they followed the sleep safety practices recommended by the American Academy of Pediatrics (AAP). Responses included: "I'm not familiar with these guidelines," "No," "Sometimes," and "Yes, consistently," capturing both knowledge of AAP recommendations and adherence to safe sleep practices. Generational differences in acculturation were examined with independent-samples t-tests. Associations between generational status and infant sleep behaviors were tested using multinomial logistic regression with infant age (in months) as a covariate.

Results

Adherence to American Academy of Pediatrics recommended sleep practices differed by generational status, $\chi^2(6) = 29.59$, $p < .001$. The highest adherence was among non-immigrant mothers (75.0%) and second-generation mothers (74.8%), and the lowest among first-generation mothers (56.0%). The proportion of mothers unfamiliar with the guidelines differed by generational status: 14.7% among first-generation mothers, 5.1% among non-immigrant mothers, and 2.9% among second-generation mothers. First-generation mothers were significantly more likely to co-sleep with their infants compared to non-immigrant mothers ($p = .046$), whereas second-generation mothers did not differ significantly from either group. Second-generation mothers reported higher DSI than first-generation mothers ($p < .001$), with no differences in ESI ($p = .81$). First and second generation mothers were more likely to report their infant's sleep as a moderate/serious problem compared to non-immigrant mothers. (OR = 2.53, 95% CI 1.30–4.93, OR = 1.79, 95% CI 0.95–3.36 respectively).

Conclusions

Generational status differences in infant sleep behaviors and safe-sleep guideline adherence were evident, with first-generation mothers reporting higher rates of co-sleeping, less familiarity with safe sleep guidelines and a higher perception of their child's sleep as problematic compared to second-generation and non-immigrant mothers. These patterns underscore the need for culturally informed, generational status-specific safe-sleep education to support more consistent adoption of recommended practices across diverse immigrant families. Because these patterns emerged within a relatively homogeneous sample, future research should examine whether disparities are even larger in more socioeconomically and racially diverse populations.

Presenting Author
Natasha Patel (Canada)

Authors
Natasha Patel (Canada); Gerhard Klösch (Austria); CR2S Sleep Health Crash Course Working Group: Theresa Bengough (Austria); Birgit Breninger (Austria); Sergio Cocchia (Canada); Thomas Czypionka (Austria); Glen Davies (Canada); Thomas Herdin (Austria); Kate Lawrence (UK); Suzanne Lewis (Canada); Silvia Miano (Switzerland); Cátia Reis (Portugal); Megan Thomas (Canada); Luci Wiggs (UK); Osman Ipsiroglu (Canada/Austria) CR2S Sleep Health Crash Course Working Group: Theresa Bengough (Austria); Birgit Breninger (Austria); Sergio Cocchia (Canada); Thomas Czypionka (Austria); Glen Davies (Canada); Thomas Herdin (Austria); Kate Lawrence (UK); Suzanne Lewis (Canada); Silvia Miano (Switzerland); Cátia Reis (Portugal); Megan Thomas (Canada); Luci Wiggs (UK); Osman S. Ipsiroglu (Canada/Austria) (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P100

Title
Sleep Health Education in Canadian Community Healthcare Professions: A Preliminary Cross-Disciplinary Literature Analysis

Introduction
Sleep disturbances and disorders (SDDs) are highly prevalent in pediatric populations, impair wellbeing and development, contribute to long-term health consequences, and disrupt family ecology. Yet, sleep and sleep health remain largely absent from public health primary prevention targets. Consequently, SDDs in children and adolescents are overlooked in community settings, as healthcare professionals (HCPs) receive little to no formal training in sleep health, including the recognition and support of sleep-related behaviour management. To address this gap, the Children's Right to Sleep Initiative [ChildRight2Sleep, CR2S] developed a Sleep Health Crash Course (SHCC) for community-level HCPs, with the long-term goal of integrating sleep health into medical- and allied-healthcare education. To support SHCC development, the present analysis explored curriculum-based sleep health education for community-level HCPs in Canada, with a focus on defined learning objectives, required knowledge, and clinical competencies.

Materials and Methods
Two structured search pathways were used across 10 professions: midwifery, occupational therapy, speech-language pathology, behavioural analysis, respiratory therapy, nursing,

pharmacy, and social work. We conducted a manual search of 130 webpages with search terms “sleep” and “sleep disorders” across professional associations, regulatory bodies, societies, and curricula in British Columbia (BC) and Alberta. In parallel, we conducted an artificial intelligence (AI) search using Microsoft Copilot, asking, “How is sleep addressed in [healthcare profession] education in Canada?” For quality control and verification, we are consulting the BC Children’s Hospital profession leaders.

Results

Sleep-specific competencies were identified in two professions pre-graduation (occupational therapy and respiratory therapy) and one profession (social work) post-graduation, the remaining seven professions referenced sleep indirectly (e.g., wellness, mental health, self-care) or not at all within their respective curricula. Manual review of 130 association-, regulatory-, and society-based profession webpages identified no standard sleep-related teaching courses and few mentions of sleep disorders in curricula. All professions offer post-graduate and continuing professional development opportunities via sleep-related webinars, certificates, and workshops. Respiratory therapy included structured training in sleep-disordered breathing and diagnostic testing; however, no further investigation into other SDDs were mentioned.

Conclusions

Despite the social and clinical impact of SDDs, sleep education is largely missing from community-level HCP curricula in BC and Alberta. The secondary AI-based search confirms this gap extends across Canada, where sleep is treated as subspecialty knowledge acquired post-graduation. Consequently, prevention-focused teaching concepts are absent, and service delivery continues to reiterate obsolete understandings, contributing to exponentially increasing referrals to specialized sleep clinics with prolonged wait times. From the CR2S perspective, a transdisciplinary, transgenerational, and transcultural sleep health training model at the community level is urgently needed to position sleep health as a core pillar of public health, an approach aligned with the World Health Organization International Classification of Diseases 11th Revision, which reframes sleep within a sleep–wake disorders framework (Chapter 07) with eight subchapters. The ICD-11 subchapters identify “harmonized” core symptoms, creating collaboration opportunities between community-based HCPs and specialists to jointly identify conditions and deliver non-medical interventions and/or tailor medical interventions.

Presenting Author
Natasha Patel (Canada)

Authors
Natasha Patel (Canada); Elizabeth Keys (Canada); David Wensley (Canada); Suzanne Lewis (Canada); Osman S. Ipsiroglu (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P47

Title
First-Line Sleep Recommendations in Children with Neurodevelopmental and/or Mental Health Disorders - Caregiver Goals/Concerns, Distress, and Experienced Barriers

Introduction
Pandemic-related increases in pediatric sleep clinic wait times highlighted gaps in community-level identification and management of sleep-wake behaviours, prompting development of a structured intake form. The intake framework enabled review of clinical symptoms in context with medication interactions/side effects/missed adverse drug reactions (73%), consequences of comprehensive (previous/conducted) bloodwork analysis (84%), common causes of sleep disturbances and/or disorders (SDDs) and guided first-line treatment recommendations (FLTRs). A FLTR efficiency analysis showed improvements in all cases (except one), with a >40% improvement in physician/caregiver-identified individual Sleep Disturbance Scale for Children (SDSC)-associated symptoms (IPSA abstract #1). This secondary analysis examines barriers to successful FLTR implementation before recommending broader community-based screening.

Materials and Methods
We conducted 45 semi-structured caregiver interviews of children with neurodevelopmental and/or mental health disorders (2024/7-2025/1). Intake data informed interview content: caregiver goals/concerns (coded with the conceptual expanded BEARS framework), caregiver distress (0–100;0 not distressed, 50 neutral, 100 very distressed), child wellbeing (0–100;0 excited, 50 neutral, 100 devastated), described sleep/wake behaviours, core FLTRs (medication-timing changes, nasal NaCl-spray, iron and Vit-D3 supplementation), and SDSC scores.

Results
40/45 patients had ≥1 neurodevelopmental and/or mental health diagnosis (ADHD n=22; ASD n=20; anxiety n=16; intellectual disability n=7; genetic/neurological conditions n=6); 33/45

were subject of polypharmacy (mean:3; median:2; range:1-8). Caregiver distress (mean:73; median:75) and child wellbeing (mean:56; median:53) were expected to improve with treatment (mean:32, median:3; mean:27, median:27). 81% (188/232) of reported goals (n=119) and concerns (n=113) were child-focused, with improvements in excessive daytime sleepiness and sleep regularity/duration accounting for 44% and 19%, respectively. 21/31 wanted to access the medical report. FLTR barriers were reported in 31/45 cases (age group analysis: 12: 48%). Barriers were categorized in four groups: routine/consistency; tolerability; hesitancy due to conflicting information/perceptions; infection. For iron supplementation 14/12/3/1, medication reconciliation 8/0/0/0 (induced by professional advice 3/8), nasal spray 6/5/3/0, and vitamin D_3 supplementation 4/1/0/0. Families encountering barriers identified more goals/concerns related to bedtime problems (23% vs 6%), sleep regularity/duration (28% vs 17%), and a higher proportion of caregiver-centered goals/concerns (22% vs 13%).

Conclusions

The structured intake framework enables common causes of SDDs to be captured and addressed with FLTRs already at the community-level referral stage. Improvement depends on family adherence; despite providing parents with clinical summary reports that outlined the FLTRs, 69% of families experienced barriers implementing them and three families reported receiving contradictory information from other healthcare professionals. Age-group analyses of barriers and caregiver goals/concerns suggest additional risk factors related to broader family disruptions (e.g. single-parent households, multiple children with developmental disabilities, puberty-related challenges). These findings highlight the need for community-level support to facilitate FLTR implementation. Providing healthcare professionals and caregivers with barrier-related handouts, alongside practical clinical tips may improve adherence, reduce distress, promote coordinated care, and potentially reduce reliance on tertiary/quaternary sleep services.

Acknowledgements

Health Innovation Funding Investment Award 2022, University of British Columbia; Pacific Autism Family Network [https://www.pacificautismfamily.com/] for partnering in the Sleep Health Crash Course development.

Presenting Author
Natasha Patel (Canada)

Authors
Natasha Patel (Canada); Elizabeth Keys (Canada); David Wensley (Canada); Suzanne Lewis (Canada); Osman S. Ipsiroglu (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P48

Title
First-line Treatment Recommendations for Sleep Disturbances/Disorders (SDDs) in Patients with Neurodevelopmental and Mental Health Disorders – Evaluation Data from a Quality Improvement Study

Introduction
Pediatric sleep clinic wait times increased exponentially during the pandemic, driven by a high number of referrals and reflecting knowledge gaps for community-based healthcare professionals. To address this systemic challenge, we developed a structured, mobile-friendly intake form to capture sleep-wake behaviours at referral and review to what degree screening, and first-line treatment recommendations (FLTRs) could be conducted at the community-level. A pilot study found a high prevalence of insomnia in combination with polypharmacy (≥1med), and the in-depth analysis of patients showed “restlessness” and iron deficiency as key visible and measurable markers, respectively, along with chronic insomnia, sleep-disordered breathing, and parasomnias. This study reviews the efficiency of FLTRs, which could be provided at the community-level following screening.

Materials and Methods
As part of the BC Children’s Hospital Sleep-Wake Behaviour Clinic quality improvement project, 45/47 follow-up phone interviews were conducted approx. three months after the last appointment with caregivers of children with neurodevelopmental and/or mental health disorders (2024/7-2025/1). Interviews were informed by intake forms collecting qualitative (goals/concerns, patient/caregiver demographics; sleep/wake-behaviours; medications) and quantitative (Sleep Disturbance Scale for Children (SDSC)) information, as well as FLTRs shared after the first assessment. In semi-structured interviews (25min, range:20-30min), core SDSC symptoms were reviewed.

Results
40/45 patients had ≥1 neurodevelopmental/mental health diagnosis (ADHD: n=22; ASD: n= 20;

anxiety: n=16; intellectual disability: n=7; genetic/neurological conditions: n=6), polypharmacy: 33/45 (mean:3; median:2; range:1-8), clinical assessment report requested: 36/45, existing bloodwork: 37/45, and recommended bloodwork: 8/45. Following FLTR implementation, 44/45 patients showed improvement; one reported no change, and none worsened. Across 289 SDSC-associated physician/caregiver-identified individual core symptoms at intake, 40.5% showed an improvement while 58% remained unchanged and 1.5% worsened due to additional factors (e.g. a viral infection). FLTRs included iron supplementation for sleep-related movement disorders (38/45; 84%), medication reconciliation for sleep onset/maintenance (21/45; 47%), nasal spray for sleep-disordered breathing (19/45; 42%), and vitamin D3 supplementation for sleep quality (16/45; 36%), with improvements among implemented cases of 67% (21/31), 77% (10/13), 67% (10/15), and 64% (9/14), respectively.

Conclusions

The intake forms structured the first step of the assessment: the analysis of SDSC-based clinical information, standardized bloodwork investigations, and a review of medication side effects and/or interactions identified the most common causes of sleep disturbances and/or disorders. Further, the FLTRs led to a >40% improvement in physician/caregiver-identified, treatable somatic SDSC symptoms. These findings show that with structured knowledge dissemination on screening and FLTRs, community-level providers can identify the relationship between day- and nighttime behaviours and deliver timely FLTRs beyond diagnosis-driven referral pathways. Building on this work, we are developing a “screening beyond diagnosis-focused care” course for community providers based on the ICD-11 Sleep–Wake Disorders (Chapter 07), alongside a health economic model to reduce wait times, enable earlier care, and decrease sleep-related family burden.

Acknowledgements

Health Innovation Funding Investment Award 2022, University of British Columbia; Pacific Autism Family Network [https://www.pacificautismfamily.com/] for partnering in the Sleep Health Crash Course development.

Presenting Author
Ness Hewertson (United Kingdom)

Authors
Ness Hewertson (United Kingdom); Thomas Maycock (United Kingdom); Kazeem Olalekan (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P101

Title
Regional Variation in Access to Melatonin for Children in England

Introduction
Access to prescribed melatonin through NHS services varies across England due to variation in the local formulary status. Formulary status for medications in England is stratified by a traffic light system: Red, Amber or Green (RAG) status. Green medications may be initiated by GPs without specialist involvement. Amber medications can be initiated by specialists with GPs supporting ongoing prescribing. Red medications are specialist initiated and specialist prescribed only, with no involvement of the GP. Grey medications are not listed on the formulary. Black medications have been evaluated and are “not recommended” for prescription.

Materials and Methods
The formulary status of melatonin was reviewed across the 42 Integrated Care System (ICS) in England. Data was collected regarding whether any melatonin products are listed on the formulary for the treatment of sleep disorders in children and, more specifically, the RAG status for generic modified release (MR) melatonin, Slenyto (MR mini-tablet preparation), immediate release (IR) tablet (generic or brand e.g. Adaflex) and liquid melatonin for the treatment of sleep disorders in children. Most formularies were publicly available on the internet and a small number were available on request.

Results
For the treatment of sleep disorders in children, 79% of ICSs had at least one melatonin preparation listed on the formulary, 19% listed melatonin with the status varying within the ICS, and 2% did not have any melatonin products listed on the formulary.

RAG status for specific melatonin products varied widely across England. The majority of ICSs had a single formulary status for each melatonin product across the ICS. In a minority of ICSs, the formulary status varied within the ICS (ranging from 7% to 15% of ICSs, depending on the melatonin product).

The majority of ICS formularies designated melatonin an Amber status. Generic MR melatonin was designated Amber in 71% of ICSs, Slenyto was Amber in 60% of ICSs, IR tablets were Amber in 64% of ICSs and liquid melatonin was Amber in 62% of ICSs. In 5% of ICS formularies listed the melatonin status as both Green and Amber, with the status varying within the ICS locality.

Melatonin was designated Grey or Black status in 9-31% of ICS formularies, varying according to the melatonin product listed (generic MR melatonin in 10%, Slenyto in 31%, IR tablets in 12% and liquid melatonin in 9%).

Melatonin was designated Red status in 2-14% of ICS formularies, varying according to the melatonin product listed (generic MR melatonin 9%, Slenyto 2%, IR tablets in 10% and liquid melatonin 14%). Melatonin was designated both Red and Amber in 2-7% of ICS formularies, with the status varying within the ICS locality.

Conclusions

The formulary status of melatonin varies widely across England, leading to inequity of access in the NHS. This data demonstrates that melatonin is currently designated Amber on the majority of ICS formularies. The NHS plans to create a single national formulary (SNF) in England, detailed in the 10-Year Health Plan, by 2027 with the aim of promoting consistent prescribing practices nationally.

Presenting Author
Nicolo Pini (Bangladesh)

Authors
Snigdho Protim Sikder (Bangladesh); Chanel Malette (United States); Lynn Chen (United States); Tasnim Kabir Ayrin (Bangladesh); Reun Tanzin Oshru (Bangladesh); Reza Mostary Akhter (Bangladesh); Shafiqul Ameen (Bangladesh); Seonjoo Lee (United States); Fahmida Tofail (Bangladesh); Monica Ordway (United States); Shams El Arifeen (Bangladesh); William P. Fifer (United States); Ayesha Sania (United States); Nicolò Pini (United States)

Presentation Day and Board Number
Saturday, April 11, 2026 | P82

Title
Agreement Between Parent-Reported and Actigraphy-Measured Sleep Dimensions Among Toddlers in Bangladesh

Introduction
Parent-reported dimensions of child sleep are widely used in sleep research. However, prior research has demonstrated limited agreement with objective assessments in high-income settings. Patterns of disagreement and measurement error may differ across cultural contexts due to variation in sleep norms, parental beliefs, and expectations around sleep. Understanding context-specific agreement between parent-reported and objective sleep measures is important for selecting appropriate tools in clinical and research settings. In this study, we examined agreement between parent-reported sleep measures and wrist-worn actigraphy among Bangladeshi toddlers.

Materials and Methods
Data were collected from a prospective cohort of toddlers in Dhaka, Bangladesh (the Dhaka Sleep Study). This analysis includes sleep measures collected at enrollment, when children were 18–24 months of age. Objective sleep was measured using wrist-worn actigraphy (Philips Actiwatch 2), worn for a median of 6 days (interquartile range: 5–7). Actigraphy data were manually scored using Philips Actiware software. Parent-reported sleep was assessed using the Brief Infant Sleep Questionnaire–Short Form (BISQ-SF). We evaluated the agreement of three sleep dimensions: bedtime, nighttime sleep duration, and daytime sleep duration. Mean differences between parent-reported and objective measures were evaluated using paired-sample t-tests; distributional differences were visualized using violin plots; and patterns of measurement error were examined using Bland–Altman plots.

Results

A total of 177 toddlers with usable actigraphy data were included in the analysis. Based on actigraphy, mean bedtime was 11:52 pm, nighttime sleep duration averaged 9 h 31 min, and daytime sleep duration averaged 1 h 35 min. Compared with actigraphy, BISQ measures indicated significantly earlier bedtimes (mean difference −39.2 minutes; 95% Confidence Interval, CI −47.9 to −30.6; $p<0.001$) and shorter nighttime sleep duration (mean difference −34.4 minutes; 95% CI −45.0 to −23.9; $p<0.001$). In contrast, parents reported longer daytime sleep duration than actigraphy (mean difference +40.5 minutes; 95% CI 31.4 to 49.6; $p<0.001$). Violin plots demonstrated greater dispersion in BISQ-reported sleep dimensions compared with actigraphy-derived measures, particularly for daytime sleep duration. Bland–Altman analyses showed systematic overestimation of daytime sleep by parent report, with evidence of proportional bias such that overestimation increased with longer daytime sleep duration. For bedtime and nighttime sleep duration, mean biases were present, but differences were otherwise symmetrically distributed around the mean, indicating no clear proportional trends.

Conclusions

Parent-reported measures showed limited agreement with actigraphy across key sleep dimensions among Bangladeshi toddlers. Parents reported modestly earlier bedtimes, substantially shorter nighttime sleep duration, and longer daytime sleep duration compared with actigraphy. This pattern contrasts with findings from high-income settings, including U.S. cohorts, where parents typically report much earlier bedtimes and longer sleep duration. These findings highlight context-specific limitations of parent-reported sleep measures. Objective sleep measurement is recommended for accurate estimation of sleep dimensions in this context. Parent-reported questionnaires remain useful for large-scale epidemiologic studies where objective measurement is not feasible.

Acknowledgements

We thank the participating families and the field team members who identified families through door-to-door visits and support the ongoing retention efforts of this cohort.

Presenting Author
Nuttida Panichapat (Thailand)

Authors
Nuttida Panichapat (Thailand)

Presentation Day and Board Number
Saturday, April 11, 2026 | P49

Title
Ventilatory Pathways and Transition from Tracheostomy to Noninvasive Ventilation in Pediatric Congenital Central Hypoventilation Syndrome: A Single-Center Experience from Thailand

Introduction
Congenital central hypoventilation syndrome (CCHS) is a rare disorder of autonomic control of breathing caused by pathogenic variants in the PHOX2B gene. Long-term ventilatory support is essential, but the choice of ventilatory pathway varies across health-care systems. In settings with limited access to noninvasive ventilation (NIV) interfaces, monitoring, and home respiratory support, tracheostomy-based ventilation is often used early in life to ensure safety. Data describing longitudinal ventilatory trajectories and transition to NIV in such contexts remain limited. We aimed to describe ventilatory pathways, tracheostomy-to-NIV transition, and respiratory outcomes in children with CCHS managed at a tertiary center in Thailand.

Materials and Methods
We performed a retrospective review of children diagnosed with genetically confirmed CCHS at King Chulalongkorn Memorial Hospital between July 2005 and June 2025. Data included demographics, genotype, age and mode of presentation, initial ventilatory modality, longitudinal changes in ventilatory support, transition to NIV, comorbidities, and outcomes from standardized annual respiratory evaluations incorporating clinical assessment and sleep-focused respiratory monitoring. Findings were summarized descriptively.

Results
Seven children with PHOX2B-confirmed CCHS were identified. Six (85.7%) presented in the neonatal period, while one (14.3%) was diagnosed at 7 years of age after evaluation for sleep-related breathing abnormalities. Four (57.1%) were male. All patients had polyalanine repeat mutations, and no non-polyalanine repeat mutations were identified. Six children (85.7%) initially required positive-pressure ventilation via tracheostomy. During follow-up, three (50%

of those with tracheostomy) transitioned to NIV following structured reassessment protocols, at a mean age of 6.5 years. Annual respiratory evaluations prompted adjustments to ventilatory management in all patients. At the most recent follow-up, six (85.7%) required ventilatory support during sleep only, while one (14.3%) remained dependent on continuous ventilation. Comorbidities included Hirschsprung disease in one (14.3%) and neurodevelopmental delay in four (57.1%). No clinically significant cardiac arrhythmias or mortality were observed.

Conclusions

In this single-center experience from Thailand, tracheostomy-based ventilation was commonly used in early life for children with CCHS. With structured longitudinal surveillance and sleep-focused reassessment, selected patients transitioned to less invasive support and achieved sleep-limited ventilation. These findings support adaptable ventilatory pathways with regular reassessment to optimize long-term care for CCHS, particularly in settings with limited resources.

Presenting Author
OLUWATOSIN OLORUNMOTENI (Nigeria)

Authors
Oluwatosin Olorunmoteni (Nigeria); Funmito Fehintola (Nigeria); Funmilayo Omodara (Nigeria); Temisola Oyelakin (Nigeria)

Presentation Day and Board Number
Saturday, April 11, 2026 | P51

Title
"We too need it": Perspectives of stakeholders on the co-development of the SLEEP MORE Adolescent Sleep Intervention Programme

Introduction
Sleep problems in adolescents have been declared a public health issue globally.1 In Africa, adolescent sleep problems have been reported, and a few researchers have described the prevalence and contributory factors to adolescent sleep problems in Africa. However, there is a dearth of programs or studies aimed at developing or implementing educational interventions to improve the sleep health of Nigerian adolescents. Therefore, this study describes the process for the co-development of the Sleepmore project, an educational module targeting in-school Nigerian adolescents.

Materials and Methods
Using a qualitative methodology, we conducted 16 adolescent FGD sessions, 8 teachers' FGD sessions, and 15 parent in-depth interviews involving eight secondary schools in Osun state. We used the Medical Research Council framework for the development and evaluation of interventions. We engaged with stakeholders to understand their perspective regarding the sleep needs of adolescents, the meaning and components of adolescent sleep health, the barriers and hindrances to healthy sleep, the consequences of poor sleep in adolescents, and practical tips for promoting healthy sleep in adolescents. Data was recorded with an audio recorder, transcribed verbatim, and coded inductively using the ATLAS.ti software. Thematic analysis was conducted thereafter to identify the major themes.

Results
The age of the adolescents ranged from 10 to 18 years, younger adolescents aged 10–11 years are about 9%, while those aged 17 years and above made up roughly 23% of the total participants. The teachers' ages ranged from 22 to 70 years, with the majority falling within the middle-aged bracket (30–55 years). Overall, the adolescents parents and teachers

demonstrated moderate awareness of sleep's importance but lacked formal education on healthy sleep practices. The adolescents were open to learning with their preferred delivery mode being audio-visual (like radio, poster, music) and social media-based education. Teachers consistently noted that many students struggle with inadequate sleep, which manifests as frequent dozing during morning classes. From the parents' perspective, a major concern that today's adolescents are not getting enough quality sleep. Many observed that young people now stay up late watching television, chatting online, or spending time on their phones, which disrupts their sleep routines. They noted that lack of sleep often leaves students tired, distracted, and struggling to concentrate in school. Beyond academics, parents worried that poor sleep habits affect their children's physical, emotional, and even spiritual well-being. They emphasized the need for better guidance on sleep, suggesting that schools include sleep education in their curriculum and that parents actively encourage healthy rest at home.

Conclusions

The co-developed Sleepmore program is highly needed. Future studies should assess the program's effectiveness and impact.

Acknowledgements

We acknowledge all stakeholders who participated in co-developing the educational intervention module.

Presenting Author
Óscar Sans Capdevila (Spain)

Authors
Gonzalo Pin Arboledas (Spain); Milagros Merino Andreu (Spain); Pedro Javier Rodríguez Hernández (Spain); Marta Furones García (Spain); Lucía Monfort Belenguer (Spain); Teresa de la Calle Cabrera (Spain); Guillermo Benito Ruiz (Spain); Óscar Sans Capdevila (Spain); Carlos Javier Egea Santaolalla (Spain)

Presentation Day and Board Number
Friday, April 10, 2026 | P28

Title
Recommendations for the Treatment of Insomnia in Individuals Under 18 Years Old with Autism Spectrum Disorder

Introduction
There are no centralized European, evidence-based protocols for detecting, assessing and treating sleep disorders in individuals under 18 years old with ASD.

Materials and Methods
This work has been developed by six scientific societies (Spanish Pediatric Association, Spanish Society for Sleep, Child Psychiatry Society of the Spanish Pediatric Association, Spanish Society of Pediatric Neurology, Spanish Society of Outpatient Pediatrics and Primary Care and Spanish Federation of Sleep Medicine Societies) and one patient association (Autism Spain). The main evidence in this population was reviewed, including objective laboratory or home-based studies and subjective records, using a modified and adapted Delphi process that enabled expert consensus.

Results
The expert group recommends using (1) preliminary assessment tools before starting treatment, such as a sleep log for the 2 weeks prior to first visit, and blood tests including: complete blood count, iron levels, ferritin, transferrin, thyroid hormones, and celiac disease antibodies. (2) Establishing proper personalized sleep hygiene, with an evaluation of the sleep environment (light, noise, temperature, sensory alterations, affective environment). (3) Systematic use of personalized cognitive-behavioral therapies (CBT). Once these measures have been appropriately implemented for at least two weeks, a new sleep log should be completed for another two weeks. After this initial approach, a detailed algorithm for

pharmacological treatment is proposed, distinguishing measures between sleep-onset insomnia and sleep-maintenance insomnia.

Conclusions

The expert consensus recommends beginning insomnia treatment in individuals under 18 years old with ASD using sleep hygiene measures and cognitive-behavioral therapies. In cases of sleep-maintenance insomnia, pediatric prolonged-release melatonin (PRM) is recommended as the first-line medication, starting at 2 mg/day and adjusting up to 10 mg/day if needed. If problems persist, additional medications such as alimemazine, risperidone, or clonidine may be added, with dose adjustments based on response. These treatments should be evaluated and adjusted using periodic follow-ups and daily sleep diaries. In cases of sleep-onset insomnia, immediate-release melatonin (IRM) or PRM is recommended. IRM should begin at an initial dose of 5 mg/day and be reduced to 2 mg/day if effective or increased to 7 mg/day when not effective.

Presenting Author
Óscar Sans Capdevila (Spain)

Authors
Gonzalo Pin Arboledas (Spain); Milagros Merino Andreu (Spain); Pedro Javier Rodríguez Hernández (Spain); Marta Furones García (Spain); Lucía Monfort Belenguer (Spain); Teresa de la Calle Cabrera (Spain); Guillermo Benito Ruiz (Spain); Óscar Sans Capdevila (Spain); Carlos Javier Egea Santaolalla (Spain)

Presentation Day and Board Number
Saturday, April 11, 2026 | P02

Title
Consensus Document On The Management Of Insomnia In People With Autism Spectrum Disorder (ASD) Under The Age Of 18

Introduction
People with ASD have a high prevalence of sleep problems that affect their quality of life and behavior. Treatment is mainly based on cognitive-behavioral therapies and habit modification techniques. However, to date, there is still no guidelines on the management of insomnia in people with ASD in relation to the use of medications and other products, either at the national (Spanish) or European level. In order to address this problem, an expert group representing six scientific societies (Spanish Pediatric Association, Spanish Society for Sleep, Child Psychiatry Society of the Spanish Pediatric Association, Spanish Society of Pediatric Neurology, Spanish Society of Outpatient Pediatrics and Primary Care and Spanish Federation of Sleep Medicine Societies), and one patient association (Autism Spain) has been created to develop a consensus document that can meet the need for knowledge about pharmacological and non-pharmacological treatments. The consensus document was led by the Spanish Pediatric Association (AEP) and the Spanish Society for Sleep (SES).

Materials and Methods
A modified and adapted Delphi process was carried out to reach consensus on definitions and treatments for insomnia in people with ASD under the age of 18. Literature reviews, consultations, and evaluations were carried out in several rounds, culminating in a final consensus on the key aspects of the document.

Results
Advice was developed on tools that allow the type of insomnia to be diagnosed before starting treatment, along with recommendations on non-pharmacological treatment and

sleep hygiene measures. As the final objective of the consensus, two pharmacological treatment algorithms were designed, one for maintenance insomnia or onset and maintenance insomnia and another for cases of sleep-onset insomnia in the study population.

Conclusions

The expert consensus recommends initiating treatment for insomnia in people with ASD under the age of 18 with sleep hygiene measures and cognitive-behavioral therapies. In cases of sleep-maintenance insomnia, pediatric extended-release melatonin (PedPRM) is recommended as a medication, starting with a dose of 2 mg/day and adjusting up to 10 mg/day as needed. If problems persist, medications such as alimemazine, risperidone, or clonidine may be added, adjusting the doses according to response. These treatments should be evaluated and adjusted after periodic and daily checks/sleep logs. In cases of sleep-onset insomnia, immediate-release melatonin (IRM) or PedPRM is recommended. IRL should start with an initial dose of 5 mg/day and be reduced to 2 mg/day if effective or increased to 7 mg/day if ineffective.

Presenting Author
Osman S. Ipsiroglu (Canada)

Authors
Osman S. Ipsiroglu (Canada); CR2S ADHD & Sleep Working Group: Serge Brand (Switzerland); Oliviero Bruni (Italy); Stefan Clemens (USA); Alexander Dück (Germany); Thomas Dye (USA); Olivia Hill (Canada); Gerhard Klösch (Austria); Kate Lawrence (UK); Mauro Manconi (Switzerland); Silvia Miano (Switzerland); Julian Mollin (Germany); Lino Nobili (Italy); Judith Owens (USA); Natasha Patel (Canada); Angelika Schlarb (Germany); Barbara Schneider (Germany); Alessandro Silvani (Italy); Rosalia Silvestri (Italy); Susan Smith (USA); Mark Stein (USA); Margaret Weiss (USA) CR2S ADHD & Sleep Working Group: Serge Brand (Switzerland); Oliviero Bruni (Italy); Stefan Clemens (USA); Alexander Dück (Germany); Thomas Dye (USA); Olivia Hill (Canada); Gerhard Klösch (Austria); Kate Lawrence (UK); Mauro Manconi (Switzerland); Silvia Miano (Switzerland); Julian Mollin (Germany); Lino Nobili (Italy); Judith Owens (USA); Natasha Patel (Canada); Angelika Schlarb (Germany); Barbara Schneider (Germany); Alessandro Silvani (Italy); Rosalia Silvestri (Italy); Susan Smith (USA); Mark Stein (USA); Margaret Weiss (USA) (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P102

Title
ADHD and Sleep within the ICD-11 framework: A Scoping Review of ADHD Clinical Practice Guidelines and a call for describing ADHD as a “sleep/wake disorder

Introduction
The diagnosis and treatment of ADHD in children and adolescents is centred on daytime functioning and the associated impairments in cognitive development and academic performance, despite disrupted and restless sleep being a frequent complaint. Further, children and adolescents with ADHD may compensate for daytime somnolence through increased fidgeting or overactivity, thereby mimicking and/or intensifying existing ADHD symptoms of over- or hyperactivity. However, despite more than 45 years of discussion, there is still no consensus on how sleep should be incorporated into ADHD diagnostic procedures.

In 2022, the World Health Organization expanded the International Classification of Diseases 10th Revision (ICD-10) concept of sleep disorders, and introduced with the ICD-11, a novel concept of “sleep/wake-disorders” (SWD) tying day- and nighttime behaviours together and opening a new perspective on how to integrate sleep behaviours in ADHD diagnostic procedures.

We performed a scoping literature review of paediatric ADHD guidelines to ascertain whether the concept of sleep has been included at all, and if so, to review diagnostic recommendations and treatment. Post hoc, we appraised our research question in light of considering ADHD as a SWD.

Materials and Methods

A scoping literature review was carried out according to the methodological framework of Arksey and O'Malley and the JBI Manual for Evidence Synthesis. The protocol was registered with Open Science Framework (10.17605/OSF.IO/KHYME); the search was carried out in three databases (Embase, Medline, and PsycINFO), and two independent researchers screened the results. Guidelines were included if they were published by a larger governing body (e.g., regional, national, or international medical organizations/societies). Guidelines that focused only on the treatment of ADHD or for use in adults (≥ 18 years old) were excluded.

Results

20 pediatric ADHD guidelines were included, published between 1991 and 2025. 19/20 (95%) guidelines included sleep; all 19 discussed sleep disturbances/disorders (SDDs) as a potential side effect of ADHD medications. SDDs were mentioned as a comorbidity in 12/19 (63%), as a differential diagnosis in 7/19 (36%), and as a potential characteristic symptom/sign in 3/19 guidelines. Only 1/19 guidelines specified a measure to assess sleep patterns (sleep diary), in this case, to monitor medication side effects.

Conclusions

95% of the identified guidelines mentioned SDDs as a potential side effect of ADHD medications, and fewer guidelines acknowledged SDDs as a comorbidity, differential diagnosis, or as a symptom/sign of ADHD. In the context of ICD-11 and giving rise to investigating ADHD-associated 24/7 restlessness, the findings of our scoping review highlight the need for a consensus approach to the description, assessment, and management of SWDs in the ADHD population. In particular, the subchapter on sleep-related movement disorders (SMRDs code 7A87) suggests reviewing and further phenotyping SDDs not only from a general SWD perspective, but with the focus on "nighttime restlessness", by including "SRMDs due to a medical condition" as a differential diagnostic consideration.

Presenting Author
Osman S. Ipsiroglu (Canada)

Authors
Olivia Hill (Canada); Catherine Boudreau (Canada); Scout McWilliams (Canada); Chamin Wanasundara (Canada); Melvin Chin-Hao Chan (Canada); Alexander Mark Weber (Canada); Jacqueline Purtzki (Canada); Osman S. Ipsiroglu (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P50

Title
Sleep & Concussion: Clinical Findings and Patient Voices

Introduction
Concussions are common among adolescents, particularly athletes, an estimated 35,000 children and adolescents aged 5–19 sustained a concussion in 2022 in Canada. Pre-existing sleep disorders have recently been recognized as an independent predictor of persisting symptoms following concussion. This exploratory, two-part study examined sleep-related challenges in adolescents with persistent post-concussion symptoms. In this poster, we are reviewing the take home messages and how this data can inform clinical practice.

Materials and Methods
For part one, we reviewed the charts of 49 patients (ages 12 to 18 years) who were treated for persistent post-concussion symptoms at the provincial Adolescent Complex Concussion Clinic (G.F. Strong Rehabilitation Centre). Data was collected prospectively, including demographics, concussion history, and sleep-related items on three standardized questionnaires (Rivermead Post-Concussion Symptoms Questionnaire (RPQ); Kutcher Adolescent Depression Scale; PROMIS Anxiety Scale). For part two, we conducted semi-structured interviews with 12 patients from the same clinic.

Results
Part one found that 71% of patients reported moderate to severe fatigue at intake on the RPQ. Sleep disturbances positively correlated with restlessness (RPQ: Spearman's $r=0.554$, $p<0.01$), fatigue (Kutcher Adolescent Depression Scale; Spearman's $r=0.566$, $p<0.01$), and bedtime worrying (PROMIS Anxiety Scale; Spearman's $r=0.360$, $p<0.05$). Part two revealed three key themes: persistent sleep disturbances combined with irritability and restlessness, challenges related to restricted daily activities, and a desire for clearer explanations of care plans. Across

both components, difficulty initiating sleep, restlessness, and daytime impairment were prominent sleep-related symptoms experienced by the patients.

Conclusions

These findings highlight the need for targeted assessment and management of sleep disorders/disturbances as an essential component of care for adolescents experiencing prolonged post-concussion symptoms. To our knowledge, current guidelines recommend sleep as a therapeutic intervention post-concussion, however there are not proactive recommendations regarding sleep health screening prior to injury. From a knowledge dissemination and prevention perspective, we suggest a stepped care approach that begins with a preliminary screening of pre-existing sleep disorders/disturbances by coaches or teachers prior to the initiation of sports or physical education classes. The following five questions could be a starting point: how do you sleep, is your physical performance and/or daytime functioning affected by your sleep, how do you feel when you wake up, was your sleep refreshing, how many hours of sleep do you get on average. Any red flags should be pursued by the primary care provider with a structured screening of sleep history (familial sleep and early childhood sleep history) and the seven main International Classification of Diseases 11 sleep-wake categories.

Acknowledgements

Canadian Sleep Society/Canadian Sleep and Circadian Network Trainee Project 2021 Grant

Presenting Author
Osman S. Ipsiroglu (Canada)

Authors
Osman S. Ipsiroglu (Canada); Nadine Emara (Austria); Nadiia Luzhetska (Austria); Solin Salhe (Austria); Sebastian Spiegl (Austria); Helena Wehling (Austria); Gerhard Klösch (Austria); CR2S Case Simulation Working Group: Gülçin Benbir Şenel (Turkey), Thomas Czypionka (Austria), Nato Darchia (Georgia), Kate Lawrence (United Kingdom), Silvia Miano (Switzerland), Natasha Patel (Canada), Damian Przybycień (Poland), Mary Anne Ryan (Ireland), Irine Sakhelashvili (Georgia), Megan Thomas (Canada), Margaret Weiss (USA), Luci Wiggs (United Kingdom); Thomas Penzel (Germany) CR2S Case Simulation Working Group: Gülçin Benbir Şenel (Turkey), Thomas Czypionka (Austria), Nato Darchia (Georgia), Kate Lawrence (United Kingdom), Silvia Miano (Switzerland), Natasha Patel (Canada), Damian Przybycień (Poland), Mary Anne Ryan (Ireland), Irine Sakhelashvili (Georgia), Megan Thomas (Canada), Margaret Weiss (USA), Luci Wiggs (United Kingdom); Thomas Penzel (Germany) (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P53

Title
Teaching Sleep Disturbances and/or Disorders to Medical Students within the ICD-11 Framework. The CR2S Case Simulation Project

Introduction
Sleep disturbances and/or disorders (SDDs) impair cognitive, emotional, social, academic, and neurological development and negatively impact affected individuals' and families' life trajectories. While the need for education and knowledge dissemination on SDDs is obvious, pediatric and adolescent sleep are largely absent from standard curricula creating a cascade of blind spots causing gaps in academic and professional training.

The Children's Right to Sleep initiative [ChildRight2Sleep, CR2S-Initiative, www.cr2s.org] started as a collaboration between pediatric sleep medicine providers from Europe, Canada, and the USA, and within four years became an initiative with experts from 24 countries. Our initiative aligns with the goals of the World Health Organization (WHO), which introduced sleep/wake-behaviours as a novel holistic 24/7-framework in the International Classification of Diseases, 11th Revision (ICD-11). At the Medical University of Vienna, we analyzed selected case vignettes (CV) from a CR2S perspective, driven by the subjective theme "Would I be

satisfied if this was my child/grandchild?"; we are presenting here the main take home messages (THMs)."

Materials and Methods

Our CV analysis question was "Will ICD-11 change clinical practice and improve the quality-of-service delivery in sleep medicine/psychology?" THMs were initially worked out by medical students. Members of the CR2S-Case Simulation Working Group subsequently revised convergent themes of the THMs across individual cases through three modified Delphi Rounds (ongoing work).

Results

10 CVs from different regions (Canada, Georgia, Poland, Türkiye, Switzerland, and UK) were analyzed. Converging main themes with high agreement rates were: (1) Recognizing the intertwined relationship between daytime functioning, overall wellbeing, and SDDs as factors affecting the life trajectory were missed. (2) Prescription of daytime behaviour-focused medications without considering SDDs in differential diagnostic considerations. (3) Prescription of medications (e.g. melatonin, clobazam) which may support sleep onset without investigations. (4) Fragmented care coordination. (5) Gaps in sleep health education. (6) Timely diagnosis of SDDs despite impaired daytime functioning. The themes (1) Disrupted family dynamics, (2) Reevaluation and/or quality control of cases require further discussion on perspectives. Further there was a full agreement that two CVs demonstrated impressively how school psychology could treat trauma-related insomnia that delayed diagnosis of SDDs and more controversial discussions on how unsuccessful medication attempts can cause loss of trust in the medical system and, in consequence, how adolescents drifted to self-medication and criminality.

Conclusions

The diverse and randomly selected CVs from Europe and North America demonstrate the challenges in diagnosis and treatment of SDDs at a systemic level. There is a high-level agreement on identified gaps in healthcare system delivery and more controversial discussions on how to rate some symptoms and the ecology of settings. This ambiguity may cause delays in diagnosis and treatment of SDDs, as conceptually the physiologic role of SDDs has not been implemented as a 24/7-framework in clinical assessment concepts, as suggested by ICD-11. Currently, we are reviewing to what degree a stepped care model (with triage, screening, and diagnostic assessments) would change clinical practice.

Presenting Author
Osman S. Ipsiroglu (Canada)

Authors
Osman S. Ipsiroglu (Canada); Nadine Emara (Austria); Nadiia Luzhetska (Austria); Solin Salhe (Austria); Sebastian Spiegl (Austria); Helena Wehling (Austria); Gerhard Klösch (Austria); CR2S Case Simulation Working Group: Gülçin Benbir Şenel (Turkey), Thomas Czypionka (Austria), Nato Darchia (Georgia), Kate Lawrence (United Kingdom), Silvia Miano (Switzerland), Natasha Patel (Canada), Damian Przybycień (Poland), Mary Anne Ryan (Ireland), Irine Sakhelashvili (Georgia), Megan Thomas (Canada), Margaret Weiss (USA), Luci Wiggs (United Kingdom); Thomas Penzel (Germany) CR2S Case Simulation Working Group: Gülçin Benbir Şenel (Turkey), Thomas Czypionka (Austria), Nato Darchia (Georgia), Kate Lawrence (United Kingdom), Silvia Miano (Switzerland), Natasha Patel (Canada), Damian Przybycień (Poland), Mary Anne Ryan (Ireland), Irine Sakhelashvili (Georgia), Megan Thomas (Canada), Margaret Weiss (USA), Luci Wiggs (United Kingdom); Thomas Penzel (Germany)

Presentation Day and Board Number
Saturday, April 11, 2026 | P54

Title
What Information do Parents, and Professionals in the Health Care and Educational System Need: Teaching Sleep Disturbances and/or Disorders to Medical Students within the ICD-11 Framework. The CR2S Case Simulation Project

Introduction
Children and adolescents with neurodevelopmental/mental health disorders receiving services from community-based transdisciplinary teams are particularly affected by sleep disturbances/disorders, however, despite this, sleep is largely absent from standard medical and allied-health professional curricula. The Children's Right to Sleep initiative [ChildRight2Sleep, CR2S-Initiative, www.cr2s.org] started as a collaboration between pediatric sleep medicine providers from Europe, Canada, and the USA, and within four years became an initiative with experts from 24 countries. Our initiative aligns with the goals of the World Health Organization (WHO), which introduced sleep/wake-behaviours as a novel holistic 24/7 framework in the International Classification of Diseases, 11th Revision (ICD-11). At the Medical University of Vienna, we analyzed selected case vignettes (CV) from a CR2S perspective, driven by the subjective theme "Would I be satisfied if this was my child/grandchild?"; we are presenting here the main take home messages (THMs).

Materials and Methods

Our teaching-related CV analysis question was which “knowledge dissemination” information could improve sleep medicine/psychology service delivery. THMs were initially worked out by medical students. Members of the CR2S-Case Simulation Working Group subsequently revised convergent themes of the THMs across individual cases through three modified Delphi Rounds (ongoing work).

Results

10 CVs from different regions (Canada, Georgia, Poland, Türkiye, Switzerland, and UK) were analyzed. Converging main action items with high agreement ratings were: (1) community-level SDD triage/screening tools are missing , (2) SDD-related evaluation/quality control investigations should be considered (given the fact that SDDs are dynamic - e.g. bloodwork investigations), (3) the integration of sleep into a prevention concept is essential, and (4) the integration of sleep into medical and psychology curricula is foundational to implement sleep medicine/psychology at primary and secondary care levels. Further, there was consensus for a workplan: (1) Missing harmonized and validated information, approved by expert teams and scientific societies, for recognizing core SDD symptoms already at the community-level via acknowledgement of (1a) daytime functioning from an SDD perspective (identified as a priority), (1b) parasomnias as indicators of SDDs, (1c) restlessness affecting transitions to sleep and sleep quality, (1d) core signs of sleep disordered breathing.

Conclusions

Our first analyses of the diverse, randomly selected CVs from Europe and North America demonstrated not only the challenges in diagnosis and treatment of SDDs at secondary and tertiary service levels, but also critical gaps in understanding sleep/wake-behaviour related information at the community level . This collection demonstrates a (possibly universal) systemic failure: observations of daytime functioning are associated with an underlying condition/disorder, while the role of SDDs, as a prodromal symptom and/or aggravating co-morbidity, is only considered after multiple failures. The consequence of this THM is to revisit standard medical and allied-health professional curricula, current knowledge dissemination activities, and in collaboration with advocacy groups, rewrite the narratives of SDDs from an ICD-11-based perspective.

Presenting Author
Paula Kageyama (Brazil)

Authors
Paula Kageyama (Brazil); Alan Eckeli (Brazil)

Presentation Day and Board Number
Saturday, April 11, 2026 | P55

Title
Prevalence of Sleep Difficulties in Early Adolescence and Its Association With Their Socioeconomic Status: Evidence from a Brazilian Birth Cohort.

Introduction
Sleep disorders are highly prevalent during childhood and adolescence. Among the multiple determinants of sleep health, the impact of socioeconomic status (SES) has received comparatively less attention in the literature. Previous studies suggest that the effects of SES on sleep are more pronounced during adolescence than in early childhood. These findings have been supported by both objective measures, such as actigraphy, and caregiver reports. Accordingly, SES has been identified as an important mediator of sleep problems in adolescents. In addition, children living in areas with limited access to medical services are less likely to meet recommended sleep guidelines. The objective of this study was to evaluate the prevalence of sleep difficulties and their association with SES in adolescents from a birth cohort followed up until school age.

Materials and Methods
This retrospective analytical cohort study used data from the school-phase of the BRISA project (Ribeirão Preto, Brazil). In this cross-sectional cohort, the prevalence of sleep difficulties was estimated using the Sleep Disorders Scale for Children (SDSC). Socioeconomic status (SES) was assessed using the Brazilian Economic Classification Criteria (Classes A, B1, B2, C1, C2, and DE, with A being the highest SES and DE being the lowest).

Results
The sample included 2,448 adolescents, 52.3% boys, mean age 11.8 years. The prevalence of sleep difficulties in the sample was 53.9%. Prevalence was significantly higher among groups with lower SES: 44.4% in class A, 49.1% in class B1, 56.7% in class B2, 53.0% in class C1, 58.5% in class C2, and 64.9% in class DE ($p < 0.001$). Compared with the lowest SES (DE; ≤0.77 minimum wage), higher SES was a protective factor against sleep difficulties (Class A: OR = 0.43, 95% confidence interval [CI] = 0.27–0.71, $p < 0.001$; Class B1: OR = 0.52, 95% CI = 0.33–

0.83, p = 0.006; Class C1: OR = 0.61, 95% CI = 0.39–0.96, p = 0.03). No significant associations were observed for the remaining socioeconomic categories (Class B2: OR = 0.71, 95% CI = 0.45–1.10; Class C2: OR = 0.76, 95% CI = 0.48–1.22). In addition, increasing age was associated with a significant reduction in the prevalence of sleep disorders ($p < 0.001$).

Conclusions

This study found a higher prevalence of sleep-related difficulties among adolescents from lower socioeconomic classes (C2 and DE) in a large Brazilian sample. These findings reinforce the notion that sleep problems represent an important public health issue. Accordingly, targeted interventions and effective strategies to improve sleep-related outcomes in this population are needed.

Acknowledgements

We thank the National Council for Scientific and Technological Development (CNPq) for funding the researcher's scholarship. We also thank Dr. Fernando G. Stelzer, Dr. Marina Foresti, and Dr. Tabata L. G. Tavares for their valuable suggestions and comments.

Presenting Author
Pernilla Garmy (Sweden)

Authors
Pernilla Garmy (Sweden); Johanna Lewis (Sweden); Maria Berglund (Sweden); Eva-Lena Einberg (Sweden)

Presentation Day and Board Number
Saturday, April 11, 2026 | P56

Title
What Affects Sleep at Age Eleven? Children's Experiences of Promoting and Challenging Factors

Introduction
The aim of this study was to investigate how eleven-year-old children experience factors that promote and challenge their sleep.

Materials and Methods
A qualitative interview study was conducted using six focus groups with a total of 25 eleven-year-old children. Data were collected through semi-structured interviews and analysed using qualitative content analysis. The study was approved by the Swedish Ethical Review Authority, and written informed consent was obtained from both the children and their legal guardians prior to data collection.

Results
Preliminary findings showed that school-related stress, conflicts and misunderstandings in relationships, and screen use negatively affected sleep among eleven-year-old children. Existential thoughts were described as making it difficult to fall asleep. When experiencing insufficient sleep, children reported feeling tired and having less energy. Strategies described for improving sleep included engaging in physical activity, seeking safe and comforting situations, listening to music and relaxing, and having a sleep environment they felt comfortable in.

Conclusions
The preliminary findings highlight that sleep among eleven-year-old children is influenced by both psychosocial and environmental factors. School-related stress, relational challenges, and screen use may undermine sleep, while supportive strategies that promote feelings of safety, relaxation, physical activity, and a comfortable sleep environment may facilitate better

sleep. These findings underscore the importance of listening to children's own perspectives when developing health-promoting and preventive sleep interventions.

Acknowledgements

The authors would like to thank the children who participated in this study for sharing their experiences.

Presenting Author
Phanthila Sitthikarnkha (Thailand)

Authors
Phanthila Sitthikarnkha (Thailand); Narong Simakajornboon (United States); Aisaku Nakamura (United States); Md Monir Hossain (United States)

Presentation Day and Board Number
Saturday, April 11, 2026 | P57

Title
Factor Associated with Hypoventilation in Children with Obstructive Sleep Apnea

Introduction
Obstructive sleep apnea (OSA) is characterized by recurrent episodes of upper airway obstruction during sleep, leading to intermittent hypoxemia and sleep disruption. Children with OSA may manifest as obstructive hypoventilation with partial airway obstruction associated with hypercapnia. Hypercapnia during sleep may have consequences that affect children's quality of life, which may differ from those observed in adults. However, there is limited data on hypoventilation in pediatric patients with OSA. This study aims to assess the factors associated with hypoventilation in children with OSA.

Materials and Methods
This retrospective observational study was conducted on patients aged 2 to 18 years diagnosed with OSA by diagnostic polysomnography (PSG) at Cincinnati Children's Hospital Medical Center, from January 1, 2000, to June 30, 2025. Hypoventilation was defined by at least 25% of total sleep time being spent with end-tidal pCO2 levels exceeding 50 mmHg.

Results
During the study period, 760 children were diagnosed with OSA, of whom 432 (56.8%) were male, with a mean age of 10.7±4.7 years. PSG identified hypoventilation in 54 children with OSA (7.1%). Comparing to OSA children without hypoventilation (C), OSA children with hypoventilation (H) were older (12.4±0.6 yo [H] vs 10.7±4.7 yo [C] , P=0.005), had higher proportion of male (77.8% [H] vs 55.2% [C], P = 0.001) and higher body mass index (BMI) z-score (2.3±1.6 [H] vs 1.4±1.5 [C], P=0.001). No significant differences were observed in clinical symptoms, including restless sleep, parasomnia, nighttime awakening, enuresis, difficulty waking up, and morning headache, between children with and without hypoventilation. Children with hypoventilation demonstrated higher apnea-hypopnea index (18.9±23.5/hr [H]

vs 7.4±10.9/hr [C], P < 0.001), higher arousal index (16.0±11.8/hr [H] vs 12.0±8.7/hr [C], P=0.004) and lower periodic limb movement index (1.6±6.2 [H] vs 3.2±6.5 [C], P < 0.001).

Conclusions

Among children with OSA, hypoventilation was significantly more prevalent in male, older children and children who had higher BMI, AHI and arousal index. We speculate that OSA children with hypoventilation may have a different phenotype than those without hypoventilation. Further studies are needed to assess consequences and treatment responses in OSA children with hypoventilation.

Acknowledgements

This study was supported by the Cincinnati Children's Hospital Research Foundation

Presenting Author
Pierre Cnockaert (Belgium)

Authors
Pierre Cnockaert (Belgium); Julien Da Purificaçao (Belgium); William Poncin (Belgium)

Presentation Day and Board Number
Saturday, April 11, 2026 | P58

Title
Rehabilitation approaches for children with obstructive sleep-disordered breathing: a systematic review and meta-analysis

Introduction
Rehabilitation is increasingly recognized as a potential component of pediatric obstructive sleep-disordered breathing management. Interventions such as physical activity, or targeted upper airway approaches like myofunctional therapy, have been proposed. The magnitude and clinical relevance of their impact on SDB severity in children remains unclear.

Materials and Methods
A systematic search was conducted on MEDLINE, Scopus, Embase, and PEDro. After removal of duplicates and abstract screening, 120 randomized controlled trials (RCTs) and non-randomized studies (nRCTs), including retrospective studies, were reviewed. The risk of bias was assessed using the RoB 2 for RCTs and ROBINS-I V2 for the nRCTs. Effect sizes were expressed as the mean difference (95% CI) for RCTs only and as the mean change (95% CI) for the nRCTs. The primary outcome was the apnea-hypopnea index (AHI). When available, mean and nadir SpO2 were included as secondary outcomes. This study was conducted in accordance with the PRISMA guidelines.

Results
Eight articles were included, most of which had serious risks of bias. Identified interventions were myofunctional therapy (n=7) and exercise (n=1). Regarding RCTs, no statistically significant change was found on AHI (3 studies, MD: -1.62 (-5.23; 1.98), p=0.19) and average SpO2 (2 studies, MD: 0.38 (-6.67; 7.43), p=0.62). Only one study reported SpO2 nadir. Regarding nRCTs, no significant change was found regarding AHI (5 studies, mean change: -0.50 (-1.41; 0.41), p=0.20) or average SpO2 (2 studies, mean change: 0.29 (-3.37; 3.94), p=0.50). A statistically significant change was found regarding SpO2 nadir (3 studies, mean change: 1.10 (0.43; 1.77), p=0.02).

Conclusions

Both RCTs and nRCTs showed no impact of currently investigated active strategies on AHI and average SpO2. nRCTs revealed a statistically significant impact of rehabilitation approaches on nocturnal SpO2 nadir.

Acknowledgements

P.C. is a Research Fellow (ASP-REN mandate) of the F.R.S. – FNRS (Fonds de la Recherche Scientifique, Belgium).

Presenting Author
Pin-Wei Chen (United States)

Authors
Pin-Wei Chen (United States); Dipriya A. Pillai (United States); Michael S. Campagna (United States); Catherine M. Avitabile (United States); Sara King-Dowling (United States); Stephanie L. Mayne (United States); Scott M. Haag (United States); Jonathan A. Mitchell (United States)

Presentation Day and Board Number
Saturday, April 11, 2026 | P59

Title
A Cloud-Based Tool for Raw Wearable Sensor Data to Enable Sleep Scoring in Pediatric Populations

Introduction
Sleep is critical for healthy childhood development, yet measurement using wearables often relies on proprietary scoring algorithms. The field is increasingly shifting towards wearable devices that provide raw sensor data and open-source scoring approaches to promote rigor and reproducibility. However, this typically requires data science expertise and fluency in multiple programming languages. To advance access to such methods, we created the Modular Actigraphy Platform (MAP). This is a cloud-based tool designed to make the processing of raw sensor data easier and more efficient with or without a data scientist. Here, we describe how MAP was developed and evaluate its performance by applying it to raw sensor data collected from pediatric samples and comparing it to offline data processing.

Materials and Methods
MAP is cloud-agnostic, but for our deployment, we used the Google Cloud Platform. MAP is comprised of four core modules: (1) data pre-processing, (2) non-wear detection, (3) sleep scoring, and (4) physical activity scoring. Each module is Docker-containerized, with Google Kubernetes Engine providing orchestration and Argo managing workflow execution. The first version of MAP incorporated the established GGIR algorithm since this provides complete end-to-end raw sensor data processing to derive estimates of sleep and physical activity. The second version added the Monitor Independent Movement Summary (MIMS) algorithm to enhance physical activity scoring. We restructured the GGIR computational workflow and MIMS algorithm to operate within our four distinct containerized modules. This was achieved using a Software Development Life Cycle framework consisting of unit testing (module verification), integration testing (interaction among modules), and system testing (validating specifications). Following these tests, we completed user acceptance testing in two phases -

alpha testing in a pre-production environment (17 test files) and beta testing in production environments (686 files from 4 pediatric cohorts) - to assess processing performance. We processed tri-axial acceleration data from wrist-worn ActiGraph and GENEActiv devices and compared MAP's outputs to offline data processing benchmarks. Alpha testing used 17 CHOP-generated files (4.9 GB, 1–14 days). Beta testing assessed functionality and scalability on real-world datasets from Sleep and Growth Study 2, Teen Neighborhood Activity Patterns and Sleep, The Physical Activity and Cancer Experience Studies, and The Pulmonary Hypertension Pilot, a total of 686 files (up to 14 nights each, 30–50 Hz sampling).

Results

MAP passed unit, integration, and system testing, indicating it was stable and secure. Alpha and Beta testing demonstrated that the pre-processing module was the most computationally demanding, consuming 41–61% of the total processing time. Beta testing using GGIR required up to 60 CPUs and 120 GiB of memory for preprocessing and 40 CPUs/100 GiB for the other modules. Performance evaluations showed that MAP-based GGIR was 1.6 to 2.9 times faster than offline processing. For MIMS processing, up to 20 CPUs and 500 GiB of memory were allocated, and it was 2.4 to 14 times faster than offline processing.

Conclusions

MAP is an efficient computational platform that integrates open-source scoring algorithms to process raw sensor data for wearable sleep and physical activity estimation in clinical research.

Acknowledgements

MAP was developed at the Children's Hospital of Philadelphia's Research Institute. The Clinical and Translational Science Award at CHOP (CTSA@CHOP) oversees the development and dissemination of MAP through the Digital Health Innovation Core. The CHOP Arcus team provides computer science and platform engineering expertise to host, operate, and securely maintain MAP; whereas the Data Science and Biostatistics Unit (DSBU) at CHOP provides data science expertise to help maintain and update the functionality of MAP and the biostatistics expertise to analyze the phenotypic data generated. Finally, a CHOP-based scientific steering committee of faculty and staff with expertise in sleep and physical activity research provides guidance on the scientific direction of MAP. The development of MAP was supported by grants from the National Institutes of Health. The CTSA@CHOP is supported by NIH/NCATS UL1 TR001878. The Sleep and Growth Study 2 (S-Grow2) is supported by NIH/NICHD R01 HD100421. The Pulmonary Hypertension studies are supported by NIH/NHLBI K23HL150337. The Teen NAPS project is supported by NIH/NHLBI K01 HL155860. The PACE studies are supported by grants from the University of Pennsylvania Institute for Translational Medicine

and Therapeutics (NIH/NCATS UL1 RR024134), the CHOP Center for Pediatric Clinical Effectiveness, and the American Institute of Cancer Research. Arcus is supported by the CHOP Research Institute.

Presenting Author
Rachel Langley (United Kingdom)

Authors
Katherine Smith (United Kingdom); Sarah Matthews (United Kingdom); Rachel Langley (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P94

Title
A Brief Intervention for Young People with Anxiety-Related Sleep Problems

Introduction
In Southampton there are two non-medical routes for follow up after a sleep assessment: sleep practitioner input for evidence-based, behavioural sleep programmes; and clinical psychology input for psychological therapy (including CBT-i and ACT for insomnia).

Some young people sit between these services: those who have low level but significant anxiety that impacts on their sleep at bedtime and overnight.

We sought to create a time-limited, clinically effective and cost-efficient service to meet this need.

Materials and Methods
We formulated a six to eight week intervention conducted on a 1:1, fortnightly basis. This novel programme incorporated elements of psychoeducation, ACT and CBT, with the option to include behavioural programmes where appropriate.

Sessions were run by a specialised Assistant Psychologist and supervised by our Clinical Psychology team. Two outcome measures were employed at the start and end of the intervention. A subjective sleep score was captured by asking young people to rate their sleep out of 10 (with 10 being the best sleep and 0 being the worst sleep), and a YP CORE score (YP CORE is a 10-item questionnaire assessing mental health and emotional wellbeing in young people) was also completed.

Results

Over the course of a year, 96% of patients with completed data rated their sleep as better at the end of the intervention than at the start, while 86% of patients scored more favourably on a measure of general mental health at the end of the intervention. The average subjective sleep score increased from 4 to 7. The average YP CORE score decreased from 19 to 16 (note: on the YP CORE, lower scores indicate better functioning).

Conclusions

The results of this project demonstrate that a time-limited psychological intervention for anxiety can produce clinically meaningful improvements in self-rated sleep scores and overall emotional wellbeing in young people. Offering this package proved a valuable resource within the clinical psychology provision of our service and has enabled us to reduce waiting list times for this cohort. This model offers a clinically effective and cost-efficient programme to support young people experiencing anxiety that impacts on their sleep at bedtime and overnight.

Acknowledgements

Southampton Children's Sleep Disorder Service, under the leadership of Dr Vanessa Hewertson, with additional thanks to Professor Catherine Hill.

Presenting Author
Rachel Ngan Yin Chan (Hong Kong)

Authors
Wai Han Sun (Hong Kong); Sijing Chen (Hong Kong); Shirley Xin Li (Hong Kong); Joey Wing Yan Chan (Hong Kong); Yun Kwok Wing (Hong Kong)

Presentation Day and Board Number
Saturday, April 11, 2026 | P60

Title
Effectiveness of Combined Cognitive Behavioral Therapy for Insomnia and Acceptance and Commitment Therapy for Youth with Insomnia and Anxiety: A Pilot Randomized Controlled Trial

Introduction
Insomnia is a prevalent sleep disorder affecting approximately 10% of youth and serves as a significant risk factor for the development of mood disorders. Notably, anxiety frequently co-occurs with insomnia, with around 40% of youth experiencing insomnia also reporting anxiety symptoms. Emerging evidence suggests that Cognitive Behavioral Therapy for Insomnia (CBT-I) effectively reduces insomnia severity, but shows limited efficacy in improving anxiety outcomes. Conversely, Acceptance and Commitment Therapy (ACT) has been demonstrated to be effective in alleviating anxiety symptoms. This study aims to evaluate the effectiveness of a combined approach using CBT-I and ACT in reducing insomnia and anxiety symptoms in youth with both conditions, compared to CBT-I alone.

Materials and Methods
This study is a randomized, two-arm, parallel-group controlled trial involving youth aged 15 to 24 years presenting with both insomnia (Insomnia Severity Index ≥ 9) and anxiety (Generalized Anxiety Disorder-7 ≥ 10) symptoms. Participants were randomly assigned to either the CBT-I + ACT group or the CBT-I group. Each treatment arm consisted of six group-based sessions, delivered face-to-face, lasting 90-120 minutes each, with group sizes ranging from 6 to 8 participants. Outcomes were assessed at baseline and post-treatment, with the primary outcome being the Clinician-rated Hamilton Anxiety Rating Scale (HAM-A). Analyses were conducted using the intention-to-treat principle, with treatment effects evaluated through linear mixed models.

Results
A total of 92 youths (mean age: 18.4 ± 2.7 years; female: 68%) with insomnia and anxiety

symptoms were enrolled, with 45 assigned to the CBT-I group and 47 to the CBT-I + ACT group. Of the participants, 83% attended the group therapy sessions, and 75% completed the post-intervention assessments. Both groups demonstrated significant improvements in HAM-A scores (Pre: CBT-I + ACT vs. CBT-I: 13.2 ± 1.2 vs. 14.4 ± 1.49; Post: 6.60 ± 0.78 vs. 7.17 ± 0.96) after the intervention; however, no significant time by group interaction effects were observed. Similar improvements were noted in self-reported Generalized Anxiety Disorder-7 scores, the Hospital Anxiety and Depression Scale, and the Insomnia Symptoms as well Dysfunctional Belief score.

Conclusions

The integration of sleep-focused interventions with anxiety-focused modalities did not yield additional benefits for anxiety outcomes in this population. The seemingly contradictory approaches of cognitive strategies and acceptance strategies may have diluted the overall treatment effects. Future research should investigate the mechanisms underlying the efficacy of each component to better understand their individual contributions to treatment outcomes.

ClinicalTrials.gov: NCT06156306

Presenting Author
Rachel Pétrin (Canada)

Authors
Rachel Pétrin (Canada); Marie-Hélène Pennestri (Canada); Geneviève Forest (Canada)

Presentation Day and Board Number
Friday, April 10, 2026 | P103

Title
Determinants of Daytime and Nighttime Sleep in Preschool-Aged Children: A Structural Equation Modeling Approach

Introduction
Children's daytime sleep patterns are marked by significant inter and intra-individual variability in the preschool years, a developmental period characterized by the transition from biphasic to monophasic sleep. During this period, daytime and nighttime sleep constitute distinct but interrelated components of the 24-hour sleep system, yet the factors shaping their organization remain poorly understood. Therefore, this study examined child, parental, socio-cultural, and environmental determinants of daytime and nighttime sleep in preschool-aged children using structural equation modeling (SEM).

Materials and Methods
Parents of 760 children aged 2 to 6 years living in Quebec, Canada, completed an online survey assessing child demographics, childcare history, nap practices, parental beliefs about napping, and children's sleep. Daytime Sleep was modeled as a latent construct reflecting nap timing (weekday and weekend), duration (weekday and weekend), and regularity. Nighttime Sleep was modeled as a latent construct reflecting bedtime, wake time, sleep duration, and sleep quality (Children's Sleep Habits Questionnaire total score). Confirmatory factor analyses were conducted to establish the latent constructs. SEM was then used to test predictors of Daytime and Nighttime Sleep simultaneously and to estimate their association.

Results
The final SEM model demonstrated good fit (RMSEA < .07, CFI and TLI > .90, SRMR < .08). Stronger positive and weaker negative parental napping beliefs emerged as significant predictors across both domains. Specifically, children whose parents endorsed more favorable and less negative napping beliefs showed earlier, longer, and more regular naps, as well as earlier bedtimes, longer nighttime sleep, and fewer reported sleep difficulties. Similarly, child age was associated with both sleep domains, with younger children showing

higher levels of Daytime and Nighttime Sleep. In contrast, other predictors showed domain-specific associations. Male sex and mandatory napping practices in childcare were uniquely associated with Daytime Sleep, predicting earlier, longer, and more regular naps, but were not independently related to Nighttime Sleep. Daytime and Nighttime Sleep factors were positively correlated, indicating that sleep characteristics across the two domains tended to co-occur. The final model explained 81% of the variance in Daytime Sleep and 28% of the variance in Nighttime Sleep.

Conclusions

Daytime Sleep in preschool-aged children was strongly explained by child, parental, and contextual factors, whereas Nighttime Sleep appeared to involve additional unmeasured processes. Parental beliefs about napping emerged as a consistent correlate across both sleep domains, suggesting that caregiver cognitions may shape not only daytime sleep practices but also broader patterns of sleep organization across the 24-hour cycle. Other predictors showed domain-specific associations, highlighting potentially distinct mechanisms underlying daytime and nighttime sleep regulation during the preschool years. Together, these findings support conceptualizing sleep during preschool years as an integrated yet differentiated 24-hour system.

Acknowledgements

This project was funded by the Social Sciences and Humanities Research Council (SSHRC) [633-2022-00060]. Marie-Hélène Pennestri holds a Canada Research Chair (II) in Pediatric Sleep.

Presenting Author
Rachel Pétrin (Canada)

Authors
Rachel Pétrin (Canada); Geneviève Forest (Canada); Lucie Malevergne (France); Gabrielle Fréchette-Boilard (Canada); Evelyne Touchette (Canada); Sabine Plancoulaine (France); Marie-Hélène Pennestri (Canada); Amandine E. Rey (France); Stéphanie Mazza (France)

Presentation Day and Board Number
Saturday, April 11, 2026 | P61

Title
Latent Napping Profiles and Nocturnal Sleep Outcomes in Preschool-Aged Children: A Cross-Cultural Comparison Between Quebec and France

Introduction
Napping trajectories vary widely across preschool-aged children and reflect the interplay between biological maturation and environmental constraints. As children transition from biphasic to monophasic sleep, daytime naps gradually decline, but the timing and expression of this transition show substantial inter-individual variability. While prior research has identified distinct napping profiles in early childhood, much less is known about how these profiles differ across cultural contexts with distinct institutional nap policies, and how they relate to nocturnal sleep regulation. This study aimed to identify latent napping profiles in preschool-aged children from Quebec and France, compare their distribution across contexts and age groups, and examine associations between napping profiles and nocturnal sleep outcomes.

Materials and Methods
Parents of 1,463 preschool-aged children from Quebec (n = 575) and France (n = 888) completed questionnaires assessing their child's daytime and nighttime sleep. Parents reported weekday and weekend napping frequency, timing, duration, and acceptance at both school and home, as well as nocturnal sleep characteristics, including bedtime, wake time, sleep onset latency, and total sleep duration. Latent Class Analyses (LCA) were conducted separately by country and age group (3-, 4-, and 5-year-olds) to derive empirically based napping profiles that captured patterns across settings. Associations between napping profiles and nocturnal sleep variables were examined using multivariate analyses of variance (MANOVAs), conducted separately for weekdays and weekends within each country and age group.

Results

Across cohorts and age groups, five recurrent napping profiles emerged: Regular Nappers (daily naps at school and home), Frequent Nappers (frequent school naps and occasional home naps), School Nappers (naps occurring only in the school context), Home Nappers (naps occurring only at home), and Non-Nappers. Although the qualitative nature of these profiles was similar across countries, their distribution differed markedly. Quebec children were most often classified as School Nappers across all ages. In contrast, French children showed greater heterogeneity, with higher proportions of Home and Non-Nappers, particularly at ages four and five. Napping profiles were systematically associated with weekday nocturnal sleep but showed few differences on weekends. Compared with other napping profiles, School Nappers tended to exhibit later bedtimes and wake times, longer sleep onset latency, and shorter nocturnal sleep duration. These associations were most pronounced in Quebec, where school-based napping persisted across ages, and were attenuated or absent in France at older ages, when nap opportunities were reduced.

Conclusions

These findings suggest that nap cessation in preschool-aged children is not solely a maturational milestone, but a context-dependent process shaped by institutional practices. Persistent school-based naps beyond biological need may reflect sleep-wake misalignment, particularly on weekdays when institutional schedules constrain children's sleep opportunities. Flexible, developmentally sensitive nap practices that accommodate individual variability may better support healthy 24-hour sleep regulation during early childhood.

Acknowledgements

This project was funded by the French National Research Agency (ANR-22-CE28-009-01) and the French Institute for Public Health Research-IRESP (ENSOM-preschool). Financial support was also received from the Samuel de Champlain program of the Fonds de Recherche du Québec for travel between Quebec and France.

Presenting Author
Rachna Tiwari (United States)

Authors
Andrew Schultz (United States); Rachna Tiwari (United States)

Presentation Day and Board Number
Saturday, April 11, 2026 | P62

Title
Impaired awakenings for hypoglycemic episodes in an Adolescent with Type 1 Diabetes Mellitus

Introduction
A17-year-old male referred by his primary care provider to Sleep clinic due to an inability to wake for hypoglycemia alarms. The patient has been diagnosed with type 1 Diabetes Mellitus since the age of 4, and his mother has been addressing overnight hypoglycemic episodes(feeding juice box, changing insulin sites) since that time, with the patient barely waking up to address these events since the diagnosis. His mother presented with concerns that when he starts college, he won't have the assistance and her attempts of training him to wake with alarms haven't been successful. They have tried changing alarm sounds like barking dogs, thunder, sirens, light alarms, amplifying alarms, and bed-shaking alarms, with none of them being effective. His bedtime routine consists of taking 0.2 mg clonidine before bed, changing his clothes, and brushing his teeth. His bedtime is between 12 a.m. and 1 am and falls asleep within 5 to 15 minutes. He usually gets 8-9 hours of sleep at night. Mom has not heard him snore, but is not rested when he wakes up in the morning. He is not a restless sleeper and denies any symptoms of RLS or nocturnal limb movements. There is a family h/o RLS. Other comorbidities include ADHD, anxiety, depression, and oppositional defiant disorder.

Materials and Methods
Due to his concerns, a sleep study with parasomnia montage was obtained, which did not show any significant sleep disorder breathing events. The overall AHI was of 1.1 events/hr, a mean o2 saturation of 95%, lowest of 93%, no hypoventilation, no clinically significant periodic limb movements with PLMI of 0 events/hr. Sleep latency of 51 minutes, REM latency of 238.5 minutes, WASO of 25.5 minutes, TST of 266 minutes, Sleep efficiency of 77%. Bruxism was noted during the study night. No epileptiform discharges or seizure activities were noted.

He was referred then referred to the behavioral sleep medicine service of the Health Psychology service. Because hypoglycemic episodes appeared to occur during deep sleep cycles, the treatment plan included scheduled awakenings during lighter sleep cycles. Using varying alarms on his phone, stimulus generalization was possible, which could be shifted into later sleep cycles. He successfully woke up several times at 3 hours past sleep onset. When the timing of alarms was shifted, he was less likely to awaken and became discouraged with the approach and discontinued engagement in behavioral treatment.

Results

He is now in college, and his mother has moved out of state to live with him and continues providing glucose corrections overnight. They have considered the use of a trained diabetes service dog but are not convinced that it will be able to wake him. They have sought a second opinion through another healthcare agency but are currently not engaged in any treatment. They are working with their diabetes team in specialty care with the objective of achieving better glycemic control to prevent overnight hypoglycemic episodes.

Conclusions

Hypoglycemia awareness is fairly common, occurring in approximately 25% of individuals with Type 1 diabetes (Holt, et al., 2021). This significantly increases the risk of severe hypoglycemic episodes (glucose <54 mg/dL). Pathophysiological processes are involved that can impair sympathoadrenal reactions that can in turn prevents catecholaminergic stimulation of hepatic glucose release and retention of muscle glucose absorption. Type 1 diabetes is also shown to contribute to poor sleep quality, which can in turn contribute to worse glycemic control (Pham, et al., 2024). Because this can contribute to worse short-term and long-term complications, this remains an area of further study of pathophysiology and treatment.

Presenting Author
Ramona Cordani (Italy)

Authors
Ramona Cordani (Italy); Regis Lopez (France); Paola Proserpio (Italy); Marco Veneruso (Italy); Tugdual Adam Alexandre Derre (France); Lucie Barateau (France); Laura Tassi (Italy); Yves Dauvilliers (France); Lino Nobili (Italy)

Presentation Day and Board Number
Saturday, April 11, 2026 | P63

Title
Slow-Wave Sleep Fragmentation as a Marker for Differentiating Disorders of Arousal from Sleep-Related Hypermotor Epilepsy

Introduction
Disorders of Arousal (DOAs) and Sleep-Related Hypermotor Epilepsy (SHE) share overlapping features, making differential diagnosis challenging. While video-polysomnography remains the gold standard, EEG patterns to distinguish these conditions are not yet well defined. Slow-wave sleep (SWS) fragmentation is a key marker of DOA but remain unexplored in SHE. This study assessed SWS fragmentation in DOA and SHE, its diagnostic value, and its overnight dynamics.

Materials and Methods
Eighty-seven pediatric and adult subjects with DOA (n=47; mean age 23.9 ± 13.1 years; 44.7% children) or SHE (n=40; mean age 25.1 ± 13.08 years; 27.5% children) underwent overnight polysomnography with blinded scoring. SWS fragmentation was quantified, distinguishing fast, mixed, and slow arousals, and its overnight evolution was evaluated. Groups were compared and diagnostic cutoff values for DOAs were defined using ROC curves.

Results
Total sleep time and sleep efficiency did not differ between groups. N2 sleep percentage was significantly lower in DOA than in SHE (p=0.008), whereas REM sleep percentage was higher in DOA (p=0.008). SWS percentage was comparable between groups (DOA: 23.5 % ± 6.0; SHE: 21.1 % ± 6.8; p=0.12).

SWS fragmentation was significantly higher in DOA (p

Conclusions
SWS fragmentation, particularly mixed and slow components, represents a promising

objective marker to differentiate DOAs from SHE. Quantitative SWS microstructure parameters may enhance diagnostic accuracy and provide insight into distinct pathophysiological mechanisms.

Presenting Author
Reun Tanzin Oshru (Bangladesh)

Authors
Reun Tanzin Oshru (Bangladesh); Yujing Fu (United States); Shathi Rani Roy (Bangladesh); Reza Mostary Akter (Bangladesh); Snigdho Protim Sikder (Bangladesh); Tasnim Kabir Ayrin (Bangladesh); Chanel Malette (United States); Nicolò Pini Chen (United States); Shafiqul Ameen (Bangladesh); Seonjoo Lee (United States); William P. Fifer (United States); Monica Ordway (United States); Fahmida Tofail (Bangladesh); Shams El Arifeen (Bangladesh); Ayesha Sania (United States)

Presentation Day and Board Number
Saturday, April 11, 2026 | P64

Title
Maternal Depression, Parenting Stress, and Child Sleep Outcomes Among Toddlers in Urban Bangladesh: Results from the Dhaka Sleep Study

Introduction
Sleep is fundamental for supporting children's physical and mental development. Maternal mental health is a key component of early caregiving environment and plays an important role in shaping child sleep. Maternal depressive symptoms can affect caregiving behaviors, emotional responsiveness, and consistency of daily routines that support healthy sleep practices. Parenting stress may disrupt these processes and influence both children's sleep behaviors and mother's perception of child's sleep. This study examined the associations of maternal depressive symptoms and parenting stress with objectively wearable-derived sleep dimensions and parent-reported sleep measures among toddlers living in urban Dhaka.

Materials and Methods
Data for this analysis come from an ongoing cohort study in urban Bangladesh. The present analysis includes 300 children aged 18–24 months. Objective sleep was assessed using wrist-worn actigraphy (Philips Actiwatch 2). Parent-reported sleep outcomes were assessed using the Brief Infant Sleep Questionnaire–Revised Short Form (BISQ-R SF), which assess sleep timing and duration, night waking, bedtime difficulty, and parent perception of child sleep problems. Maternal depressive symptoms and parenting stress were measured using the Edinburgh Postnatal Depression Scale (EPDS) and the Parenting Stress Index–Short Form (PSI-SF), respectively. The PSI-SF includes three subscales: parental distress, parent–child dysfunctional interaction, and difficult child. Linear regression models examined associations with bedtime, sleep duration, and night waking frequency. Ordinal logistic regression was

used to examine associations with bedtime difficulty and child sleep problems. All models were adjusted for child age, sex and family income.

Results

Mean maternal depressive symptom score was 7.4 (SD 5.3), and mean parenting stress score was 128.2 (SD 18.4). 36% of parents reported bedtime difficulty, and 21% reported their child's sleep as a problem. Maternal depressive symptoms and parenting stress were not associated with wearable-derived or parent-reported sleep measures. Higher total parenting stress was associated with greater odds of reporting more severe bedtime difficulty. Each one-point increase in total PSI-SF was associated with a 2% increase in the odds of greater bedtime difficulty (odds ratio, OR = 1.02; 95% CI 1.00–1.04; p = 0.028). When PSI subscales were examined separately, higher scores on the difficult child subscale showed a stronger association with bedtime difficulty (OR = 1.07; 95% CI 1.02–1.12; p = 0.007). Higher PSI scores were also associated with increased odds of parent-perceived sleep problems (OR = 1.03; 95% CI 1.01–1.06; p = 0.020). Maternal depressive symptoms were not associated with bedtime difficulty or parent-perceived sleep problems.

Conclusions

Higher parenting stress, specifically perceptions of having a difficult child, was associated with greater bedtime difficulty and parent-reported sleep problems. Because parenting stress and child sleep were assessed during the same data collection wave, the observed associations may also reflect child sleep difficulties contributing to parenting stress. Interventions aimed at supporting parents in managing parenting stress may improve perceived sleep difficulties and bedtime experiences.

Acknowledgements

We thank the participating families and the field teams who identified families through door-to-door visits and support the ongoing retention efforts of this cohort.

Presenting Author
Rosemary Horne (Australia)

Authors
Michelle Ip (Hong Kong); Sze Lut Cheng (Hong Kong); Okkes Patoglu (Australia); Georgina Plunkett (Australia); Lauren Nisbet (Australia); Gillian Nixon (Australia); Margot Davey (Australia); Rosemary Horne (Australia)

Presentation Day and Board Number
Saturday, April 11, 2026 | P65

Title
Age effects on respiratory characteristics in children with Prader-Willi syndrome pre and post growth hormone therapy.

Introduction
Children with Prader-Willi syndrome (PWS) are at increased risk of both central (CSA) and obstructive sleep apnoea (OSA). Studies examining the effects of growth hormone (GH) have focused on older children, however GH therapy is often initiated before the age of 2 years. We determined the effects of age on (1) the number of children diagnosed with OSA and CSA; (2) the sleep and respiratory characteristics; (3) the effects of GH on OSA and CSA.

Materials and Methods
We identified 56 children aged 2 months to 19 years with PWS who had a pre-GH screening PSG study between 1 January 2011 and 23 June 2024. Recommendations for treatment following the baseline PSG were collected. If multiple PSGs were performed, the study closest to GH initiation and the first study within a year of commencing GH were selected for analysis.

Results
The 56 children were divided into 2 groups, those under 2 years of age (n=35) and those over 2 years of age (n=21). Pre-GH, children ≥2y had more severe OSA (median OAHI 0.4 events/h IQR 0.0 – 4.0 events/h) than children <2y (median 0.0 events/h IQR 0.0-0.4 events/h, $p<0.05$). There was a trend for more children in the <2 years age group to not have OSA (85.7%) compared to the older children (61.9%, $p=0.054$), with no difference between the groups for the number of children with mild OSA and a trend for more children in the older group to have moderate/severe OSA ($p=0.09$). There was no difference between age groups for CSA (34.3% in the children < 2 years and 28.6% in the children ≥ 2 years). There was also no difference in CAHI between the age groups (<2y CAHI median 4.2 events/h IQR 2.1-9.6 events/h; ≥2y CAHI 3.2 events/h IQR 1.1-6.2 events/h).

28 children <2y and 15 children ≥2y underwent repeat PSG after commencing GH. Post-GH initiation in the <2 group, 6 children (21%) developed OSA: 4 (14%) mild OSA and 2 (7%) moderate OSA. In the ≥2 group, 3 children developed mild OSA (20%) and in 2 children with mild OSA at baseline the OAHI was reduced. In the children <2 years, 6 children (21%) no longer had CSA on the post-GH PSG, 4 children (14%) continued to have CSA and 3 children (11%) developed CSA. In the ≥2 group, 1 child no longer had CSA (6%), 5 children continued to have CSA (33%) and 2 children developed CSA (13%). There was no difference between groups for the % of children with resolved CSA after GH (p=0.39).

Conclusions

Our study confirms previous reports of the development of OSA on GH in a subset of children and highlights that despite differences in OSA severity at baseline between the age groups, initiation of GH treatment did not have any differing effects on development OSA by age. Very young children do not appear to be at higher risk of developing OSA than their older counterparts, which is reassuring clinically given that GH is typically commenced under 2 years of age in recent years.

Acknowledgements

The authors wish to thank all the parents and children who took part in this study and the staff of the Melbourne Children's Sleep Centre where the studies were conducted. Mr. Okkes Patoglu is supported by Monash University graduate scholarship. Prof Rosemary Horne is supported by a National Health and Medical Research Council of Australia Investigator Grant (1195453).

Presenting Author
Ryan Takagi (Canada)

Authors
Ryan Takagi (Canada); Lyndia Wu (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P66

Title
Multidomain arousal coordination through development

Introduction
Sleep is intuitively understood as a low arousal state, a time when the brain is less active and less responsive to the environment. However, sleep is not uniformly quiet. Arousal levels fluctuate dynamically across multiple physiological systems. These coordinated fluctuations represent a key organizing principle of sleep. The importance of understanding sleep architecture is underscored by the high prevalence of sleep disturbances, which affect approximately one-third of children and adolescents. Yet current methods to categorize sleep into discrete stages fail to capture these dynamic arousal patterns. The objective of this research is to develop a new framework to quantify arousal coordination across multiple domains. This is achieved using a data driven hidden Markov model applied to brain activity, muscle tone, eye movements, heart rate, and breathing signals.

Materials and Methods
We applied hidden Markov modeling to multidomain physiological data from 2,115 sleep studies from open-source datasets across three age cohorts: children (2-11 years, N = 249), adolescents (11-20 years, N = 239), and adults (20-65 years, N = 1627). For model training, the child and adolescent cohorts were each partitioned into three subgroups of 80 participants for independent parameter estimation. A subset of clean adult data (N= 412) was partitioned into four subgroups of 100 participants. Bayesian Information Criterion and Kullback-Leibler divergence were used to determine the optimal number of states. A covariate hidden Markov model was used to learn state transition differences for time in the recording.

Results
The optimal number of arousal coordination states was determined to be four in child and adolescent cohorts, and five states in adults. The four states included a cortically suppressed (N3-like) state with very low cortical, low motor, and moderate autonomic arousal, a globally suppressed state across all domains except cortical which was near moderate levels, a motor

decoupled (REM-like) state with high oculomotor and low motor arousal, and a globally activated (wake-like) state with all domains at high or very high levels. In all three cohorts, the learned states only partially overlapped with conventional sleep stages. State dynamics showed temporal evolution across the recording, with cortically suppressed states predominating early and motor-decoupled states emerging later in the night. Compared to adults, the child and adolescent cohorts lacked a moderate arousal state characterized by higher motor arousal.

Conclusions

This data-driven arousal coordination framework reveals age-dependent sleep architecture that extends beyond conventional staging, providing a physiologically grounded approach for characterizing sleep maturation. The emergence of the fifth state in adults suggests developmental changes in the structure and function of descending arousal pathways, likely reflecting different brain systems maturing at different rates throughout childhood and adolescence. By characterizing sleep as a coordinated multi-domain arousal phenomenon, this framework enables new strategies for understanding sleep disorders based on coordinated arousal dynamics. The framework's ability to capture previously unrecognized coordination patterns offers a potential biomarker for sleep maturation and a novel approach to diagnosing sleep disorders across the lifespan, furthering our understanding of the hidden structure of sleep.

Presenting Author
Sarah Berger (United States)

Authors
Regina Harbourne (United States); Michele Goncalves Maia (Brazil); Adriana Vergona (United States)

Presentation Day and Board Number
Saturday, April 11, 2026 | P67

Title
What Kind of Sleep is Good Sleep? Differences in Sleep and Problem-Solving Between Premature and Full-Term Infants

Introduction
Infants born premature show less mature active sleep state organization than full term infants. Active sleep may facilitate learning via synapse formation and pruning, suggesting that premature infants may miss some learning and memory sleep-related opportunities. Moderate-to-late-term premature infants (MLPT) comprise 80% of infants born preterm. MLPT lack the high incidence of neurologic/medical problems common to very-extremely preterm infants, prompting assumptions that they “catch up” developmentally. However, MLPT can display later attentional and learning problems. We compared MLPT as a model system of reduced capacity for attention, sleep, and motor control to FT to investigate the impact of napping and/or night sleep on problem solving in a compromised system.

Materials and Methods
44 FT infants (6-8 months old) and 27 MLPT infants (32-37 weeks gestation, 6-8 months corrected age) from the United States and Brazil participated to date. We taxed infants’ attentional resources with a sitting/reaching task designed to pit maintaining balance in independent sitting against inhibiting a prepotent reach to a target object. Infants reached for hidden toys five consecutive times in one location of a reaching board and then had to track the toy after a location switch. Infants wore a head-mounted eye- tracker to document visual attention. Half of the infants in each group (FT, MLPT) napped within the 2 hours prior to the test. Infants received the task again the next morning after a night’s sleep. Families used Nanit, a commercially available, infra-red, baby monitoring camera that mounts over infants’ cribs. Nanit uses a computer vision algorithm to translate movement into sleep metrics: number of wake episodes and parent visits, sleep efficiency, sleep duration.

Results

Independent samples t-tests revealed no differences between MLPT and FT for time spent asleep and sleep efficiency, but MLPT had fewer wake episodes and parent visits than FT. Researchers coded from video problem-solving behaviors. 2 (FT, PT) x 2 (nap, no nap) x 2 (pre-, post-switch trial) x 2 (session) ANOVAs with gestation and nap condition as between-subjects factors and trial and session as within-subjects factors revealed a significant main effect of trial and trial x group and session x trial x group interactions on time to look to the target; a main effect of nap condition on time to reach. A 2 (FT, PT) x 2 (nap, no nap) x 2 (session) ANOVA revealed session x group and condition x group interactions for perseveration on the switch trial.

Conclusions

Infants who napped prior to the first session were faster to problem-solve than infants who did not, but MLPT infants found the task more physically and cognitively demanding than FT infants. FT infants were better able to inhibit than MLPT infants regardless of napping. Night sleep before the second session did not compensate for not napping before the first, particularly for MLPT infants. MLPT infants, who had less active sleep, were less prepared for information consolidation in infancy—their information processing was slower during problem solving. These early differences for MLPT infants may have implications for later attentional and learning problems.

Acknowledgements

This research was supported by Grant NSF BCS #1941122 to SEB (PI) and RTH (co-PI), a Dean's Summer Research Award to SEB, and a Graduate Center of the City University of New York Doctoral Student Research Award to MGM.

Presenting Author
Sarah Blunden (Australia)

Authors
Sarah Blunden (Australia); Alexandra Metse (Australia); Jacy Hyland (Australia); Sarah Honaker (United States); Perran Boran (Turkey); Hatice Ezgi Barış (Turkey); Prudence Millear (Australia); Nalan Karabayır (Turkey); Meltem Dinleyici (Turkey)

Presentation Day and Board Number
Friday, April 10, 2026 | P104

Title
The OPTIONS Study: exploring parental preferences in infant sleep behaviour management with an Informed Choice Model of Care.

Introduction
Sleep in infants aged 6–18 months can be disrupted and may cause impairment in some families so seeking assistance is an important part of managing it. Current, behavioural sleep interventions (BSI) used to improve sleep in infants vary in levels of parental responsiveness ranging from leaving a child to cry completely alone using unmodified extinction (least responsive), through controlled crying and parental presence to reactive co-sleeping (most responsive). Some families find that recommended BSI does not align with their choices and preferences for sleep management for their child with evidence suggesting a subsequent dissatisfaction with and subsequent attrition from BSI in some studies. Families seek assistance that is relevant, effective and appropriate to their specific requirements and as choices are limited, poor or less optimal sleep management may be the result.

The Options study (Offering ParenTs Intervention OptioNs for baby's Sleep) explored (1) caregivers' awareness and acceptability of current infant BSI, and (2) if and how much, offering a more targeted patient-centred approach to sleep management with a wider range of BSI would be acceptable to caregivers. More information, greater choice, more personalised approach - a proposed Informed Choice Model of Care (ICMoC).

Materials and Methods
Method

A cross-sectional online survey of caregivers of infants aged between 6-18 months (n = 914) was conducted in five countries: Turkey (n=343), Australia (n=193), United States(n=130), United Kingdom (n=126) and Cananda (n=122). Caregivers were provided descriptions of common infant BSI and reported their awareness and level of acceptability using the

Acceptability of Intervention Measure acceptability)[AIM]) for each intervention (1= low acceptability, 5=high acceptability). Parents were then proposed a hypothetical case scenario, representing an interaction between caregiver and sleep health professional, that reflects a collaborative, patient-centred approach, where caregivers are given wider choices of BSI and are informed and encouraged to choose a BSI that suits their families. The Theoretical Framework of Acceptability (TFA) Generic Questionnaire (TFA) measured acceptability of this ICMoC of BSI delivery. Differences were explored with Kruskal Wallis H tests and post hoc analyses. The hypothetical scenario was this:

Sarah has some questions about how baby Kate is sleeping, and how she can help Kate sleep better. Kate's paediatrician, Dr. Santos, asks questions about Kate's sleep. Dr. Santos then describes three different choices for how Sarah can help baby Kate sleep better. Dr. Santos explains the differences between these choices –how to do them, how long they take, and how well they work – and asks Sarah how she feels about each choice and how she thinks baby Kate might respond. Together, Sarah and Dr. Santos pick the choice that seems to be the best fit for Sarah and baby Kate. Dr. Santos explains that Sarah can always change her mind and try a different approach.

Statistical analyses

Chi-square tests were used to explore differences in awareness of interventions between countries of residence. A repeated measures analysis of variance (ANOVA) was used to assess for differences in AIM scores across the seven interventions, with significance set at p=0.05.

The Kruskal Wallis H test with a Dunn's procedure post hoc analysis was used to explore differences in the acceptability of the ICMoC by country of residence.

Results

Across all countries almost all caregivers were the child's parent (≥97%) with 90% being women and the majority between the ages of 30-35 years. More than half (53-69%) of infants cared for had no siblings. Most respondents (64-86%) cared for their child most of the time during the day.

Awareness of interventions ranged from 50-70% of caregivers, with significant variability by country. Unmodified extinction (AIM = 2.12; Parental Presence (AIM = 2.75) and Modified Extinction (AIM = 2.85) had lower levels of acceptability compared to Responsive Settling with Gradual Reduction (AIM = 3.48) and Response-Based with Settling in Mrms (AIM = 3.51) and

Co-sleeping (AIM = 3.23). Significant differences in acceptability (AIM) scores by country were evident for most of the interventions. None of the interventions were universally acceptable.

The majority (60% - 88%) from each participating country reported that ideally, they would prefer to be offered multiple BSI options but less than 50% reported being offered this. Acceptability of the "Informed Choice" model of BSI delivery was uniformly high. Participants from Australia, Canada and the US reported significantly higher mean acceptability scores compared to those from Türkiye, while those from Australia and Canada reported significantly higher scores than the UK.

Conclusions

As none of the current interventions were universally acceptable, the "Informed Choice" model of BSI delivery, which provides caregivers with information about a range of interventions and the opportunity to choose based on their preferences, parenting styles and cultural beliefs, is acceptable to caregivers across five countries. This model of care differs from the current parental perception of standard care offered by healthcare professionals and could arguably increase caregiver agency and the likelihood parents will implement and adhere to their chosen BSI. This would maximise completion of BSI thus improving sleep health in ALL families and cultures. A universal model of care for BSI.

Presenting Author
Sarah Blunden (Australia)

Authors
Sarah Blunden (Australia); Gabrielle Rigney (Australia); Penny Corkum (Canada); Yunus Fakir (Canada); Derek Van Voorst (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P68

Title
Letting Teens Sleep: How Later School Start Times Affect Mood and Quality of Life

Introduction
Adolescence is a period of rapid cognitive and physical development; however, sleep opportunity is often constrained by a biologically delayed melatonin onset, evening extracurricular activities, and early school start times (SSTs). Although a substantial body of research demonstrates the negative impact of early SSTs, less is known about how SSTs influence bedtimes and waketimes and the interrelationships among time-in-bed, daytime sleepiness, mood, and quality of life. The current study investigates the effects of SSTs in a large sample of young Australian adolescents attending three schools with different start times.

Materials and Methods
Participants (n = 655) included all Year 9 and 10 students (ages 12–14 years) from three Australian high schools participating in a larger evaluation of a school-based sleep education program. Two schools commenced at 08:45 and one at 09:25. Students completed online self-report surveys assessing sleep patterns, daytime sleepiness, mood, and quality of life (QOL). Analyses examined differences in outcomes by SST and tested how SST is associated with sleepiness, mood, and quality of life.

Results
Analyses are ongoing however, preliminary findings suggest that later SSTs are associated with longer weekday time-in-bed, better mood, and higher QOL. Mediation analyses identified a significant partially mediated pathway whereby later SSTs indirectly influenced sleepiness, mood, and QOL through increased weekday time-in-bed.

Conclusions
Preliminary results indicate that later school start times are associated with beneficial effects on adolescent sleep, daytime sleepiness, mood, and quality of life. These findings underscore

the importance of considering delayed school start times in populations where sleep is restricted by school schedules. Further research in the Australian context should examine additional psychosocial and lifestyle factors that influence adolescents' sleep opportunity, duration, and quality.

Acknowledgements
Angela Dyson, Jessica Davis, Jasmine Boydpratt.

Presenting Author
Saraiza Abu Bakar (Malaysia)

Authors
Sudhantara Poobalan (Malaysia); Saraiza Abu Bakar (Malaysia); Shuib Khairuddin (Malaysia); Nur Syazwani Mohd Salehuddin (Malaysia); Saliza Karia@Zakaria (Malaysia); Dayang Zuraini Sahadan (Malaysia); Lai Soon Tan (Malaysia)

Presentation Day and Board Number
Friday, April 10, 2026 | P89

Title
The Awakening of Agency: Sleep Restoration as a Catalyst for Radical Psychosocial and Metabolic Transformation in Adolescent Obesity

Introduction
Adolescents with co-occurring morbid obesity and learning disabilities often present with a clinical phenotype characterized by ""low motivation,"" treatment resistance, and social withdrawal. While Adenotonsillectomy (AT) is the first-line treatment for Obstructive Sleep Apnea (OSA) to resolve physiological obstruction, its role as a neurocognitive and psychosocial intervention is frequently underestimated.

This case study illustrates a ""psychosocial turning point"" where the surgical resolution of severe OSA functioned as a gateway intervention, dismantling the neurobiological barriers to agency and enabling a radical developmental trajectory shift that defied typical post-operative weight gain trends."

Materials and Methods
This case report defines steps to future planned research is about a 14-year-old male with morbid obesity (BMI 46.9 kg/m^2), learning disability, and severe OSA (AHI 86.89 events/hour). Pre-operatively, the patient exhibited profound daytime somnolence, executive dysfunction (inability to adhere to dietary advice), and a "disability narrative" of helplessness. Following adenotonsillectomy and CPAP initiation, the patient achieved a total weight loss of >50kg (normalizing BMI to 23 kg/m^2) and spontaneously initiated high-effort behaviours (e.g., 5:00 AM jogging). This contrasts sharply with literature suggesting AT often leads to weight gain in obese youth due to reduced work of breathing. We propose three multidisciplinary recommendations. First, screening as a psychosocial tool should be embedded because recognising distress, validating experience , and signposting support can reduce avoidance and improve engagement with treatment . Second , we should adopt a “ Window of

opportunity “ protocol using motivational interviewing and behavioural activation to utilise the period when symptom improvement and renewed hope can make behaviour change more achievable .Third, redefining outcomes that surgical success should be defined beyond AHI reduction to include broader patient -centred outcomes such as psychological flexibility , self-efficacy and agency , reflecting in a more meaningful functional recovery in daily life.

Results

In this patient with morbid obesity, learning disability, and extremely severe OSA with hypoventilation (AHI 86.89 events/hour), adenotonsillectomy supported by CPAP was associated with marked improvements not only in sleep-related symptoms, but also in motivation, self-regulatory behaviours, school performance, social engagement, and self-acceptance.

The ""miraculous"" recovery is analysed through a biopsychosocial lens, proposing that sleep restoration replenished the ""Cognitive Bandwidth"" necessary for self-regulation. The psychological mechanisms and analysis performed included the restoration of executive function, activation of self-determination, and the application of Broaden-and-Build Effect which promotes resilience.

Conclusions

For adolescents trapped in the vicious cycle of obesity and fatigue, sleep restoration is not merely a medical procedure but a restoration of the self. By viewing AT as a catalyst for agency, ENT surgeons and psychologists can collaborate to unlock developmental potential that is otherwise biologically imprisoned. This case suggests that sleep restoration may function as a psychosocial gateway intervention, enabling behavioural activation and recovery of agency in selected adolescents.

While limited by its single-case design and inability to establish causality, the findings highlight the importance of considering patient-centred and psychosocial outcomes alongside traditional physiological measures in the management of paediatric OSA.

Acknowledgements

To the patient and his wonderful parents.

Nur Syazwani M.S* , Shuib K* , Dayang Z. S**, Saliza K***. Z,

*ORL department HSISerdang, Paediatric **Respiratory department HSISerdang, Saliza KZ (Saliza Karia Zakaria)***School of Education and Social Sciences, MSU.

L.S.Tan Neuroscien PHD student for your input."

Presenting Author
Sarisa Thawongit (Thailand)

Authors
Sarisa Thawongit (Thailand); Wattanachai Chotinaiwattarakul (Thailand); Tawatchai Panuchawan (Thailand); Pakpoom Choeycheep (Thailand); Kusuma Mamanee (Thailand)

Presentation Day and Board Number
Saturday, April 11, 2026 | P70

Title
Artificial Intelligence-Assisted Sleep Stage Scoring in Real-World Pediatric Clinical Practice

Introduction
Artificial intelligence (AI) is increasingly integrated into sleep medicine, particularly through AI-based polysomnography (PSG) sleep-staging software designed to improve accuracy and workflow efficiency. Several pediatric PSG AI scoring systems currently under development demonstrate strong performance and reliability. However, real-world practice still requires expert supervision by pediatric sleep physicians. This study evaluates a pediatric AI PSG sleep-staging system integrated into the hospital's existing PSG platform under specialist supervision, focusing on diagnostic performance and its impact on workflow efficiency, including reductions in interpretation time and overall workload for sleep staff and physicians.

Materials and Methods
A retrospective analysis was performed on 100 randomly selected pediatric polysomnography studies from the Siriraj Sleep Center at Siriraj Hospital (2023–2025). The median age was 9.5 years (range: 2 years 3 months–18 years), and 60% of participants were male. Exclusion criteria included polysomnography studies incorporating full-lead EEG montage and cases with a documented history of epilepsy. Each PSG study was independently scored and blinded by two experienced sleep technicians. Discrepancies were resolved through discussion to achieve consensus and served as the reference standard. In parallel, the same PSG studies were analyzed using two AI-based approaches (DOMINO-AI sleep-staging and scoring software integrated in DOMINO version 3.1 (Somnomedics, Germany): (1) fully automated AI scoring alone, and (2) AI pre-scoring followed by supervised scoring by a pediatric sleep physician. The agreement between both AI-based approaches and the consensus reference standard was evaluated to determine diagnostic accuracy. Additionally, time efficiency was assessed by comparing the total scoring time for each AI group with the consensus scoring time.

Results

A total of 100 pediatric PSG studies were analyzed. AI-only scoring achieved a mean agreement score of 66.1% ± 18.2 compared with consensus scoring. Poor agreement was associated with younger age and EEG-related artifacts, including sweat and ECG contamination, electrode displacement, and compromised signal integrity in one or more neurophysiological channels. Compared with AI-only scoring, AI-assisted scoring with physician supervision demonstrated significantly higher performance, with a mean agreement score of 86.1% ± 5.8% ($p < 0.001$). In terms of time efficiency, AI-assisted scoring with physician supervision demonstrated a mean duration of 11 ± 2 minutes, which was significantly shorter than the consensus scoring time of 33 ± 5 minutes ($p < 0.001$). AI-assisted scoring reduced staff workload by 3.5 hours/week/person (adjusted full-time equivalent 0.82), enabling reallocation of staff time toward clinical care, improved service capacity, shorter reporting turnaround times, and potential service expansion without additional staffing requirements.

Conclusions

AI-assisted scoring with physician supervision improves workflow efficiency and reduces staff workload while maintaining the quality of PSG interpretation. However, skilled personnel remain essential in pediatric PSG to ensure patient cooperation, signal integrity, and high-quality data acquisition, which underpin accurate analysis by both AI systems and clinicians.

Acknowledgements

This study received no commercial funding; the AI software was provided as a non-commercial free trial without sponsorship.

Presenting Author
SEUNG SOO KIM (South Korea)

Authors
SEUNG SOO KIM (South Korea); JIN-HWA MOON (South Korea)

Presentation Day and Board Number
Friday, April 10, 2026 | P111

Title
Factors Affecting Sleep Spindle Density in Childhood Absence Epilepsy

Introduction
Sleep spindles, which are rhythmic oscillations in the 12–16 Hz frequency range, play a crucial role in cognitive functions such as memory consolidation and synaptic plasticity. Childhood absence epilepsy (CAE) is a common form of childhood epilepsy, characterized by frequent, brief episodes of generalized absence seizures. The diagnosis of CAE is accompanied by 3-Hz spike-and-wave (SSW) discharges on electroencephalography (EEG), which are thought to reflect abnormal thalamocortical oscillations. This study was conducted to identify factors affecting sleep spindle density in children with CAE.

Materials and Methods
The authors retrospectively reviewed the medical records of patients who were diagnosed with CAE at one university hospital. The average montage sleep EEGs recorded in the international 10-20 system were analyzed. The Epochs on NREM stage 2 were used, and we extract 13Hz, 14Hz, 15Hz sleep spindle on C3-average channel and 11Hz, 12Hz, 13Hz sleep spindle on F3-average channel to analysis the sleep spindle density using the python package lunapi (https://zzz.bwh.harvard.edu/luna/). The generalized estimating equations (GEE) was performed, adjusting for potential confounders such as the use of anti-seizure medication and age. Since the small study populations, we selected statistically significant P-value as below 0.1.

Results
This study enrolled 14 patients for the analysis. The positive SSW group had 11 subjects (mean age 8.3 ± 2.2 year-old, 9 girls) in the negative SSW group had 3 patients (mean age 7.9 ± 0.5 yearold, 3 girls). A total of 7 patient was treated with anti-seizure medication(ASM) and most common ASM was lamotrigine. on GEE, there was significant difference in 11 Hz sleep spindle density on F3-average regarding on ASM usage ($P < 0.01$) after adjusting age and SSW

covariance. And negative SSW group has higher 13 Hz spindle density on C3-average than the positive SSW group (P=0.05) after adjusting age and ASM covariance.

Conclusions

The 3-Hz SSW was associated with significantly reduced sleep spindle density in the central area, and the use of ASM appeared to be associated with an increase in the slow sleep spindle density in the frontal area. To confirm the relationship between these biomarkers and actual cognitive function, prospective multimodal studies are required.

Acknowledgements

This research was supported by a grant of the Korea Health Technology R&D Project through the Korea Health Industry Development Institute (KHIDI), funded by the Ministry of Health &Welfare, Republic of Korea (grant number : RS-2023-00267049)

Presenting Author
Shealie Lock (Canada)

Authors
Shealie Lock (Canada); Beth A. Payne (Canada); Lyndia C. Wu (Canada); Mark J. Ansermino (Canada); David Wensley (Canada); Lena Xiao (Canada); Calvin Kuo (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P74

Title
How Do You Capture a Movement? A Comparison of Electromyography and Inertial Measurement Unit Sensing Modalities

Introduction
Movement is essential to our everyday lives, yet excessive nighttime movement can disrupt sleep and reduce sleep quality. Movement during sleep as an indication of sleep disorders are currently captured with polysomnography (PSG) using electromyography (EMG) signals from the tibialis anterior muscles. Despite being used to identify movement, EMG only measures the activation of the muscle on which it is located. Moreover, it is also possible to observe activation of a muscle without a movement being produced such as during co-contraction. Inertial measurement units (IMUs) are a type of wearable sensor which combines triaxial accelerometers and triaxial gyroscopes to directly measure movement, regardless of which muscle produced it. This present work compares how different sensing modalities detect sleep movements that are associated with sleep disruptions such as arousals.

Materials and Methods
Patients referred to BC Children's Hospital for a clinical PSG assessment were asked to wear an Axivity AX6 IMU sensor on each ankle. PSG data were obtained using the Natus SleepWorks PSG system at 512Hz and scored by a trained technician using the AASM version 3 guidelines. As part of the PSG, two EMG electrodes were placed along the tibialis anterior on each leg according to the AASM guidelines. The IMUs were configured for a collection rate of 100Hz. Following the assessment, we manually time-synchronized the EMG data and clinical annotations from the PSG data to the IMU data. We extracted movements in the EMG data by obtaining the EMG envelope and identifying an increase of 8mV above baseline that remained >2mV for at least 0.5 seconds. Similarly, we extracted movements in the IMU data when the resultant angular velocity >20°/sec lasted for at least 0.5 seconds. For both sensors, any movement that occurred within 0.5 seconds of another was considered as a single movement. We determined corresponding movements by checking instance of overlapping time intervals

(±0.5 seconds) between IMU-detected movements and EMG-detected movements. We then contextualized EMG and IMU extracted movements with clinical labels such as arousals as defined by the AASM.

Results

We recruited 27 participants (ages 5-17; 14 male, 13 female). Analysis of 3 participants (ages 6-13; 2 male, 1 female) found there were 478 EMG-detected movements which corresponded to 642 IMU-detected movements – the mismatch occurs because sometimes one EMG-detected movement consists of multiple separate IMU-detected movements based on our extraction methodology. There were also 223 independent EMG-detected movements and 444 independent IMU-detected movements. To contextualize these movements, 243 IMU-detected movements corresponded to an arousal and 16% of these movements did not also correspond to an EMG-detected movement. Similarly, 195 EMG-detected movements corresponded to an arousal, with 29% being independent from the IMU-detected movements. Additional analysis including remaining participants is planned to further explore these trends.

Conclusions

While EMG is the current method for monitoring movements in sleep for PSG, other technologies such as IMUs may provide additional information that can help identify movements that might have relevance to sleep disturbances like arousals. Studying movement in sleep should consider monitoring movements using different modalities to better capture the diversity.

Presenting Author
Shin-ichi Ando (Japan)

Authors
SHINICHI ANDO

Presentation Day and Board Number
Saturday, April 11, 2026 | P75

Title
Effects of Daytime Sleepiness and Sleep Restfulness on School Attendance in Junior High School Students

Introduction
In recent years, school absenteeism among junior high school students in Japan has continuously increased, and lifestyle-related factors have been identified as the important contributors. Among these factors, sleep problems are particularly notable during adolescence, characterized by delayed sleep phase and chronic sleep insufficiency. Insufficient sleep might lead to emotional instability, reduced academic performance, and eventually decreased motivation for school attendance. In addition to sleep duration, subjective sleep restfulness—defined as the perceived degree of physical and mental recovery after sleep—has been suggested as an important indicator of sleep quality. However, few studies have simultaneously examined the relationship among daytime sleepiness, sleep restfulness, and school attendance in junior high school students and the present study, thus, aimed to clarify the relationships among them in this population.

Materials and Methods
A questionnaire survey was conducted between October and November 2024 among 368 students enrolled in a local public junior high school. Valid responses were obtained from 332 students (response rate: 90.2%). Sleep habits were assessed based on self-reported one week bedtimes and wake-up times, from which average sleep duration was calculated. Daytime sleepiness was evaluated using the Japanese version of the Epworth Sleepiness Scale (JESS). A JESS score of 11 or higher was defined as indicating daytime sleepiness. Sleep restfulness was assessed using a single-item five-point scale evaluating subjective recovery from sleep, and participants were categorized into satisfied and dissatisfied groups. School attendance status was measured by the number of absences and tardiness. Statistical analyses were performed using independent-samples t-tests to examine group differences.

Results

The mean JESS score among participants was 7.64, and 26.0% of students were classified as having daytime sleepiness. Students with sleepiness showed significantly later bedtimes and shorter sleep duration compared with those without sleepiness. Similarly, students reporting low sleep restfulness showed later bedtimes and significantly shorter sleep duration than those reporting adequate restfulness. In terms of school attendance, students with daytime sleepiness had significantly higher numbers of absences and tardiness. Similarly, students with low sleep restfulness exhibited markedly higher absence and tardiness rates compared with the satisfied group, with absence rates nearly three times higher.

Conclusions

The findings indicate that inadequate sleep represented by daytime sleepiness and insufficient sleep restfulness are closely associated with unfavorable school attendance among junior high school students. These results suggest that both sleep quantity and subjective sleep quality play important roles in maintaining regular school attendance. Sleep-focused educational guidance and early identification of sleep-related problems as well as resultant intervention for them may contribute to the prevention of absenteeism and support students' overall school adjustment.

Presenting Author
SHINTARO CHIBA (Japan)

Authors
SHINTARO CHIBA (Japan); KIYOE SHIMIZU (Japan)

Presentation Day and Board Number
Saturday, April 11, 2026 | P76

Title
A Case of Pediatric OSA with Jaw and Facial Growth Impairment Due to CPAP Use

Introduction
As seen in several reports, long-term use of PAP masks in children raises concerns about potential effects on normal craniofacial growth.

Materials and Methods
5-year-old female.

Chief complaint: Reported snoring and apnea.

History: Parents noted snoring, apnea, and labored breathing during sleep starting at age 1. At age 5, she visited a pediatric clinic. Home sleep testing (HST) showed a respiratory event index (REI) over 100, suggesting severe OSA, leading to referral to our hospital.

Diagnosed as severe OSA by attended PSG. Surgical treatment was deemed unlikely to be effective because of no adenoid-tonsil hypertorophy, so CPAP therapy was initiated. Parents were informed that CPAP therapy during early childhood may affect craniofacial development, and follow-up regarding growth was conducted.

Results
Initial CPAP use: 5-8 years old (early elementary school) showed good adherence. Subsequently,

9-12 years old (late elementary school) showed poor adherence. Unused for several years.

Around age 13, CPAP was restarted due to worsening snoring, apnea, and daytime sleepiness. Subsequently, the patient experienced noticeable effects and maintained good adherence.

SNA levels, which were within the standard range before starting CPAP therapy, decreased sharply after CPAP initiation. Subsequently, during the period of poor CPAP adherence between ages 9 and 12, SNA levels showed a tendency to recover. However, after CPAP was restarted at age 13, SNA levels decreased again.

Conclusions

•CPAP therapy is a highly effective treatment option for children during growth spurts. However, it may cause forward growth restriction of the maxilla.

• For pediatric CPAP users during growth, regular cephalometric evaluations and

enhanced collaboration with orthodontic specialists are essential to ensure long-term care is not neglected.

•Improved mask design is necessary for safer and more effective CPAP use for children with OSA.

・Preventive interventions are required to achieve both facial growth and therapeutic outcomes."

Presenting Author
Shirley Xin Li (Hong Kong)

Authors
Shirley Xin Li (Hong Kong); Lok Fan Lau (Hong Kong); Ran Wang (Hong Kong); Xiao Li (Hong Kong); Tim Man Ho Li (Hong Kong); Ngan Yin Chan (Hong Kong); Joey Wing Yan Chan (Hong Kong); Albert Martin Li (Hong Kong); Yun Kwok Wing (Hong Kong)

Presentation Day and Board Number
Saturday, April 11, 2026 | P77

Title
Motivations, facilitators, and barriers: A qualitative exploration of parental experiences with a digitally delivered sleep intervention for children with special educational needs

Introduction
(SEN), including Autism Spectrum Disorder (ASD) and Attention-Deficit/Hyperactivity Disorder (ADHD), significantly impacting child functioning and family well-being. While behavioral sleep interventions are recognized as the first-line treatment, there remain barriers to increase dissemination. Digital health interventions, particularly app-based programmes, may offer scalable alternatives, but self-guided approaches often face challenges, such as high attrition and difficulty in engagement. The present study aimed to qualitatively explore parental experiences with an app-based sleep intervention, with or without adjunct therapist support, for children with SEN and sleep problems.

Materials and Methods
Eighteen parents (all mothers, mean age = 42.4 years) of school-aged children (6 -12 years) with ASD, ADHD or both, and clinical sleep problems (scoring 41 or above on the Children's Sleep Habits Questionnaire, CSHQ) were recruited. Participants completed a parent-based sleep intervention via a smartphone app, either as a self-guided app-only condition or with adjunct weekly 10-15 minutes individual telephone support. The self-paced app featured six modules with psychoeducational animations, text, and quizzes. Individual qualitative interviews (60-90 minutes) were conducted after intervention completion.

Results
Thematic analysis revealed five major themes: motivators, barriers and facilitators for treatment implementation, perceived treatment impacts and recommendations. Parents were motivated to join the intervention by their child's significant daytime impairments (e.g., poor concentration, behavioral issues) and associated parenting struggles. Key barriers to

implementation included child-related factors, such as rigidity and non-compliance, particularly linked to ASD/ADHD characteristics. Parent-related barriers involved low parental mental capacity, competing priorities and difficulties in enforcing strategies. Facilitators for adherence and retention included the app's accessible and user-friendly design, credible and comprehensive content, and external support. Personalized therapist phone calls were consistently identified as the most valued facilitator. The intervention led to positive behavioral and cognitive changes for both the child and family. Recommendations included greater child involvement and practical implementation tools.

Conclusions

The findings provided insights to guide the development and implementation of digital sleep intervention. The integration of personalized therapist support to self-help digital platform may potentially address child-specific barriers and parental challenges in the intervention for sleep problems in this unique clinical population.

Acknowledgements

This study was supported by General Research Fund from Research Grants Council, Hong Kong SAR (Ref. 17620924).

Presenting Author
Shirong Cai (Singapore)

Authors
Neil Huynh Hoai Nguyen (Singapore); Elaine Kwang-Hsia Tham (Singapore); Daniel Yam Thiam Goh (Singapore); Oon Hoe Teoh (Singapore); Michael Meaney (Canada); Birit Broekman (Netherlands); Johan Eriksson (Singapore); Michelle Zhi Ling Kee (Singapore); Shirong Cai (Singapore)

Presentation Day and Board Number
Saturday, April 11, 2026 | P78

Title
Examining the relationship between maternal and paternal parenting styles and sleep problems in early adolescence using network analysis

Introduction
Parenting styles and sleep problems in young children have been well-studied, reporting negative parenting styles to be associated with more sleep problems while positive parenting styles are believed to be protective. However, longitudinal evidence in early adolescence is limited. Moreover, most literature only studied associations between parenting styles and specific sleep problems, without distinguishing maternal and paternal parenting styles. In our study, we aimed to longitudinally study how the common childhood sleep problems cluster and associate with maternal and paternal parenting styles.

Materials and Methods
Participants (n=392) were mother-children dyads from the Growing Up in Singapore Towards healthy Outcomes (GUSTO) birth cohort study. At age 10.5 years, the mothers filled up the Parenting Styles and Dimensions Questionnaire about hers and the fathers' parenting styles. The primary caregiver reported sleep problems using the Children Sleep Habits Questionnaire (CSHQ), at age 10.5 and 12 years in the children. Firstly, network analysis was conducted to analyse relationships among the eight subscales (bedtime resistance, sleep onset delay, sleep duration, sleep anxiety, night waking, parasomnia, sleep disordered breathing and daytime sleepiness), total CSHQ scores as well as three parenting styles (authoritative, authoritarian and permissive) of the mothers and fathers (Python 3.13.3, NetworkX version 3.4.2). Secondly, multivariable regression between the parenting styles and sleep problem subscales within each cluster identified from the network analysis was performed with SPSS 30, adjusted for maternal education, ethnicity and sex of child.

Results

Four distinct clusters were uncovered with the network analysis. Cluster one include bedtime behavior problems – bedtime resistance and sleep anxiety, together with total CSHQ score. Cluster two had both maternal and paternal authoritative parenting styles clustering with sleep duration and sleep onset delay. Cluster three included sleep disturbances – night wakings, parasomnias and sleep disordered breathing. The final cluster contained negative parenting styles – both maternal and paternal permissive and authoritarian parenting styles together with daytime sleepiness. At age 10.5 years, maternal authoritative parenting was associated with fewer sleep onset delays ($p = 0.039$) and fewer sleep duration problems ($p = 0.007$), whereas maternal permissive parenting was associated with more sleep duration problems ($p = 0.005$).At age 12 years, parental (both maternal and paternal) authoritative parenting was linked to lesser sleep onset delay (p

Conclusions

Across early adolescence, authoritative parenting consistently emerged as a protective factor for sleep health, particularly reducing sleep onset delays and sleep duration problems. Maternal influences were more pronounced at a younger age of 10.5, while by age 12 both parents' authoritative styles contributed to better sleep outcomes. In contrast, permissive and authoritarian parenting were associated with shorter sleep and greater daytime sleepiness, with negative parenting effects appearing earlier and broadening over time. Overall, these patterns suggest that supportive, structured parenting becomes increasingly important for maintaining healthy sleep as children transition into adolescence.

Acknowledgements

This project is funded by Ministry of Education, Singapore, under Science of Learning (MOE-MOESOL2024-0002); National Research Foundation (NRF) under the Open Fund-Large Collaborative Grant (OF-LCG; MOH-000504) administered by the Singapore Ministry of Health's National Medical Research Council (NMRC).

Presenting Author
Shuib bin Khairudin (Malaysia)

Authors
Aqilah AR (Malaysia); Saraiza AB (Malaysia); Ruzita T (Malaysia); Mohamad Doi (Malaysia); DgZuraini Sahadan (Malaysia); Shuib Khairuddin (Malaysia)

Presentation Day and Board Number
Friday, April 10, 2026 | P19

Title
Breathing Thin

Introduction
Childhood obesity remains a significant public health challenge, frequently exacerbated by obstructive sleep-disordered breathing (SDB) stemming from adenotonsillar hypertrophy. This condition is strongly associated with metabolic dysregulation, increased appetite, and debilitating daytime sleepiness. While tonsillectomy is primarily performed to restore airway patency, it also serves as a critical catalyst for healthy weight reduction by normalizing the leptin–ghrelin balance and improving insulin sensitivity.

Materials and Methods
This single-patient observational study followed a 10-year-old boy with severe obesity, weighing 114 kg preoperatively. The patient presented with symptoms of SDB, for which tonsillectomy was indicated. Postoperative follow-up assessed changes in weight, appetite patterns, physical activity levels, and sleep quality.

Results
Following the procedure, the patient achieved a dramatic and sustained weight reduction, dropping from 114 kg to 60 kg (approximately 47% total loss). Post-surgery, the patient demonstrated improved appetite regulation with decreased sugar cravings and better portion control. Additionally, the resolution of snoring and daytime sleepiness led to a surge in physical activity and endurance.

Conclusions
This case highlights the potential of airway surgery to trigger a "metabolic reset" in pediatric obesity. The synergistic effect of improved sleep quality and reduced fatigue created a positive cycle of energy expenditure and structured eating, suggesting tonsillectomy is a supportive intervention beyond simple airway relief.

Acknowledgements
We identify and thank the patient and his parents for their cooperation and consent to publish this case study.

Presenting Author
Silke Weber (Brazil)

Authors
Silke Weber (Brazil); Renato Battistel Santana (Brazil); Neemias Santos Carneiro (Brazil); Antonio Carlos Marão (Brazil); Camila Castro Correia (Brazil); Danilo Weber Nunes (Germany)

Presentation Day and Board Number
Friday, April 10, 2026 | P106

Title
The impact of OSA on the quality of life is different in boys

Introduction
OSA has a negative impact on the quality of life with repercussions on learning disabilities and behaviour. Phenotyping for more personalized treatment in children does not include gender, however, some studies point out gender differences on OSA severity, snoring intensity, and impact on quality of life. The aim of this study was to analyze the gender difference of the items of the OSA 18 questionnaires in OSA children.

Materials and Methods
In this transversal study, 134 children, 69 boys, aged 3 to 9 years old, all scheduled for adenotonsillectomy due to sleep-disordered breathing and hypertrophy of the tonsils in a University Hospital in Brazil, performed full-night polysomnography, and parents/caregivers answered the OSA-18 Questionnaire. Scores were compared between genders for each question(Wilcoxon analysys, and Spearman correlation). In a second round, we compared gender differences in children under 6 years of age. In a third round, we investigated gender differences in children with moderate to severe OSA.

Results
In the whole study population, boys showed a higher score for loud snoring and observed apneas, as well as a moderate association for indisciplined behavior and attention deficit. Girls showed higher scores in arousals and difficulties in deglutition/ food intake disorders. When looking at the population under 6 years old, 105 children were included, 53 boys. Again, hyperactivity, indisciplined behavior, impulsivity and anger showed a stronger correlation to the male gender.

When looking at the impact of gender difference in children with moderate to severe OSA, again, scores for loud snoring, observed apneas, hyperactivity, anger indisciplined behavior and impulsivity were higher in boys.

Conclusions

Although the prevalence of pediatric OSA is similar in genders, the impact on quality of life is different. Thus, for phenotyping of personalized treatments, these differences have to be weighted.

Presenting Author
Silke Weber (Brazil)

Authors
Silke Weber (Brazil); Danielle Barreto (Brazil); Karina Santos (Brazil); Camila Castro Correa (Brazil)

Presentation Day and Board Number
Saturday, April 11, 2026 | P79

Title
Obstructive Sleep Apnea in Children with Down Syndrome: High Prevalence and Limited Accuracy of Standard Questionnaires

Introduction
Background: Obstructive sleep apnea (OSA) is markedly prevalent and often severe in children with Down syndrome (DS), yet remains under-recognized by caregivers. While screening tools like the Pediatric Sleep Questionnaire (PSQ) and OSA-18 are commonly used, their diagnostic performance in this specific population is poorly established.

Objective: This study aimed to characterize the prevalence and severity of OSA in children with DS and to evaluate the accuracy of the PSQ and OSA-18 questionnaires in detecting moderate-to-severe OSA against polysomnography (PSG).

Materials and Methods
We enrolled 39 children with DS (aged 2–15 years) who underwent anthropometric evaluation, completed the PSQ and OSA-18, and were assessed by polysomnography. Nutritional status was classified using Z-scores. The diagnostic properties of the questionnaires were analyzed through sensitivity, specificity, accuracy, and receiver operating characteristic (ROC) curves.

Results
Obesity was present in 41% of participants. Among the 33 children who successfully completed PSG, the median apnea-hypopnea index (AHI) was 8.4/h (IQR 3.8–16), with 12 children exhibiting severe OSA. Significant nocturnal hypoxemia was observed (median SpO_2 nadir 84%). However, questionnaire scores correlated only weakly with PSG findings. The PSQ showed a correlation with obstructive apnea events (p=0.04), and the DIMS domain of the OSA-18 was also significantly associated (p=0.016). ROC analysis indicated comparable but suboptimal performance for both tools, with the PSQ showing the shortest distance to the ideal point (d=0.567). Consistent with prior evidence, both questionnaires demonstrated low

sensitivity and specificity in this cohort, highlighting a disconnect between parental perception and objective respiratory disturbances.

Conclusions

OSA is highly prevalent and severe in children with DS. Although the PSQ and OSA-18 provide some utility, their modest accuracy reinforces polysomnography as an essential tool for timely diagnosis and clinical management in this high-risk population.

Presenting Author
Sima Dastamooz (Hong Kong)

Authors
Sima Dastamooz (Hong Kong); Erik Yee Mun George Fung (Hong Kong); David Shu-cheong Hui (Hong Kong); Gloria Hiu Wing Lau (Hong Kong); Yun Kwok Wing (Hong Kong); Joey Wing-yan Chan (Hong Kong); Ming Yang (Hong Kong); Chun Ting Au (Canada); Albert Martin Li (Hong Kong)

Presentation Day and Board Number
Saturday, April 11, 2026 | P80

Title
Long-term Trajectories of Childhood Obstructive Sleep Apnoea and Their Associations with Cardiac Structure: A 19-Year Follow Up Study

Introduction
Obstructive sleep apnoea (OSA) has been linked to cardiac structural abnormalities, yet the long-term cardiovascular implications of different OSA disease courses from childhood to adulthood remain poorly defined. This study aimed to characterise the disease course of OSA from childhood to adulthood and to examine how OSA trajectories (persistent, remitted, incident, and non-OSA) are associated with echocardiographic outcomes after 19 years of follow-up.

Materials and Methods
A longitudinal follow-up study was conducted in a population-based paediatric sleep cohort. Between 2003–2005, 619 children aged 5–13 years underwent overnight polysomnography for an epidemiological study of childhood OSA. At 19-year follow-up, 202 participants (33% response rate, ages 24.07–32.78 years) were reassessed with a home sleep apnoea test and classified into four OSA course groups: non-OSA, remitted OSA, persistent OSA, and incident OSA. Echocardiography was performed by trained sonographers and analysts who were blinded to participants' OSA status. Group differences in cardiac structural and functional parameters were analysed with multivariable regression models adjusted for age, sex, body mass index (BMI z-score at baseline, and BMI at follow-up.

Results
Among the 202 participants (58.4% male; mean age [SD] 28.6 [1.95] years), 67 were non-OSA, 52 remitted, 52 persistent, and 31 incident OSA. Persistent OSA was associated with increased interventricular septum (IVS) thickness relative to non-OSA (mean difference [MD] = 0.87 mm,

95% CI: 0.37, 1.37) and remitted OSA (MD = 0.77 mm, 95% CI: 0.25, 1.29). Persistent OSA was also associated with higher LV mass relative to non-OSA (MD = 11.52 g, 95% CI: 0.38, 22.66) and remitted OSA (MD = 13.59 g, 95% CI: 1.95, 25.22). Compared with incident OSA, those with persistent OSA also demonstrated thicker IVS; MD = 0.55 mm (95% CI: 0.03, 1.07), higher LV mass indexed to body surface area (LV mass.BSA-1; MD = 6.88 $g.m^2$ (95% CI: 0.54, 13.22), higher LV mass MD = 15.73 g (95% CI: 4.17, 27.29), and larger left ventricular end-diastolic diameter (LVEDD) MD = 2.12 mm (95% CI: 0.50, 3.73). No significant differences were observed between the non-OSA and remitted OSA groups in IVS diameter, LVEDD, LV mass, or LV mass indexed to body surface area.

Conclusions

Persistent OSA from childhood to young adulthood was associated with a consistent pattern of worse echocardiographic outcome measures affecting left ventricle. Individuals with remitted OSA had comparable echocardiographic measurements compared to non-OSA group, suggesting that OSA resolution may mitigate long-term cardiovascular consequences. These findings highlight the importance of early detection and management of paediatric OSA.

Acknowledgements

Persistent OSA from childhood to young adulthood was associated with a consistent pattern of worse echocardiographic outcome measures affecting left ventricle. Individuals with remitted OSA had comparable echocardiographic measurements compared to non-OSA group, suggesting that OSA resolution may mitigate long-term cardiovascular consequences. These findings highlight the importance of early detection and management of paediatric OSA.

Author list: Sima Dastamooz1, Erik Yee Mun George Fung 2, David Shu-cheong Hui3, Gloria Hiu Wing Lau 4, Yun Kwok Wing 5,6, Joey Wing-yan Chan 5,6, Ming Yang 1, Chun Ting Au 1,7, Albert Martin Li 1,8,9, Kate Ching-ching Chan 1,8,9"

Presenting Author
Siyu Dai (China)

Authors
Siyu Dai (China); Sima Dastamooz (China); Xuhang Fan (China); Zhili Huang (China); Ngan Yin Chan (China); Albert Martin Li (China); Kate Ching Ching Chan (China)

Presentation Day and Board Number
Saturday, April 11, 2026 | P81

Title
Insomnia symptoms in children with sleep-disordered breathing: A scoping review

Introduction
This scoping review examined the intersection between insomnia symptoms and sleep-disordered breathing (SDB) in the paediatric population, aiming to map current evidence on definitions, comorbid prevalence, assessment methods, interventions, and identify knowledge gaps to inform future research.

Materials and Methods
A comprehensive search was conducted across seven electronic databases and reported in accordance with the PRISMA-ScR guidelines. Eligible studies included empirical research involving children aged 0-18 years with SDB and insomnia symptoms or any form of insomnia. Data extraction included the study design, population characteristics, definitions and measures of SDB and insomnia symptoms, major outcomes, interventions and the proposed mechanisms underlying their comorbidity.

Results
Of 4801 records identified, nine studies were included in the final review. Reported prevalence of insomnia symptoms among children with SDB ranged from 8.7% to 39.5% in clinical samples and 0.9% to 4.4% in the general population. Comorbidity appeared more common in younger children, those with milder obstructive sleep apnoea, and those with coexisting anxiety symptoms. Most studies employed retrospective cross-sectional designs, cohort studies were rare, and no intervention trials were identified. Research primarily focused on OSA and snoring, with considerable heterogeneity in the definitions and assessment of insomnia symptoms.

Conclusions
This review synthesises current evidence on paediatric insomnia symptoms in the context of SDB, highlighting frequent co-occurrence and a possible bidirectional relationship. Findings

underscore the need for standardised definitions, integrated diagnostic approaches, and multidisciplinary management strategies. Future longitudinal research is warranted to explore the nature of this association, clarify potential causal pathways, and examine the underlying mechanisms.

Presenting Author
Steffi Baker (United Kingdom)

Authors
Steffi Baker (United Kingdom); Paul Gringras (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P112

Title
Sleep Problems in Children with Tourette Syndrome

Introduction
Gilles de la Tourette Syndrome (TS) is a neurobehavioral condition involving persistent motor and vocal tics, with symptom onset typically around the age of six (Bloch & Leckman, 2009). While its core features are well recognised, the impact of TS on sleep in children remains unclear. Sleep disturbances in children, including difficulty with sleep onset, maintenance, and efficiency, can lead to excessive daytime sleepiness, cognitive impairment, and reduced academic performance. Understanding this relationship is therefore vital for improving long-term health outcomes.

Paediatric sleep assessment typically involves respiratory polygraphy, polysomnography (PSG), and actigraphy. Previous studies of sleep in children with TS (Cohrs, 2001; Kostanecka-Endress et al., 2003; Kirov et al., 2007; Keenan et al., 2024) have largely relied on single-method approaches. Few have combined objective and subjective measures to capture the complexity of sleep disturbances. Our study will integrate PSG, actigraphy, questionnaires, clinical histories, and blood tests to provide a comprehensive analysis of how TS affects sleep in children."

Materials and Methods
We have developed a new Tics in Sleep (TiS) questionnaire to capture subjective reports of tic activity during sleep. In addition, novel Tic Indices have been created to objectively quantify tic impact using a scoring method similar to that for periodic limb movements in sleep (PLMS). There are two Tic indexes applied in PSG scoring: one scores tics during sleep (Ts); the other scores tics during sleep that cause arousals (Tsa), with scores further analysed by sleep stage.

We aim to recruit around 100 children to complete the TiS questionnaire, with a subset of approximately 10 also consenting to analysis of their actigraphy and PSG data."

Results

As we are finalising study setup and obtaining patient consent, data collection has not yet begun. However, we expect to have results to share by April. We hypothesise that children with TS will exhibit lower sleep efficiency compared to typically developing controls. We also anticipate that our data will reveal when tics most affect sleep, during which sleep stages they occur, and how they influence sleep in terms of impact, frequency, and severity. Additionally, we hope that the questionnaire will provide valuable insight into each child's perspective on their sleep experiences.

Conclusions

We aim to draw conclusions from the following research questions:

- Can the newly defined tic indices be reliably scored during PSG with good inter-rater reliability?
- What is the frequency, impact, and severity of tics on sleep in children?
- Is there a correlation between the Tic indices and subjective measures of sleep quality or daytime functioning in children with TS?
- Does sleep architecture differ between children with TS and historic controls?"

Acknowledgements

This research was supported by Guy's and St Thomas' NHS Foundation Trust. We would like to thank the Evelina London Children's Sleep Department for their ongoing support. We are also grateful to Professor Paul Gringras (Paediatric Sleep and Neurodisability Consultant), Dr. Tammy Hedderly (Paediatric Neurologist), Dr. Sara Sopena (Consultant Clinical Psychologist), and Kirandeep van den Eshof (Chief Sleep Physiologist) for their valuable feedback and contributions during the preparation of this study.

Presenting Author
Stephanie Crowley (United States)

Authors
Allison J. Monterastelli (United States); Elaine M. Poole (United States); Nina M. Blaise (United States); Charmane I. Eastman (United States); Stephanie J. Crowley (United States)

Presentation Day and Board Number
Saturday, April 11, 2026 | P85

Title
Later school start times increase morning bright light exposure in adolescents

Introduction
Early school start times can lead to chronic sleep restriction in teens because circadian phase and bedtimes are latest during adolescence. Moreover, in latitudes where day lengths change with seasons, teens with early school start times may need to leave for school before the sun rises. This can exacerbate the late sleep propensity of adolescents by limiting their exposure to morning bright light, a zeitgeber which advances (makes earlier) circadian rhythms. The present analysis quantifies the morning bright light that teens in high schools in the vicinity of Chicago, IL USA (41.88°N, 87.63°W) receive on their commute to school and compares how school start times affect this exposure.

Materials and Methods
72 (41F) adolescents (14.3-18.0 years) wore chest-level light medallions for 11 school days. Each participant's duration of bright light exposure (minutes >1000 lux) was counted for every school-day morning (wake to 15 minutes after school start), and the durations were averaged within participant to quantify the average duration of morning bright light that each adolescent received. Mornings were excluded if the participant missed school, left home after their reported school start time, or if their light medallion was off for most (>50%) of the morning. Participants were grouped according to early (07:59 or earlier; n=25) and late (08:00 or later; n=47) school start times. Unpaired t-tests compared average morning bright light duration between early and late groups. 10 participants (8F) went to school late on at least one morning (home departure time ≥1h after routine departure) due to a planned delayed start time. Paired t-tests compared bright light duration on mornings when school started at their usual time and on delayed-start mornings. Results are reported as Mean±SD.

Results
On average, teens received 7.4±8.0 minutes of morning bright light (>1000 lux). Teens with late

school start times received more minutes of bright light (9.0±8.6) than those with early school start times (4.2±5.7; p=0.006). The groups did not differ in commute time (p=0.360) which ranged from 4-100 minutes, or sunrise time (p=0.286), which ranged from 05:32-07:18. If a teen had a delayed school start time, then they received more bright light on their way to school (12.2±12.2 mins) than on mornings when school started at the usual time 3.7±3.7 minutes (p=0.05), despite no difference in the amount of time spent awake before school (p=0.757).

Conclusions

The duration of bright light that teens in Chicago, IL USA receive in the morning before school is very limited. This duration is further diminished when school starts before 08:00, indicating that early school start times mitigate opportunity for morning bright light on school days. The within-participant delayed start analysis supports this by showing that, when an adolescent follows the same morning routine, only later in the morning, they receive more bright light. These results emphasize the importance of delaying school start times, which could not only allow for longer sleep opportunities, but also help to advance adolescent circadian rhythms by increasing the opportunity for morning bright light.

Acknowledgements

Funding provided by NIH/NHLBI (R01 HL112756; PI: Crowley)

Presenting Author
Sungkyoung Shin (South Korea)

Authors
Sungkyoung Shin (South Korea); Myna Lim (South Korea); Yeji Lee (South Korea); Natalie Barnett (United States); Maristella Lucchini (United States); Shambhavi Thakur (United States); Jae Kyoung Kim (South Korea); Sooyeon Aly Suh (South Korea)

Presentation Day and Board Number
Friday, April 10, 2026 | P107

Title
Psychological and Behavioral Predictors of Parental Bedtime Procrastination: A Machine Learning Approach

Introduction
Bedtime Procrastination (BP) is defined as going to bed later than intended without external factors. BP is an important health-related behavior associated with sleep health. Previous studies suggest that BP serves functions such as emotion regulation, self-reward, and seeking a sense of autonomy or belonging. Among parents, elevated caregiving demands and chronic stress may increase reliance on BP as a maladaptive coping strategy. This study aims to explore predictors of parental BP.

Materials and Methods
Participants were 484 child–parent dyads, categorized into high and low BP groups based on the Bedtime Procrastination Scale (cutoff score = 33). Participants completed questionnaires including the Smartphone Addiction Scale (SAS), Difficulties in Emotion Regulation Scale (DERS; subscale scores), the Edinburgh Postnatal Depression Scale, and the discrepancy between actual and desired leisure time. Child sleep variables were reported by parents using the Brief Infant Sleep Questionnaire–Revised, including wake after sleep onset, light-off time, bedtime routine consistency, perceived sleep problems, and parental confidence in managing child sleep. To classify between high and low BP groups from behavioral and psychosocial variables, a binary classification model was developed using CatBoost, a gradient boosting decision tree–based machine learning algorithm, with 15 variables. Model performance was optimized via Bayesian hyperparameter tuning with k-fold cross-validation. Model interpretability was assessed using feature importance metrics and SHAP (SHapley Additive exPlanations) analyses.

Results

Children had a mean age of 11.14 ± 6.17 months (47.52% girls), and parents were predominantly aged 30-34 years (80.58% mothers). The CatBoost model achieved moderate discriminative performance (AUC = 0.750). Feature importance analysis using the PredictionValuesChange metric identified SAS as the strongest predictor, followed by DERS impulse control difficulties and leisure time discrepancy. SHAP analyses further indicated that SAS, child light-off time, and leisure time discrepancy were the most influential predictors of BP group classification. Higher SAS scores, later child light-off time, and having less actual leisure time than desired were associated with an increased likelihood of high BP.

Conclusions

Although parents have limited opportunities for sleep due to caregiving responsibilities, many still engage in BP. The present findings suggest that parental BP is closely related to modifiable behavioral and psychological factors, including smartphone use, emotion regulation difficulties, and insufficient leisure time. Given that BP reflects an aspect of sleep behavior that is at least partially modifiable and under parents' control, behavioral interventions targeting BP may be a potential avenue for improving parental sleep.

Acknowledgements

This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2021S1A5A2A03061721).

Presenting Author
Sungkyoung Shin (South Korea)

Authors
Sungkyoung Shin (South Korea); Eun Jin Lee (South Korea); Sangji Kim (South Korea); Yun Mi Shin (South Korea); Sangha Lee (South Korea); Sooyeon Aly Suh (South Korea)

Presentation Day and Board Number
Saturday, April 11, 2026 | P83

Title
Sleep and Rest-Activity Rhythms in Adolescents and Young Adults Engaging in Nonsuicidal Self-Injury

Introduction
Non-suicidal self-injury (NSSI) is a major health concern for young adults, yet the specific role of sleep and circadian rhythm as a risk factor remains unclear. While insomnia is frequently linked to NSSI, research often overlooks the broader construct of multidimensional sleep health and objective circadian rhythms. This study investigated whether subjective sleep health and actigraphy-derived rest-activity rhythms–intradaily variability (IV), interdaily stability (IS), and relative amplitude (RA)–predict the frequency of NSSI episodes.

Materials and Methods
The study sample consisted of 19 adolescents and young adults with a history of at least one episode of NSSI within the past six months. Participants completed self-report questionnaires including the Functional Assessment of Self-Mutilation (FASM), Sleep Health Index (SHI), Insomnia Severity Index (ISI), and Patient Health Questionnaire–9 (PHQ-9). Sleep and rest-activity rhythm parameters were obtained using wrist-worn actigraphy (ActTrust 2; Condor Instruments). Participants wore the actigraphy device for approximately two weeks, and actigraphy-derived indices were calculated based on 9 to 16 days of valid recording. Actigraphy-derived sleep parameters included bedtime and wake time, time in bed (TIB), total sleep time (TST), wake after sleep onset, and sleep efficiency (SE). Rest-activity rhythm parameters were derived using IV, IS, and RA. Negative binomial regression models were utilized to identify predictors of NSSI frequency.

Results
The mean age of the participants was 22.16 ± 3.64 years, and the mean frequency of NSSI was 24.37 ± 12.74 episodes during the past six months. Actigraphy-derived sleep parameters indicated a mean TST of 7.41 (± 1.07) hours, TIB of 8.53 (± 1.05) hours, and SE of 86.63 (±

6.29)%. Rest-activity rhythms showed a mean IV of 0.85 ± 0.18, IS of 0.36 ± 0.11, and RA of 0.75 ± 0.21. A significant association was observed between the total SHI score and the frequency of NSSI (β = -0.018, p = .040, IRR = 0.982), with higher SHI scores associated with a lower frequency of NSSI. For every 1-point increase in sleep health, the rate of NSSI episodes decreased by approximately 1.8%. In additional analyses of SHI subscales, sleep quality was also significantly associated with NSSI frequency (β = -0.014, p = .036, IRR = 0.987), with each 1-point increase in sleep quality associated with an approximately 1.3% reduction in the rate of NSSI episodes. Notably, rest-activity rhythm parameters as well as ISI and PHQ-9 scores did not significantly predict NSSI frequency.

Conclusions

Rest-activity rhythms suggested relatively high rhythm fragmentation and day-to-day inconsistency in sleep-wake schedules compared with the general young adult population. These results underscore the importance of incorporating sleep health assessments into clinical screenings for NSSI. Future research with larger samples is warranted.

Acknowledgements

This research was supported by a grant of the Mental Health related Social Problem Solving Project, funded by the Ministry of Health & Welfare, Republic of Korea (grant number: RS-2024-00409433).

Presenting Author
Tabinda Naz Qureshi (Oman)

Authors
Majid Marzouq Al Jabri (Oman); Hussein Al-Kindy (Oman); Nawal Al Shamli (Oman); Ahmed Al-harmali (Oman); Asma Al Hinai (Oman); Deepali Sanjay Jaju (Oman); Tabinda Naz Qureshi (Oman); Mohammed Al-Abri (Oman)

Presentation Day and Board Number
Saturday, April 11, 2026 | P23

Title
Obstructive Sleep Apnea in Children: Diagnostic Patterns, Treatment Outcomes, and Positive Airway Pressure Therapy Barriers at a Tertiary Center in Oman

Introduction
In children, obstructive sleep apnea (OSA) negatively impacts cognitive, behavioral, and physical health. While globally studied, treatment adherence remains a challenge, particularly in non-Western settings. This study aimed to retrospectively analyze pediatric polysomnography data from 2015 to 2019, examining the type of sleep studies performed and the severity of obstructive sleep apnea (OSA) across different pediatric age groups at Sultan Qaboos University Hospital (SQUH). Additionally, it sought to evaluate treatment strategies with a specific focus on the acceptance, adherence, and barriers to positive airway pressure (PAP) therapy among pediatric patients.

Materials and Methods
A retrospective chart review study was conducted from January 2015 to December 2019. Data were analyzed for 290 pediatric patients, aged 0-18 years, who underwent diagnostic sleep studies at SQUH. Variable assessed included demographics, OSA severity, treatment modalities and PAP adherence outcomes.

Results
Of the 290 pediatric patients included 189 (65.2%) male and 101 (34.8%) female), the majority were aged 5-12 years. OSA was diagnosed in 249 patients (85.9%)), with severe OSA identified in 167 (67%) of cases. Logistic regression revealed that BMI was a significant predictor of severe OSA ($\beta = 0.160$, $p<0.05$). Surgical intervention, primarily adenotonsillectomy, was performed in 53 patients. PAP therapy was recommended for 100 patients, with 82 initiating therapies. The acceptance was 167 (67%), and PAP therapy adherence (defined as usage >4

hours per night) was observed in 38 (69%) of patients. Barriers to adherence included intolerance 23 (41.3%), child refusal 20 (37%), and caregiver-related challenges 11 (19.6%).

Conclusions

Severe OSA was prevalent in 167 (67%) of pediatric patients undergoing sleep studies, highlighting a significant disease burden requiring improved intervention strategies. Despite clear recommendations, PAP therapy adherence was sub-optimal with barriers such as device intolerance and caregiver-related factors limiting effectiveness. Notably, obesity and Down syndrome were common comorbidities associated with severe OSA. Tailored interventions addressing both technical and psychological barriers are critical for enhancing PAP adherence and optimizing pediatric OSA management. These findings are consistent with the international reports, underscoring the need for multidisciplinary approaches aligned with current ATS and ERS guidelines.

Acknowledgements

Ethics Statement: This study was approved by the Ethics Committee of the College of Medicine and Health Sciences at Sultan Qaboos University (MREC #2457).

Conflicts of Interest: The authors declare no conflict of interest.

Funding: This study received no external funding.

Presenting Author
Tabinda Naz Qureshi (United Kingdom)

Authors
Tabinda Naz Qureshi (United Kingdom); Ajibike Martins (United Kingdom); Vasileios Patelis (United Kingdom)

Presentation Day and Board Number
Saturday, April 11, 2026 | P86

Title
Evaluation of Paediatric Sleep Questionnaire in diagnosing obstructive sleep apnoea

Introduction
Obstructive sleep apnoea (OSA) is a common form of sleep disordered breathing in paediatric population. The most common underlying etiology of obstructive sleep apnoea in children is adeno-tonsillar hypertrophy. However, it may also be associated with a variety of underlying conditions. Paediatric Sleep Questionnaire (PSQ) is a screening tool for identifying children with OSA with a score of 0.33 or more considered positive. This study aims to evaluate the diagnostic accuracy of Paediatric Sleep Questionnaire in identifying obstructive sleep apnoea in children with or without comorbidities, using cardiorespiratory polygraphy as the reference standard.

Materials and Methods
This retrospective observational study was conducted at Great Ormond Street Hospital for children. Children aged 2-18 years who underwent polygraphy were included in study. Children aged less than 2 years, those who had not filled the questionaries and failed sleep studies were excluded from study. Children with neuromuscular disease and those with primary lung diseases were also excluded due to the non-obstructive nature of their symptoms. PSQ score was compared with polygraphy findings using sensitivity, specificity, positive predictive value and negative predictive value.

Results
42 children were included in the study. Mean +SD age was 6.07+/-3.7 years. 22 children had no comorbidities and 20 had co-morbidities. Among those with co-morbidities, 5 had craniofacial anomalies, 4 had trisomy 21, 4 had dynamic or fixed airway obstruction, 3 had mucopolysaccharidosis, 2 had cleft palate, 1 had hypotonia, and 1 had an obesity syndrome. Full completion of questionaries was achieved by only 7 patients/carers and 35 had not fully filled the questionnaires by 4.47+/-3.73 questions. Overall sensitivity of PSQ for diagnosing

moderate or severe OSA was 0.73 and specificity was 0.375. Positive predictive value (PPV) was 48.3% and negative predictive value was 64.3%. For children without comorbidities the sensitivity and specificity were 0.66 and 0.38 respectively with PPV 42.9% and NPV 62.5%. For children with co-morbidities sensitivity was 0.8 and specificity was 0.36 with PPV 53.3% and NPV 66.6%.

Conclusions

In conclusion, this study showed comparable sensitivity as reported in previous studies. However, specificity in our study was significantly lower than previously reported, limiting its value in diagnosing children with obstructive sleep apnoea although it can still be useful as a screening tool. Our findings were similar in children with and without co-morbidities. The sensitivity may be underestimated due to partially filled questionnaires, which may improve with supervised completion of the PSQ. Future research can focus on improving sensitivity and specificity of PSQ by assigning different weight to answers that are more strongly associated with presence of OSA.

References:

1. Chervin R D et al. Pediatric Sleep Questionnaire (PSQ): validity and reliability of scales for sleep-disordered breathing, snoring, sleepiness, and behavioural problems. 2000 Feb 1;1(1):21-32. doi: 10.1016/s1389-9457(99)00009-x.

2. Pabary R et al. Screening for sleep-disordered breathing with Pediatric Sleep Questionnaire in children with underlying conditions. 2019 Oct;28(5):e12826. doi: 10.1111/jsr.12826"

Acknowledgements

Great Ormond Street Hospital Sleep team and patients.

Presenting Author
Tahera Doctor (United Kingdom)

Authors
Tahera Doctor (United Kingdom); Meghna Patel (United Kingdom); Joe Madge (United Kingdom); Natalie Blyth (United Kingdom); MOLLA IMADUDDIN Ahmed (United Kingdom)

Presentation Day and Board Number
Friday, April 10, 2026 | P108

Title
Establishing CPAP in Children with Obstructive Sleep Apnoea: Outcomes from a Tertiary Service

Introduction
Paediatric obstructive sleep apnea (OSA) affects approximately 1–4% of otherwise healthy children, with a significant rise in the use of positive airway pressure therapy over the past decade. Continuous positive airway pressure (CPAP) is an effective treatment; however, adherence in children remains challenging. This service evaluation aimed to assess the efficiency and outcomes of a tertiary paediatric CPAP service and to identify factors influencing adherence.

Materials and Methods
A retrospective data collection was conducted for children initiated on CPAP therapy in 2022 at a tertiary paediatric respiratory and sleep service. Data were collected from electronic physiology records and clinic documentation. Outcomes assessed included time from diagnostic sleep study to CPAP initiation, time to establishment, follow-up investigations, and adherence measured via remote monitoring.

Results
Seventeen patients were initiated on CPAP, of whom sixteen were established on therapy and 4 patients did not use after initiation. The median time from baseline sleep study to CPAP initiation was 21 days, and the mean time to establishment was 7 days. Following CPAP initiation, 91.7% of patients underwent repeat oximetry, with a median time of 56 days. Ten of twelve patients had repeat cardiorespiratory sleep studies within one year. Adherence varied considerably particularly number of nights where CPAP was used for more than 4 hours. Several patients demonstrated good early adherence, while others failed to tolerate CPAP due to behavioral, neurodevelopmental, or psychosocial factors, including obesity, autism, and poor engagement with follow-up.

Conclusions

This evaluation demonstrates timely CPAP initiation and establishment within service targets; however, adherence remains a key limitation. Early multidisciplinary support, close follow-up, and targeted desensitization strategies may improve tolerance and long-term adherence. Further research is needed to define paediatric CPAP adherence benchmarks and to develop effective, evidence-based interventions to optimize treatment outcomes.

Acknowledgements

Children under CPAP service at our institution.

Presenting Author
Tahera Doctor (United Kingdom)

Authors
Tahera Doctor (United Kingdom); Fatimah Tiamiyu Mogaji; Joe Madge (United Kingdom); Natalie Blyth (United Kingdom); MOLLA IMADUDDIN Ahmed (United Kingdom)

Presentation Day and Board Number
Saturday, April 11, 2026 | P87

Title
Are Home Sleep Studies Fit for Purpose in Children? A Tertiary Centre Audit

Introduction
Sleep studies are a key diagnostic tool for paediatric sleep-disordered breathing (SDB). The British Thoracic Society (BTS) guidelines encourage the use of home sleep studies where appropriate to improve access to care and reduce hospital attendance. Regular audit of clinical services is essential to ensure compliance with national standards and to optimize patient care pathways. This audit aimed to compare home sleep studies with standard inpatient sleep studies in children, assess diagnostic performance and technical success rates, and identify areas for service improvement.

Materials and Methods
A retrospective audit was conducted of all paediatric sleep studies performed between 1 April 2022 and 1 April 2023 at a tertiary respiratory center. Data were collected from electronic sleep study records. Outcomes included study type, patient age, technical success rate, artefact occurrence, and compliance with BTS guideline recommendations.

Results
A total of 392 sleep studies were performed during the audit period; 40.8% were home studies and 59% were inpatient studies. The majority of inpatient studies were performed in children under five years of age in line with local policy. Overall compliance with national guidance was 70.3%. Technical success rates were high and comparable between modalities, with 95.6% success for home sleep studies and 97.4% for inpatient studies. Unsuccessful home studies were primarily due to technical artefacts, most commonly involving abdominal or thoracic effort belts and oxygen saturation probes.

Conclusions
Home sleep studies demonstrated comparable technical success to inpatient studies and represent a viable alternative for selected paediatric patients, offering improved convenience

and reduced hospital attendance. Inpatient studies remain the gold standard, particularly for younger children, urgent assessments, and cases where clinical findings and home study results are discordant. Ongoing service development, parental education, and continuous audit are essential to improve compliance and optimize diagnostic pathways.

Acknowledgements
Children undergoing sleep studies and their families

Presenting Author
Takiwai Russell-Camp (New Zealand)

Authors
Takiwai Russell-Camp (New Zealand); Justine Camp (New Zealand); Maia Lockyer (New Zealand); Heramaahina Eketone (New Zealand); Rachael Taylor (New Zealand)

Presentation Day and Board Number
Saturday, April 11, 2026 | P88

Title
Whakamoeāriki – Co-Designing Perinatal Māori Sleep Resources

Introduction
Sleep in the perinatal period is a critical determinant of maternal, infant, and whānau (family) wellbeing. For Māori, traditional sleep practices were relational and protective, grounded in whakapapa (genealogy), wairua (spiritual wellbeing), and mauri (life force). Colonisation and medicalisation have disrupted these patterns. Whakamoeāriki (to bring to restful sleep) was developed to restore culturally grounded sleep practices that strengthen hauora (health and wellbeing) across generations.

Materials and Methods
The study used a kaupapa Māori co-design approach (Māori-led, values-based methodology) with 24 participants—12 Māori midwives and 12 whānau. Hui (meetings) and wānanga (collective workshops) were conducted in community and clinical settings. Materials included kōrero (interviews), field notes, and iterative prototypes of sleep resources reflecting three phases: Hine Time (pregnancy and preparation), Rongo Time (soothing and recovery), and Uru Time (settling rituals). Qualitative thematic analysis, guided by Māori principles of whanaungatanga (relationships) and mauri, was used to identify design elements that support perinatal sleep health.

Results
Participants described perinatal sleep as more than physical rest—it is a cultural act of care and connection. The co-designed resources promoted calmer sleep environments, reduced maternal stress, and enhanced whānau cohesion. Central themes included rhythm, relationality, and the protection of wairua through shared rituals of rest.

Conclusions
Whakamoeāriki demonstrates how Indigenous co-design processes can revitalise perinatal sleep practices and inform holistic models of care. Integrating mātauranga Māori (Māori

knowledge) into perinatal frameworks offers a scalable, culturally responsive approach to improving maternal and infant sleep health.

Acknowledgements
Health Research Council, families and providers

Presenting Author
Tasnim Kabir Ayrin (Bangladesh)

Authors
Tasnim Kabir Ayrin (Bangladesh); Yujing Fu (United States); Shathi Rani Roy (Bangladesh); Reza Mostary Akhter (Bangladesh); Reun Tanzin Oshru (Bangladesh); Habiba Akter (Bangladesh); Shafiqul Ameen (Bangladesh); Nicolò Pini (Bangladesh); Seonjoo Lee (United States); William P. Fifer (United States); Monica Ordway (United States); Fahmida Tofail (Bangladesh); Shams El Arifeen (Bangladesh); Ayesha Sania (United States)

Presentation Day and Board Number
Saturday, April 11, 2026 | P89

Title
Mother–Child Interaction and Sleep Outcomes Among Toddlers in Urban Bangladesh

Introduction
Early child sleep is shaped by the caregiving context, including the quality of parent–child interactions. Prior studies from high-income settings link differences in parent–child interaction quality to sleep onset and night waking, with evidence of bidirectional relationships. However, data from South Asian contexts, where co-sleeping is universal, are limited.

Materials and Methods
Data were collected in a prospective cohort study conducted in urban Dhaka, Bangladesh. Between 18–24 months, mother–child interaction quality was assessed using the Observation of Mother–Child Interaction (OMCI), a structured, direct observational tool validated in Pakistan and adapted for use in Bangladesh. The OMCI includes 12 maternal items assessing responsiveness, emotional support, support for attention, and language input, and 7 child items assessing social engagement, communication, and affect, scored during a 5-minute play interaction, with higher scores indicating more responsive interactions. Child sleep was assessed using both parent-reported and objective measures. Parent-reported sleep outcomes were obtained using the Brief Infant Sleep Questionnaire–Revised Short Form (BISQ-R SF). Objective sleep was measured using wrist-worn actigraphy (Philips Actiwatch 2). Linear regression models examined associations between maternal and child OMCI scores and sleep dimensions, adjusting for child age, sex, and family income.

Results
A total of 172 mother–child dyads with OMCI and parent-reported sleep data were included.

Of them 127 (73.8%) had actigraphy data. The mean maternal OMCI score was 23.09 (SD 4.32), and the mean child OMCI score was 9.64 (SD 2.74). Toddlers slept an average of 9.5 hours (SD 50 minutes) at night as measured by actigraphy. Higher maternal OMCI scores were associated with shorter nighttime sleep duration. Each one-point increase in maternal OMCI score was associated with a 2.4-minute decrease in nighttime sleep duration measured by actigraphy (95% confidence interval, CI −4.32 to −0.52; p = 0.01). Higher child OMCI scores were associated with parent-reported sleep latency and night waking frequency. Each one-point increase in child OMCI score was associated with a 3.05-minute increase in sleep latency (95% CI 1.50 to 4.60; p = 0.0002). Mean sleep latency was 30.14 minutes (SD 22.87). Higher child OMCI scores were also associated with more frequent night waking (β = 0.07; 95% CI 0.00 to 0.14; p = 0.03). Median night waking frequency was 2 times (range 1–4) per night. No significant associations were observed between OMCI scores and other parent-reported and actigraphy derived sleep outcomes.

Conclusions

Quantitatively assessed mother–child interaction quality was associated with shorter nighttime sleep duration, longer sleep latency, and more frequent night waking in this urban Bangladeshi cohort. These findings may reflect greater toddler dependence on maternal involvement at bedtime, including breastfeeding for sleep initiation and limited opportunities for independent self-soothing. Additional data on bedtime-specific interactions are needed to better understand how mother–child interaction patterns shape sleep regulation. Ongoing longitudinal follow-up in this cohort will allow us to examine these relationships over time and inform recommendations for structured, developmentally appropriate bedtime interactions.

Acknowledgements

We thank the participating families and the field teams who identified families through door-to-door visits and support the ongoing retention efforts of this cohort.

Presenting Author
Teresa Almeida Lopes (Portugal)

Authors
Teresa Almeida Lopes (Portugal); Armanda Rebelo (Portugal); Raquel Penteado (Portugal); Sofia Ferreira (Portugal); Teresa Reis Silva (Portugal); Miguel Félix (Portugal); Núria Madureira (Portugal)

Presentation Day and Board Number
Saturday, April 11, 2026 | P91

Title
Obstructive sleep apnea in children with trisomy 21

Introduction
Trisomy 21 (T21) is associated with an increased risk for sleep-disordered breathing, including obstructive sleep apnea (OSA), often with atypical clinical presentations (absence of snoring and witnessed apneas). Early identification is essential, as OSA has significant cardiovascular and neurobehavioral consequences. This study aims to characterize a cohort of children with T21 referred to a Pediatric Pulmonology Sleep Clinic (PPSC) and to describe their clinical features, polysomnographic findings, and therapeutic approaches.

Materials and Methods
This was a retrospective observational study including children with T21 referred to PPSC. All patients underwent polysomnography (PSG). Demographic, clinical and PSG data were collected. Sleep-disordered breathing was classified as follows: no respiratory compromise, upper airway resistance syndrome (UARS) (RERA > 1/hour), mild OSA (AHI [1-5[events/hour), moderate OSA (AHI [5-10[events/hour) or severe OSA (AHI ≥10 events/hour), and hypoventilation ($TcCO_2$ > 50 mmHg in ≥ 25% of total sleep time). Time between first sleep/pulmonology consultation and first PSG was calculated. Given the descriptive nature of this study and the small sample size, only descriptive statistics were performed.

Results
Thirty-six children with T21 were included. Median age at first sleep/pulmonology consultation was 5.0 years (IQR 3.1–7.7). Clinical features included snoring in 52.8% (n=19), witnessed apneas in 41.7% (n=15), and daytime symptoms in 19.4% (n=7). Insomnia was present in 44.4% (n=16). Comorbidities were present in 91.7% (n=33): congenital heart disease (n=14), obesity (n=5), ADHD (n=3), autism spectrum disorder (n=3) and allergic rhinitis (n=1). Prior ENT surgery had been performed in 33.3% (n=12), and 69.4% (n=25) received medical

treatment. PSG was performed after a median time of 9.9 months (IQR 6.1-16.3) after first consultation. Overall, 86.1% (n=31) of patients presented sleep-disordered breathing: UARS in 5.6% (n=2), OSA in 75.0% (n=27), and hypoventilation in 5.6% (n=2). OSA severity was mild in 38.9% (n=14) with mean AHI 1.6/h (IQR 1.3–2.8), moderate in 22.2% (n=8) with mean AHI 6.1/h (IQR 5.8–8.0), and severe in 13.9% (n=5) with mean AHI 23.0/h (IQR 11.7–23.7). Among children with OSA, 7 (23%) presented neither snoring nor witnessed apneas. Median CAI was 0.1/h (IQR 0.0–0.6). Hypoventilation criteria were met by 25.0% of patients with available $TcCO_2$ monitoring. Non-invasive ventilation was initiated in 25.0% (n=9) (all with CPAP). Among these patients, 44.4% (4/9) demonstrated good adherence.

Conclusions

Despite the absence of inferential statistical analysis, the low prevalence of T21 in the general population underscores the relevance of this study for improving the understanding of sleep-disordered breathing in these children. In this cohort, sleep-disordered breathing was highly prevalent and even diagnosed despite the absence of snoring or witnessed apneas. PSG was performed early after referral, allowing timely diagnosis and intervention. These findings highlight the limitations of symptom-based screening in children with T21 and reinforce the need for early PSG referral, even in minimally symptomatic patients.

Presenting Author
Teresa Almeida Lopes (Portugal)

Authors
Teresa Almeida Lopes (Portugal); Diana Valbom GonçalvesMaria Miguel Duarte (Portugal); Andreia Pinto (Portugal); Micaela Félix (Portugal); Sandra Façanha (Portugal); Sofia Ferreira (Portugal); Núria Madureira (Portugal)

Presentation Day and Board Number
Saturday, April 11, 2026 | P92

Title
Children's Sleep Habits Questionnaire as a screening tool for obstructive sleep apnea and its sleep comorbidities

Introduction
Obstructive sleep apnea (OSA) is a common condition with potential neurobehavioral and cardiovascular consequences. Children with suspected OSA are frequently reported to have additional sleep-related problems. The clinical relevance of these non-respiratory sleep disturbances in children with OSA remains unclear. Sleep questionnaires are useful in screening sleep problems, including OSA. Children's Sleep Habits Questionnaire (CSHQ) is one of the few validated to Portuguese language. This study aims to evaluate the utility of the CSHQ total score and the sleep-disordered breathing subscale as screening tools for OSA, and evaluate the presence of other sleep problems in children with OSA confirmed by polysomnography (PSG).

Materials and Methods
A retrospective observational study was conducted using data from children aged 2–10 years who underwent PSG for suspected OSA. The sample included PSG performed between January/2017 and July/2025. OSA diagnosis and severity were established based on the PSG apnea–hypopnea index (AHI): mild [1-5[events/hour, moderate [5-10[events/hour and severe ≥10 events/hour. Sleep habits were assessed using the Portuguese-validated version of the CSHQ, including its total score (positive Sleep Disturbance Index [SDI] if CSHQ ≥48) and individual subscales. Patients were divided into two age groups: preschool (2–5 years) and school-age (6–10 years). Non-parametric tests (Mann–Whitney U) were used for continuous variables, and chi-square or Fisher's exact tests were used for categorical variables, with a significance level of 0.05.

Results

The study included 184 children (70.1% male), with a median age of 7 years (IQR 5–9). Comorbidities were present in 46.2% (n=85): history of adenoidectomy and/or tonsillectomy (n=65), obesity (n=10), combined adenotonsillectomy and obesity (n=7), allergic rhinitis (n=2), and minor facial dysmorphisms (n=1). Snoring and apnea/gasping episodes were more common in school-aged children than in preschoolers (79.3% vs. 69.4%; p=0.23 and 55.1% vs. 43.0%; p=0.196). Daytime symptoms (sleepiness, irritability, and/or psychomotor agitation) were significantly more prevalent among school-aged children (55.6% vs. 26.5%; p=0.001). OSA was confirmed by PSG in 17.9% (n=33), with a higher prevalence in preschool-aged children (20.4%vs. 17.0%; p=0.598). Among children with PSG-confirmed OSA, 28 (84.8%) were classified as mild (mean AHI 1.59±0.81 events/hour), four as moderate (mean AHI 6.48±1.36 events/hour), and one as severe (AHI 12 events/hour). A positive SDI in the CSHQ was found in 25.5% of the children (n=47), of whom 15 had PSG-confirmed OSA. No significant association was found between a positive SDI and the presence of PSG-confirmed OSA (p=0.259). The subscale assessing sleep-disordered breathing symptoms showed significantly higher scores in children with OSA in both preschool and school-age groups (p=0.013; p<0.001). All other CSHQ subscales did not show a significantly higher score in children with OSA (all p>0.05 in both age groups).

Conclusions

In this cohort of children referred for suspected OSA, a positive SDI in the CSHQ was not predictive of PSG-confirmed OSA, except for the sleep-disordered breathing subscale. Sleep problems were highly prevalent in this cohort but were not higher in the group of PSG-confirmed OSA, suggesting that factors other than OSA contribute to these sleep disturbances in this population.

Presenting Author
Thien - Huong Ho (Vietnam)

Authors
Thien - Huong Ho (Vietnam)

Presentation Day and Board Number
Saturday, April 11, 2026 | P93

Title
Drug-Induced Sleep Endoscopy Characterizes Airway Obstruction Patterns and Treatment Outcomes in Children with Severe Obstructive Sleep Apnea

Introduction
Pediatric obstructive sleep apnea (OSA) is a heterogeneous condition with varying anatomical and functional mechanisms of airway obstruction. Drug-induced sleep endoscopy (DISE) enables dynamic evaluation of the upper airway during sleep and may provide clinically relevant information beyond routine assessment. This study describes DISE findings, management strategies, and short-term outcomes in children with severe OSA

Materials and Methods
We conducted a retrospective descriptive study of children with suspected obstructive sleep apnea who underwent DISE at a tertiary pediatric center. Demographic data, baseline polysomnographic parameters, DISE findings, treatment strategies, and follow-up outcomes were reviewed. Airway obstruction was characterized by collapse pattern, residual adenoid tissue, turbinate involvement, and the presence of paradoxical vocal cord motion (PVCM). Apnea–hypopnea index (AHI) was reassessed 6 months after intervention.

Results
A total of 29 children underwent DISE. The mean age was 5.8 years, with a predominance of male patients. Baseline OSA severity was high, with a mean AHI of 45 ± 9 events/hour.

DISE revealed residual adenoid vegetation in 8 cases (27.6%) and inferior turbinate-related obstruction in 1 case (3.4%). Paradoxical vocal cord motion was identified in 5 patients (17.2%). Based on DISE findings, 8 patients (27.6%) underwent surgical intervention, 16 patients (55.2%) were managed with auto-adjusting positive airway pressure (AutoPAP), and 5 patients (17.2%) with PVCM were initially indicated for conservative management, including respiratory muscle exercises and proton pump inhibitor therapy (esomeprazole).

At 6-month follow-up, mean AHI decreased to 25 ± 4 events/hour in both surgical and non-surgical groups. Despite conservative treatment, all 5 patients with PVCM failed internal therapy and subsequently required AutoPAP therapy.

Conclusions

DISE provided valuable insights into the diverse anatomical and functional contributors to severe pediatric OSA. Residual adenoid tissue and paradoxical vocal cord motion were common findings that influenced management decisions. Although both surgical and non-surgical approaches resulted in AHI reduction at 6 months, children with PVCM showed poor response to conservative treatment and ultimately required positive airway pressure therapy. These findings highlight the role of DISE in guiding individualized treatment strategies in pediatric obstructive sleep apnea.

Acknowledgements

The authors thank the patients and their families for their participation and acknowledge the multidisciplinary team involved in DISE evaluation and follow-up care.

Presenting Author
Thomas Maycock (United Kingdom)

Authors
Thomas Maycock (United Kingdom); Zara Howarth (United Kingdom); Hazel Evans (United Kingdom)

Presentation Day and Board Number
Saturday, April 11, 2026 | P94

Title

Clinical outcomes of screening oxycapnography sleep studies for children commencing nighttime postural equipment support therapy

Introduction
Children and young people with severe neurodisability often require 24-hour postural care, including nighttime postural equipment (NTPE), to optimise positioning, comfort, and prevent long-term complications as per National Institute of Clinical Excellence (NICE) recommendation. These children are also at increased risk of sleep-disordered breathing (SDB), which is frequently asymptomatic and difficult to detect using questionnaires alone, prompting the need for objective respiratory screening.

This retrospective study evaluated an NTPE screening pathway at Southampton Children's Hospital using overnight oxycapnography to detect gas-exchange abnormalities suggestive of SDB.

Materials and Methods
Patients were identified retrospectively from electronic records using the term "sleep system" as the term used locally for NTPE, and inclusion was confirmed through oxycapnography reports and referral letters requesting screening for gas-exchange abnormalities at NTPE initiation. Data were collected over an eleven-year period from June 2014 to January 2025.

Peripheral oxygen saturation was measured using Masimo radical oximeters, and transcutaneous CO_2 was measured using Sentec monitoring systems. Analysis of data was performed using Visi-Download software. Oximetry outcomes included mean oxygen saturations (SpO_2), 3% and 4% oxygen desaturation indices (3% ODI and 4% ODI). Capnography outcomes included median and peak transcutaneous CO_2 levels, percentage of time with CO_2 ≥6.5 kPa, and assessment of transient CO_2 rises, particularly during periods of active sleep."

Results

Seventy children were referred for screening from the community with no known preceding SDB. Most children had normal mean oxygen saturation, 3% and 4% ODIs and median carbon dioxide levels. However, a significant minority of 10 children (14.3%) had severely abnormal studies with elevated 3% ODIs (ranging 9.95-35.85) and 4% ODIs (ranging 4.89-22.28) requiring further investigation with full cardiorespiratory sleep studies (CRSS). Ultimately, seven children (10.0% of the total cohort) required clinical intervention, including CPAP, BiPAP, home oxygen, adenotonsillectomy or input from other specialties. Pulse oximetry abnormalities were more predictive of clinically relevant SDB than transcutaneous carbon dioxide measurements.

Conclusions

The findings support routine respiratory screening when initiating NTPE, as it can identify previously undiagnosed and clinically significant SDB in children with neurodisability. It remains unclear whether abnormalities are attributable to NTPE use or to the underlying neurological conditions for which it is indicated, as such, further research is needed to define high-risk groups and assess the value of screening.

Presenting Author
Ting Ting Chen (Hong Kong)

Authors
Ting Ting Chen (Hong Kong); Albert Martin Li (Hong Kong); Sima Dastamooz (Hong Kong); Chun Ting Au (Hong Kong); Nobel Tsz Kin Yuen (Hong Kong); Ming Yang (Hong Kong); Siyu Dai (Hong Kong); Joey Wing Yan Chan (Hong Kong); Ngan Yin Chan (Hong Kong); Yun Kwok Wing (Hong Kong); Yvonne Yin Hung Chow (Hong Kong); Kathy Yuen Yee Chan (Hong Kong); Huichen Zhu (Hong Kong); Kate Ching-Ching Chan (Hong Kong)

Presentation Day and Board Number
Saturday, April 11, 2026 | P95

Title
Association between Moderate-to-Vigorous Physical Activity and Circadian Rest-Activity Rhythm in Children with Obstructive Sleep Apnoea

Introduction
Obstructive sleep apnoea (OSA) affects 1-5% of school-aged children. Children with OSA show significantly reduced peak exercise capacity independent of body weight. However, whether this translates to reduced daily physical activity (PA) levels remains unclear. Adequate PA and stable rest-activity rhythms are critical for childhood development. The World Health Organisation (WHO) guideline recommends an average of ≥60 min/day moderate-to-vigorous physical activity (MVPA) across the week for children to support their physical and mental health. This study examined whether childhood OSA is associated with reduced PA levels, disrupted PA patterns, and whether circadian rhythms moderate this association.

Materials and Methods
Cross-sectional study of 49 children aged 5-12 years (OSA[n=34], controls[n=15]). All underwent overnight inpatient polysomnography and 14-day wrist actigraphy. OSA was defined as Obstructive Apnoea-Hypopnea Index (OAHI) ≥1 event/hour with symptoms suggestive of obstructive sleep-disorder breathing. Primary outcomes were the proportion of participants meeting the WHO recommendations for daily MVPA (≥60 min/day MVPA) and participants' daily MVPA durations. Secondary outcomes were circadian rest-activity parameters including Interdaily Stability (IS), Intradaily Variability (IV), and PA pattern fragmentation (Inactivity to MVPA transition probability [TP]). Group differences were tested using chi-square tests for categorical variables and independent t-tests or Mann-Whitney U tests for continuous variables. Moderation effect was evaluated by testing the interaction

between OAHI and circadian rhythm measures in multivariable regression models adjusted for age, sex/gender, BMI z-score, and Total Sleep Time (TST).

Results

The 49 children were comparable in age (OSA=8.67±1.97 vs. non-OSA=9.22±2.28 years, p=0.426), gender (76% vs. 67% male, p=0.715), and TST (514.34±78.71 vs. 532.53±54.77 min/night), but significantly differed in OAHI (median [IQR]: 4.02[1.70-19.66] vs. 0.14[0.00-0.28] events/hour). Average daily PA volume (59.36±17.30 vs. 60.79±18.94 mg/day, p=0.796) and WHO MVPA guideline adherence did not differ between groups (47% vs 40%, p=0.884). Mean daily MVPA duration was similar (54.53±22.85 vs 54.05±25.30 min/day, p=0.948). In contrast, children with OSA showed higher Inactivity to MVPA TP than controls (p=0.044). In multivariable regression, lower IV (β=−56.80, p=0.009) and higher IS (β=78.99, p=0.033) were independently associated with greater daily MVPA duration independent of OAHI (adjusted R^2=0.395, p

Conclusions

Children with OSA demonstrated similar daily PA levels and a comparable proportion meeting WHO recommendation for MVPA compared to controls. Notably, circadian rhythm stability (IS) was significantly associated with daily MVPA duration and moderated the OAHI-MVPA relationship. These findings suggest that circadian rhythm stability is a potential correlate of physical activity engagement in children. While causal inference cannot be made, circadian rhythm characteristics may warrant consideration in future observational and interventional studies examining physical activity behaviours.

Acknowledgements

This study is supported by the General Research Fund, Research Grants Council (Reference number: 14118724). We express our sincere gratitude to all participants and their families for their valuable contribution.

Presenting Author
Valentina Marazzotta (Italy)

Authors
Valentina Marazzotta (Italy); Indira Nathaly Salazar Rivera (Italy); Giorgia Brigati (Italy); Marcella Battaglini (Italy); Gaia Burlando (Italy); Gabriele Arnulfo (Italy); Luca Antonio Ramenghi (Italy); Sara Uccella (Italy); Lino Nobili (Italy)

Presentation Day and Board Number
Saturday, April 11, 2026 | P96

Title
Limitations of AASM Neonatal Sleep-Staging Criteria in Very Preterm Infants: Insights From 24-Hour Video-Polysomnography

Introduction
Birth at very preterm gestational ages disrupts the fetoplacental milieu during a critical developmental stage in which sleep acts as a major driver of neuronal growth, synaptogenesis, and the emergence of thalamocortical circuits. Preliminary findings from our cohort of very preterm infants indicate that greater total sleep time is associated with more favorable short- and mid-term neurodevelopmental profiles, underscoring the need for precise, developmentally appropriate, and physiologically grounded characterization of sleep in this population. However, the neonatal sleep-staging framework established by the American Academy of Sleep Medicine (AASM) was derived from term-born cohorts and may not accurately represent the rapidly fluctuating electrophysiological and behavioral patterns observed in very preterm infants during early postnatal development. We aimed to assess the suitability of the AASM neonatal sleep-staging criteria for very preterm infants at 32±2 weeks postmenstrual age by evaluating the extent to which these rules can capture the immature and rapidly shifting sleep–wake architecture recorded in continuous 24-hour video-polysomnography.

Materials and Methods
Twenty continuous 24-hour video-polysomnographic (v-PSG) recordings were acquired in very preterm infants. The protocol included an 8-channel EEG montage (Fp1–C3–T3–O1, Fp2–C4–T4–O2), bilateral EOG, submentalis and deltoid EMG, ECG, thoraco-abdominal inductive plethysmography, pulse oximetry, and synchronized video. Sleep staging was performed according to the AASM neonatal criteria (Grigg-Damberger, 2016).

Results

The 24-hour v-PSG recordings revealed substantial intra-individual variability in sleep organization. Infants exhibited alternating segments of more mature and clearly immature patterns, with fluctuations in continuity, amplitude, and associated behaviors. Abrupt sleep-onset episodes (<1–3 min) were common, and rapid state transitions (<60 s) often occurred within a single 30-second epoch or followed acoustic stimulation. Many epochs scored as transitional sleep displayed marked heterogeneity, combining active-sleep– and quiet-sleep–like features and lacking stable markers that would allow unambiguous classification. Occasional episodes of high-voltage delta activity were observed after prolonged wakefulness. Several behaviors essential for accurate staging—including eye-opening and closure sequences, subtle arousals, and small motor events—were identifiable only through synchronized video, indicating that EEG and polygraphy alone do not fully capture state changes in this developmental window.

Conclusions

The AASM neonatal sleep-staging criteria appear only partially adequate for very preterm infants in the early postnatal period, as they do not sufficiently represent the brief transitions and heterogeneous intermediate states that characterize their immature sleep–wake organization. Continuous 24-hour v-PSG proved both feasible and essential for documenting these features with the temporal resolution required in this developmental window. Refining classification frameworks to reflect the electrophysiological and behavioral characteristics of very preterm infants may strengthen the accuracy and developmental relevance of sleep assessment and support future efforts toward early identification of neurodevelopmental risk trajectories.

Acknowledgements

We thank the Neonatologists and Pediatric Nurses of the Neonatal Intensive Care Unit, the Engineering collaboration team, the staff of the Child Neuropsychiatry Department, and the parents of the enrolled infants for their support and cooperation.

Presenting Author
Valérie Lebel (Canada)

Authors
Valérie Lebel (Canada); Laura Ramos Socarras (Canada); Geneviève Forest (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P97

Title
Understanding the Determinants of Sleep Characteristics in Preterm Infants During the First Year Following Neonatal Unit Discharge

Introduction
Globally, nearly 10% of newborns are born prematurely. Due to the immaturity of their physiological systems and the need for highly specialized care, these infants require hospitalization in neonatal units. Their immature neurological development results in less organized and shorter sleep during the first months—and even years—of life. Consequently, after the transition from the neonatal unit to the home environment, the sleep patterns of preterm infants differ from those of term-born infants. Multiple factors may influence the quality of their sleep, including sociodemographic characteristics, family context, and parental psychological well-being. However, limited empirical evidence is available to identify which factors most strongly influence the sleep of preterm infants following hospitalization.

The aim of this study was to explore whether infant age, presence of siblings, maternal educational level, and maternal depressive symptoms are associated with sleep duration among preterm infants during the first 12 months after their transition home following neonatal hospitalization.

Materials and Methods
This descriptive correlational quantitative study recruited 93 dyads of mothers and their preterm infants (born at <37 weeks of gestation) who had transitioned to the home environment within the past 12 months. Recruitment took place in a university hospital center and through social media. Participants completed a sociodemographic questionnaire (maternal and infant characteristics), the Edinburgh Postnatal Depression Scale (maternal depressive symptoms), and the Brief Infant Sleep Questionnaire (infant sleep characteristics). Correlation analyses and multiple linear regressions were performed to examine associations among the study variables.

Results

The mean gestational age of the infants was 30 (±3.3) weeks, and their mean chronological age at the time of data collection was 6 (±3.6) months. Most mothers had completed postsecondary education (n = 70; 74.5%), and 46.8% (n = 44) had other children at the time of their preterm infant's birth. On average, mothers reported that their infant slept 9.2 (±1.7) hours per night.

Correlation analyses showed that the child's nighttime sleep duration was significantly and positively associated with maternal education level and the infant's current age. This indicates that higher maternal education levels and greater infant age are associated with longer sleep duration. The results also show a significant positive correlation between the infant's chronological age and the presence of maternal depressive symptoms, indicating that mothers with older infants reported higher levels of depressive symptoms. Moreover, regression analyses indicated that the infant's age was the strongest predictor of sleep duration ($p = 0.017$; 95% CI = 0.022-0.217), even when maternal education, presence of siblings, and maternal depressive symptoms were included in the model.

Conclusions

Maternal educational level, along with the infant's chronological age, are important factors influencing sleep patterns among preterm infants. It remains plausible that additional, unaccounted-for factors may have exerted an influence on the sleep patterns of preterm infants. Future research should undertake a more exhaustive examination of these potential determinants. Nonetheless, the findings of this study are noteworthy and warrant careful consideration by healthcare professionals, as they play a key role in supporting families during and after the transition home.

Presenting Author
Vasileios Patelis (United Kingdom)

Authors
RIcky Damm (United Kingdom); Leilani Mensah-Manuel (United Kingdom); Matthew Davies (United Kingdom); Martin Samuels (United Kingdom); Elaine Chan (United Kingdom); Vasileios Patelis (United Kingdom)

Presentation Day and Board Number
Saturday, April 11, 2026 | P98

Title
Transcutaneous vs end-tidal CO2 monitoring in tracheostomy ventilation paediatric sleep studies

Introduction
Monitoring of Carbon Dioxide (CO2) levels is fundamental in optimising ventilation during sleep studies. Arterial CO2 measured via Arterial blood gas (ABG) is considered gold standard but does not provide continuous trend of CO2 levels. As non-invasive alternatives, End-tidal CO2 (EtCO2) and Transcutaneous CO2 (TcCO2) recordings have been used during sleep studies. Although TcCO2 shows good agreement with Arterial CO21, there is mixed evidence about reliability of EtCO2 measurements during sleep1,2, This is the first study to compare TcCO2 and EtCO2 for tracheostomy ventilated children.

Materials and Methods
We recorded TcCO2 and EtCO2 in children on tracheostomy ventilation, who attended Great Ormond Street Hospital for a cardiorespiratory sleep study between December 2024 and December 2025. Two devices were used simultaneously - Masimo Rad-97® NomoLine® Capnography with Airway Adapter Set applied between ventilator tubing and tracheostomy, and Radiometer TCM5 with Sensor 92 applied sub-clavicle. Stowood Ltd VisiDownload software was used to analyse Rad-97®, and Natus® Embla® Remlogic for TCM5 data. Patients with

Results
20 children, Median (IQR) age 7 (4,13) years were studied; 8 studies excluded due to reduced reliable recording time on EtCO2. Simultaneous TcCO2 and EtCO2 recording was achieved in 12 children. We compared mean and max CO2 for each patient measured by EtCO2 and TcCO2. Bland-Altman plot was used to compare data. There was a mean bias of -3.4mmHg for EtCO2mean of compared to TcCO2mean. Standard deviation (SD) was 6.1mmHg with 95%

limits of agreement (LoA) -8.5 to +15.4 mmHg. The mean bias for EtCO2max compared to TcCO2max was -0.34mmHg with SD 11.1mmHg and LoA -22.1 to +21.4 mmHg. There were insufficient data to compare percentage of sleep with CO2 ≥50mmHg.

Conclusions

This study shows that EtCO2 underestimates CO2mean compared to TcCO2 by 3.4mmHg, and CO2max by 0.34mmHg. Although the bias is relatively small, there are wide LoA suggesting inconsistent measurements of EtCO2. The bias is partly physiological, due to presence of anatomical dead space, but the results are potentially affected by intermittent poor EtCO2 signal and difficulty with removing artefact without breath-by-breath data on the software used. Furthermore, high failure rate (poor quality EtCO2 recording in 40% studies) limits usefulness of EtCO2 recording, especially in unsupervised environments. Poor EtCO2 signal can be associated with sampling line placement, condensation within line, leak, patient-ventilator asynchrony. Limitations include small sample size, different software for EtCO2 and TcCO2 analysis. Future research can review if changing sample line placement improves EtCO2 trace limiting artefact and high failure rates.

Acknowledgements

1. Orlikowski, D.et al Comparison of ventilator-integrated end-tidal CO2 and transcutaneous CO2 monitoring in home-ventilated neuromuscular patients. Respiratory Medicine, 117,pp.7–13.

2. Won YH et al Sleep transcutaneous vs. end-tidal CO2 monitoring for patients with neuromuscular disease. Am J Phys Med Rehabil 2016;95:91Y95."

Presenting Author
Watit Niyomkarn (Thailand)

Authors
Watit Niyomkarn (Thailand)

Presentation Day and Board Number
Saturday, April 11, 2026 | P99

Title
Prevalence and Risk Factors for Unplanned Hospital Readmission in Children Receiving Invasive Home Mechanical Ventilation

Introduction
Children discharged with invasive home mechanical ventilation (HMV) often have complex, chronic conditions and require comprehensive home care, including tracheostomy management, mechanical ventilator care, and tube enteral feeding. Despite thorough discharge preparation and adequate caregiver training, these children remain at high risk for unexpected acute illnesses that frequently result in unplanned hospital readmissions. This study aimed to determine the prevalence and identify risk factors for unplanned hospital readmission within 12 months following the first hospital discharge with invasive HMV.

Materials and Methods
We conducted a retrospective cohort study of children discharged with invasive HMV whose caregivers had completed a standardized respiratory home care training program at King Chulalongkorn Memorial Hospital between January 2005 and November 2025. Data collected included demographic characteristics, comorbidities, indications for invasive HMV, psychosocial factors, and unplanned respiratory-related readmissions within 12 months after discharge. Factors associated with unplanned readmission were analyzed using multivariate logistic regression.

Results
A total of 52 children were included; the median age at discharge was 36 months (IQR 18–120), and 26 (50%) were male. The most common underlying conditions were neuromuscular disorders (17, 32.7%), followed by genetic disorders (15, 28.8%) and chronic lung disease (13, 25.0%). The leading indications for invasive HMV were neuromuscular disease (23, 44.2%), impaired control of breathing (14, 26.9%), and lung/airway disorders (12, 23.1%). Within 12 months after first discharge, 33 children (63.5%) had ≥1 unplanned respiratory-related readmission; the median number of readmissions was 1 (IQR 1–2.5), and the median time to

first readmission was 115 days (IQR 41.5–192). Pneumonia and tracheitis accounted for most readmissions (84.8%). On multivariable analysis, gastroesophageal reflux disease (aOR 7.29, 95% CI 1.16-46.02; p=0.034) and peak inspiratory pressure ≥15 cm H_2O (aOR 8.75, 95% CI 1.07-71.75; p=0.043) were independently associated with 1-year unplanned respiratory-related readmission.

Conclusions

Unplanned respiratory-related readmissions within 12 months after the initial discharge on invasive HMV were common, with pneumonia and tracheitis being the predominant causes. Gastroesophageal reflux disease and higher ventilator pressure requirements were independently associated with readmission, suggesting that early identification of high-risk patients and targeted post-discharge strategies. Particularly, optimizing reflux/aspiration management, airway clearance, and close follow-up may help reduce readmissions.

Acknowledgements

The multidisciplinary care team that cares for children requiring invasive HMV at King Chulalongkorn Memorial Hospital, Thai Red Cross Society

Presenting Author
Wei-Chih Chin (Taiwan)

Authors
Wei-Chih Chin (Taiwan); Yu-Ching Wang (Taiwan); Yu-Shu Huang (Taiwan)

Presentation Day and Board Number
Friday, April 10, 2026 | P53

Title
Effects of Fecal Microbiota Transplantation on Sleep and Circadian Rhythms of Children and Adolescents with Autism Spectrum Disorder

Introduction
The gut–brain axis plays a critical role in neurodevelopment and behavioral regulation. Emerging evidence indicates that fecal microbiota transplantation (FMT) may alleviate a variety of symptoms in individuals with autism spectrum disorder (ASD) by modulating gut microbial composition. Sleep disturbances are highly prevalent in ASD and are closely linked to behavioral and functional impairment. This preliminary study aims to evaluate the potential efficacy of FMT in improving both overall clinical severity and sleep problems in patients with ASD.

Materials and Methods
Patients with ASD were recruited and received FMT. Assessments were conducted at baseline and 3 months post-treatment. Overall clinical status was evaluated using the Clinical Global Impression scale (CGI). Sleep outcomes were measured by the Children's Sleep Habits Questionnaire (CSHQ) and objectively with actigraphy. Parametric and non-parametric analyses of actigraphy-derived sleep and circadian rhythm variables were performed. Changes from baseline to 3 months were analyzed using the Mann–Whitney U test.

Results
A total of 17 patients with ASD were included (mean age 13.64 ± 5.6 years; 82.4% male). At 3 months post-FMT, significant improvements were observed in CGI-S (5.41 ± 0.51 vs. 4.06 ± 0.56, p=0.000). CSHQ showed decreased parasomnias (8.00 ± 1.47 vs. 6.85 ± 0.69, p=0.005) and sleep-disordered breathing (4.08 ± 1.19 vs. 3.46 ± 0.78, p=0.04), but increased daytime sleepiness (10.54 ± 3.55 vs. 12.62 ± 3.23, p=0.017). Actigraphy demonstrated reduced sleep onset latency (20.32 ± 14.66 vs. 15.35 ± 9.47, p=0.037). Non-parametric circadian rhythm variables also showed significantly changes after FMT, including decreased interdaily stability (0.51 ± 0.13 vs. 0.39 ± 0.13, p=0.027) and M10 (317.55 ± 99.18 vs. 263.64 ± 82.62, p=0.025).

Conclusions

FMT may improve overall clinical condition and modulate sleep-related outcomes in children and adolescents with ASD. Significant changes have been found across subjective and objective sleep parameters, and indicate that gut–brain interventions may influence both sleep and circadian rhythms. Studies with larger sample sizes and longer follow-up periods are needed to confirm its efficacy and clarify underlying mechanisms.

Presenting Author
Wei-Chih Chin (Taiwan)

Authors
Wei-Chih Chin (Taiwan); Yu-Ching Wang (Taiwan); Yu-Shu Huang (Taiwan)

Presentation Day and Board Number
Saturday, April 11, 2026 | P100

Title
Effects of Fecal Microbiota Transplantation on Sleep and Circadian Rhythms of Children and Adolescents with Autism Spectrum Disorder

Introduction
The gut–brain axis plays a critical role in neurodevelopment and behavioral regulation. Emerging evidence indicates that fecal microbiota transplantation (FMT) may alleviate a variety of symptoms in individuals with autism spectrum disorder (ASD) by modulating gut microbial composition. Sleep disturbances are highly prevalent in ASD and are closely linked to behavioral and functional impairment. This preliminary study aims to evaluate the potential efficacy of FMT in improving both overall clinical severity and sleep problems in patients with ASD.

Materials and Methods
Patients with ASD were recruited and received FMT. Assessments were conducted at baseline and 3 months post-treatment. Overall clinical status was evaluated using the Clinical Global Impression scale (CGI). Sleep outcomes were measured by the Children's Sleep Habits Questionnaire (CSHQ) and objectively with actigraphy. Parametric and non-parametric analyses of actigraphy-derived sleep and circadian rhythm variables were performed. Changes from baseline to 3 months were analyzed using the Mann–Whitney U test.

Results
A total of 17 patients with ASD were included (mean age 13.64 ± 5.6 years; 82.4% male). At 3 months post-FMT, significant improvements were observed in CGI-S (5.41 ± 0.51 vs. 4.06 ± 0.56, p=0.000). CSHQ showed decreased parasomnias (8.00 ± 1.47 vs. 6.85 ± 0.69, p=0.005) and sleep-disordered breathing (4.08 ± 1.19 vs. 3.46 ± 0.78, p=0.04), but increased daytime sleepiness (10.54 ± 3.55 vs. 12.62 ± 3.23, p=0.017). Actigraphy demonstrated reduced sleep onset latency (20.32 ± 14.66 vs. 15.35 ± 9.47, p=0.037). Non-parametric circadian rhythm variables also showed significantly changes after FMT, including decreased interdaily stability (0.51 ± 0.13 vs. 0.39 ± 0.13, p=0.027) and M10 (317.55 ± 99.18 vs. 263.64 ± 82.62, p=0.025).

Conclusions

FMT may improve overall clinical condition and modulate sleep-related outcomes in children and adolescents with ASD. Significant changes have been found across subjective and objective sleep parameters, and indicate that gut–brain interventions may influence both sleep and circadian rhythms. Studies with larger sample sizes and longer follow-up periods are needed to confirm its efficacy and clarify underlying mechanisms.

Presenting Author
Ya-Chuan Huang (Taiwan)

Authors
Ya-Chuan Huang (Taiwan); Yun-Sen Chang (Taiwan); Chien-Ming Yang (Taiwan)

Presentation Day and Board Number
Friday, April 10, 2026 | P37

Title
Development and Validation of the Pre-Sleep Social Media Use Motivation Scale

Introduction
Previous research has consistently shown that pre-sleep social media use is associated a range of sleep-related problems, including bedtime procrastination, delayed sleep onset, shorter sleep duration, and poorer sleep quality, particularly among adolescents and young adults. Qualitative research further suggests that engagement with social media before bedtime is motivated by multiple psychological processes, including both negative reinforcement through the reduction of perceived costs (e.g., fear of missing out [FoMO] and social pressure of online availability) and positive expectations of perceived benefits (e.g., social connection and staying informed). However, although prior quantitative studies have demonstrated associations between pre-sleep social media use and several psychological factors, these factors have generally been broad in nature and not specific to the pre-sleep context (e.g. FoMO, depression, emotion regulation), or they have not directly targeted motivational aspects underlying social media use (e.g. pre-sleep arousal). Accordingly, the present study aimed to develop and validate a measure, the Pre-Sleep Social Media Use Motivation Scale (PS-SMUMS), designed specifically to assess motivations for social media use before bedtime.

Materials and Methods
The PS-SMUMS consists of six items assessing motivations for social media use prior to bedtime, derived from the themes identified in a previous qualitative study (Scott, Biello & Woods, 2019). Participants were required to rate how frequently each statement applied to them during the past month using a 5-point Likert scale. A total of 212 adolescents participated in the study (52.9% female; mean age = 15.14 years, SD = 1.78; age range = 12–19 years). In addition to the PS-SMUMS, participants completed a set of self-report questionnaires assessing electronic device use and levels of anxiety (Generalized Anxiety Disorder scale; GAD-7) and depression (Kutcher Adolescent Depression Scale; KADS).

Results

Exploratory factor analysis (EFA) using principal axis factoring with oblimin rotation supported a two-factor structure of the PS-SMUMS, representing cost avoidance and benefit expectation motivations for pre-sleep social media use. The two-factor solution accounted for 55.1% of the total variance, with a moderate correlation between the two factors ($r = 0.55$). Internal consistency was satisfactory for the total scale (Chronbach's α coefficient = 0.80) and for both the cost avoidance and benefit expectation subscales (Chronbach's α =0.82 & 0.78, respectively). Pearson's correlation analyses showed that electronic device use ratings were significantly associated with the PS-SMUMS total score ($r = 0.22$, $p = .002$), as well as with the both the cost avoidance ($r = 0.18$, $p = .012$) and benefit expectation ($r = 0.20$, $p = .004$) subscale. Furthermore, the cost avoidance subscale showed moderate correlations with anxiety ($r = 0.32$, $p < .001$) and depression ($r = 0.38$, $p < .001$), whereas the benefit expectation subscale exhibited weaker but significant correlations with anxiety ($r = 0.23$, $p < .001$) and depression ($r = 0.27$, $p < .001$). Together, these findings indicate a clear underlying factor structure, good internal consistency, and satisfactory criteria-related validity of the PS-SMUMS.

Conclusions

The PS-SMUMS demonstrates satisfactory psychometric properties and captures distinct motivational dimensions underlying pre-sleep social media use among adolescents. The findings suggest that the underlying motivations for pre-sleep social media engagement involve not only fear of missing out and social pressure, but also positive expectations related to information seeking and social connection. The PS-SMUMS appears to be a useful tool for assessing multiple motivational perspectives of pre-sleep social media use and may be applied in both research and clinical contexts.

Acknowledgements

This study is supported by the Department of Health, Taipei City Government.

Presenting Author
Yalda Khaje (Canada)

Authors
Yalda Khaje (Canada); Natasha Patel (Canada); Oliviero Bruni (Italy); Silvia Miano (Switzerland); Rosalia Silvestri (Italy); Osman S. Ipsiroglu (Canada)

Presentation Day and Board Number
Saturday, April 11, 2026 | P101

Title
Restlessness Phenotypes in Children with Sleep Disturbances/Disorders and ADHD-Like Behaviours

Introduction
Pediatric sleep disturbances and/or disorders (SDDs) often go undiagnosed despite impacting the development and wellbeing of children and adolescents. Diagnoses for patients in pediatric sleep medicine are often confounded by ambiguous day- and nighttime restlessness presentations. Restlessness at daytime is a core clinical characteristic associated with attention deficit hyperactivity disorder (ADHD), while restlessness at nighttime is associated with sleep-related movement disorders (SRMDs). The challenges in tying day- and nighttime restlessness presentations together motivated us to explore restlessness phenotypes further. Our research question has been: do children and adolescents with ADHD present with SRMDs, and if so, does this change with advancing age?

Materials and Methods
This study is part of the BC Children's Hospital Sleep-Wake Behaviours Clinic quality improvement project, which uses a mobile-friendly electronic intake form to collect qualitative (goals/concerns, patient/caregiver demographics; sleep-wake-behaviours; medications) and quantitative (Sleep Disturbance Scale for Children (SDSC); ADHD Rating Scale-IV) information. An exploratory analysis approach was used to identify clinical day- and nighttime restlessness symptoms across age groups.

Results
Within the ADHD cohort, 64% of all patients scored above the 90th percentile (212/331) in the following age groups: 5-7, 8-10, 11-13, 14-18. 85.3%, 23.6%, 50.5%, and 48.6% of these patients (n=212) scored dark red/red for disorders of initiating/maintaining sleep, arousal disorders, sleep/wake transition disorders, and excessive somnolence, respectively (181/212; 50/212; 107/212, 103/212).

Within the four age-based cohorts, 133/212, 78/212, 37/212, and 43/212 (63%, 37%, 17%, 20%) scored ‘often’ or ‘always’ for the following SRMD-symptoms, respectively: “child shows repetitive actions such as rocking or headbanging while falling asleep”, “startling or jerking part of the body while falling asleep”, “child has frequent twitching/jerking while asleep or kicks off the covers”, and “teeth grinding”. Age group-specific analysis showed mild or moderate decreasing distribution for repetitive actions (69%; 68%; 57%; 58%) and for teeth grinding (31%; 18%; 20%; 16%), respectively; and equal distribution for startling while falling asleep (33%; 42%; 37%; 34%) and for twitching while asleep (18%; 14%; 18%; 19%)."

Conclusions

By collectively examining data collected from the SDSC and the ADHD Rating Scale-IV, we are describing the overlap of day and nighttime restlessness. A high co-occurrence of ADHD-like motor symptoms at nighttime with SDDs suggests that current diagnostic, solely day- and nighttime focused assessment concepts do not capture the continuum, despite significant overlaps. It was most interesting to see that some SRMDs stayed stable across age groups, whereas others showed changes. These changes might be due to multiple factors (maturation, medication effects), which can only be further analyzed with a prospective protocol. At this stage, we conclude that the convergence of restlessness symptoms across day- and nighttime presentations demonstrates a need for an integrated and holistic diagnostic system, which is now offered by the WHO International Classification of Diseases 11th Revision (ICD-11), putting sleep and wake behaviours together in the ICD-11, Chapter 7, Sleep/Wake-Disorders and integrating SRMDs as a core differential diagnostic consideration in the analysis of “nighttime restlessness”.

Acknowledgements

Health Innovation Funding Investment Award(2022), University of British Columbia

Presenting Author
Ying Dai (Hong Kong)

Authors
Ying Dai (Hong Kong)

Presentation Day and Board Number
Saturday, April 11, 2026 | P102

Title
Development and Acceptability of an LLM-Enhanced WeChat Mini-App for Pediatric Sleep Health Promotion

Introduction
Adequate sleep is fundamental to children's physical and cognitive development, yet many children experience suboptimal sleep behaviors. This study developed and evaluated a WeChat mini-app integrating large language model (LLM) technology to deliver personalized sleep health interventions for children aged 3-10 years.

Materials and Methods
The app employed DeepSeek LLM with Retrieval-Augmented Generation (RAG) to analyze sleep diaries and generate evidence-based recommendations. The system architecture featured a multi-stage workflow: user data collection, structured data processing, knowledge base retrieval from sleep medicine literature, dynamic prompt engineering, and LLM-powered generation of personalized sleep tips. A randomized waitlist-controlled trial recruited 79 children aged 3-10 years, randomly assigned to intervention (n=40) or waitlist control (n=39) groups. Intervention participants used the WeChat mini-app to record baseline sleep habits, parental sleep-related behaviors, and daily sleep diaries for one week while reading sleep health articles curated by sleep specialists. After initial assessment, the LLM analyzed diaries and generated individualized sleep recommendations using RAG technology. Families implemented suggestions during week two while continuing diary documentation. Waitlist control participants reported baseline sleep assessments and daily sleep diaries through REDCap without receiving educational articles or personalized recommendations. One-month follow-up assessments were conducted for both groups. The randomized controlled trial remains ongoing.

Results
Baseline characteristics showed no significant differences between groups ($p>0.05$). Among all participants, 35% (n=28) of children slept fewer hours than age-appropriate

recommendations (mean sleep duration: 8.7±0.9 hours vs. recommended 9-12 hours for ages 6-12). Suboptimal sleep behaviors were prevalent, with 67% (n=53) exhibiting problematic patterns including pre-bedtime screen exposure (mean: 42±18 minutes) and excessive extracurricular activities (≥3 activities per week: 48%, n=38) that delayed bedtimes beyond 10 PM. During week two, the intervention group demonstrated significant reductions in pre-bedtime screen time (36±15 minutes vs. 42±18 minutes at baseline, p=0.03), representing a mean decrease of 6 minutes. Parents in the intervention group reported improved bedtime management confidence scores (7.2±1.4 vs. 5.8±1.6 at baseline on a 10-point scale, p

Conclusions

This ongoing randomized controlled trial demonstrates feasibility of integrating LLM technology with RAG techniques to deliver personalized pediatric sleep interventions through accessible mobile platforms. Preliminary results show short-term behavioral improvements and high user acceptability, though sustained behavior change requires investigation as the trial continues.

Acknowledgements

This work was supported by the National Natural Science Foundation of China (Grant No. 72404063), Guangzhou Municipal Science and Technology Bureau (Grant No. 2025A04J4518), Foundation of Nursing Key Laboratory of Sichuan Province (Grant No. HLKF2024(Y)-2), and Guangzhou Women and Children's Medical Center (Grant No. 2024BS021). We would like to thank all the participating parents and their children.

Presenting Author
Yong WEI (Hong Kong)

Authors
Yong WEI (Hong Kong); Hoi Lok Lam (Hong Kong); Alvin Tsz Hei Su (Hong Kong); Sijing Chen (Hong Kong); Shirley Xin Li (Hong Kong); Joey Wing Yan Chan (Hong Kong); Kate Ching Ching Chan (Hong Kong); Tim Man Ho Li (Hong Kong); Albert Martin Li (Hong Kong); Yun Kwok Wing (Hong Kong); Ngan Yin Chan (Hong Kong)

Presentation Day and Board Number
Saturday, April 11, 2026 | P103

Title
Effect of a Smartphone-based, Mood-enhanced Cognitive Behavioral Therapy for Insomnia in Adolescents at Risk of Depression: A Cluster Randomized Trial

Introduction
Adolescents with comorbid insomnia and depressive symptoms are at elevated risk for adverse health outcomes and often prove difficult to treat. While CBT-I is effective, our group has previously found that CBT for depression outperforms CBT-I in improving self-reported depressive symptoms. However, dual treatments are burdensome, costly, and less feasible in clinical practice. To enhance feasibility and accessibility, the adaptation of digital CBT-I with mood-enhanced behavioral components might be one of the potential approaches to address comorbid insomnia and depression concurrently under the same treatment package. The purpose of the study was to compare the efficacy of digitally delivered, mood-enhanced cognitive behavioral therapy for insomnia (M-dCBT-I) and digital cognitive behavioral therapy for insomnia (dCBT-I) in improving depressive symptoms in adolescents.

Materials and Methods
This was a cluster-randomized, assessor-blind, parallel trial. Adolescents who reported insomnia (Insomnia Severity Index [ISI] ≥ 9) and depressive symptoms (Patient Health Questionnaire-9 [PHQ-9] ≥ 10) were randomly assigned to either the 8-week M-dCBT-I group or the 8-week dCBT-I group. The M-dCBT-I treatment integrated core CBT-I with mood-related components such as behavioral activation and problem-solving modules. Assessments with clinical interviews and self-report questionnaires were conducted at baseline and post-treatment. The primary outcomes were clinician-rated (Hamilton Depression Rating Scale [HAMD]) and self-reported (PHQ-9) depressive symptoms. Treatment effects were analyzed using linear mixed models.

Results

A total of 343 adolescents were allocated to either the M-dCBT-I group (n=171, mean age=16.2 ± 1.7 years, female: 73.7%) or the dCBT-I group (n=172, mean age=16.0 ± 1.6 years, female: 76.2%). After treatments, both groups demonstrated significant improvements in clinician-rated and self-reported depressive outcomes as well as insomnia symptoms (ps 0.05). HAMD scores reduced from 12.2 ± 6.0 to 4.3 ± 4.5 in the dCBT-I group and from 11.5 ± 5.9 to 4.3 ± 4.6 in the M-dCBT-I group. Similarly, PHQ-9 decreased from 13.7 ± 3.8 to 7.7 ± 5.1 (dCBT-I) and from 13.4 ± 3.9 to 7.4 ± 4.2 (M-dCBT-I), while ISI reduced from 14.3 ± 3.8 to 7.7 ± 5.0 and from 14.2 ± 3.7 to 7.0 ± 4.0, respectively. Improvements were also observed in secondary outcomes, including anxiety, stress-related insomnia vulnerability, sleep-related dysfunctional beliefs, daytime sleepiness, cognitive arousal, and sleep hygiene in both groups (all ps

Conclusions

Both digitally delivered interventions were effective in reducing insomnia and depressive symptoms in high-risk adolescents. However, the additional mood component did not produce significant enhanced effects on mood outcomes. The study is ongoing, and future analyses will explore the long-term impacts of the two interventions.

Acknowledgements

This work was supported by the Hong Kong Health and Medical Research Fund (20210551).

Trial registration: ClinicalTrials.Gov (NCT06358898)."

Presenting Author
Yu Takenouchi (Japan)

Authors
Yu Takenouchi (Japan); Jun Hosomichi (Japan); Naoyuki Miyasaka (Japan); Chikako Morioka (Japan); Manabu Sugie (Japan); Jun Aida (Japan); Meiyo Tamaoka (Japan); Yasunari Miyazaki (Japan); Takashi Ono (Japan)

Presentation Day and Board Number
Saturday, April 11, 2026 | P104

Title
Maternal Sleep-Disordered Breathing During Pregnancy and Its Association With Domain-Specific Development in Three-Year-Old Children

Introduction
Maternal obstructive sleep apnea (OSA) during pregnancy may reduce maternal oxygenation, induce sleep fragmentation, and influence fetal neurodevelopment. Within the Developmental Origins of Health and Disease (DOHaD) framework, sleep-disordered breathing has emerged as a potentially modifiable prenatal factor. However, evidence regarding domain-specific neurodevelopmental outcomes in early childhood—particularly within Asian populations—remains limited. This exploratory prospective cohort study investigated associations between maternal OSA during pregnancy and developmental outcomes in children at 3 years of age using examiner-administered assessments.

Materials and Methods
Pregnant women who underwent home sleep apnea testing (HSAT; WatchPAT) at 28–32 weeks of gestation between June 2021 and July 2025 were enrolled. OSA was defined as an apnea–hypopnea index (AHI) ≥5. Mothers and children were prospectively followed until the child reached 3 years of age. Physical growth (height, weight, head circumference) and dental occlusion were assessed during the 3-year health checkup. A licensed psychologist blinded to maternal OSA status administered the New K-Type Developmental Test, yielding posture/motor, cognitive/adaptive, language/social, and total developmental indices (DQ; mean 100, SD 15). Correlation and regression analyses explored associations between maternal pAHI and developmental indices. Analyses were descriptive given the pilot design and small number of OSA cases. A sensitivity analysis excluding one extreme outlier (pAHI = 69.3) was conducted.

Results

Thirty-four mother–child pairs completed the 3-year follow-up, including six mothers with OSA (five mild, one severe). No significant differences were observed between OSA and non-OSA groups in height, weight, head circumference, or occlusal status. Maternal pAHI showed moderate negative correlations with the total developmental index ($r = -0.55$, $p < 0.01$), cognitive/adaptive ($r = -0.59$, $p < 0.01$), and language/social domains ($r = -0.54$, $p < 0.01$), but not the motor domain. One child born to a mother with severe OSA (pAHI = 69.3) exhibited markedly reduced cognitive (DQ 35) and language/social (DQ 31) scores, strongly influencing the overall pattern. In multivariate models including this case, maternal pAHI remained significantly associated with cognitive and language outcomes. However, after excluding the outlier, no significant associations remained, suggesting that observed trends may reflect threshold effects rather than linear relationships.

Conclusions

Maternal OSA during pregnancy may be associated with lower cognitive and language development at 3 years of age, whereas physical growth and occlusal status appear unaffected. Observed associations were substantially influenced by a single severe OSA case, indicating that developmental differences may emerge only beyond a certain severity threshold. These findings are exploratory and highlight the need for larger, multi-center studies with greater numbers of moderate-to-severe OSA cases and inclusion of biomarkers to determine causality and clinical significance.

Acknowledgements

This work was supported in part by Grants-in-Aid for Scientific Research (Grant Numbers 20H03895, 23K27801, and 23K09409) from the Japanese Ministry of Education, Culture, Sports, Science, and Technology.

Presenting Author
Yu-Ching Wang (Taiwan)

Authors
Yu-Ching Wang (Taiwan); Yu-Shu Huang (Taiwan); Wei-Chih Chin (Taiwan)

Presentation Day and Board Number
Saturday, April 11, 2026 | P105

Title
Associations between Sleep, Circadian Rhythm and Autistic symptoms in Children and Adolescents

Introduction
Sleep problems are highly prevalent in individuals with autism spectrum disorder (ASD) and are known to exacerbate behavioral problems. This study focuses on examining the associations between objectively measured sleep parameters, circadian rhythm characteristics, and clinical symptom severity in children and adolescents with ASD.

Materials and Methods
This study included children and adolescents with ASD aged 6–18 years. Objective sleep parameters were obtained using in-laboratory polysomnography (PSG) and actigraphy. Core ASD symptoms were assessed using the Social Responsiveness Scale (SRS). Actigraphy-derived nonparametric circadian rhythm variables were calculated using MATLAB. Statistical analyses were performed using SPSS version 22.0. Pearson's correlation analyses were conducted to explore relationships between sleep, circadian rhythm metrics, and core ASD symptom scores within each age group.

Results
Eighty-three children and adolescents with ASD were included, of whom 69.9% were male; the mean age was 12.87 ± 3.58 years. Children revealed significantly worse social awareness ($p = 0.009$) than adolescents in SRS. In the children group, the PSG desaturation index was significantly correlated with Social Awareness (SA; $r = 0.585$, $p = 0.011$) and Social Cognition (Scog; $r = 0.501$, $p = 0.034$) on the SRS-2. M10 activity counts were negatively correlated with Social Motivation (SM; $r = -0.528$, $p = 0.036$). In the adolescent group, SOL was positively correlated with the SRS-2 total score ($r = 0.526$, $p = 0.004$), Social Cognition ($r = 0.573$, $p = 0.001$), Social Communication (Scom; $r = 0.492$, $p = 0.008$), and Autistic Mannerisms (AM; $r = 0.611$, $p = 0.001$). The L5 midpoint was significantly correlated with the SRS-2 total score ($r = 0.442$, $p = 0.021$), Social Motivation ($r = 0.466$, $p = 0.014$), and Autistic Mannerisms ($r = 0.470$, p

= 0.013). In addition, sleep efficiency was negatively correlated with Autistic Mannerisms (r = −0.436, p = 0.020), and interdaily stability was positively correlated with Social Awareness (r = 0.385, p = 0.047).

Conclusions

Our findings demonstrate age-specific associations between objectively measured sleep parameters and autism symptom in children and adolescents with ASD. Disrupted circadian rhythm and impaired nocturnal oxygenation were associated with greater social impairment and more severe autistic mannerisms. These results underscore the importance of evaluating and monitoring sleep and circadian rhythms in children and adolescents with ASD.

Presenting Author
Yukie ARAHATA (Japan)

Authors
Yukie ARAHATA (Japan); Eri SHIMIZU (Japan); Shinichi WADA (Japan); Takenao MIHARA (Japan); Naoko TACHIBANA (Japan)

Presentation Day and Board Number
Saturday, April 11, 2026 | P106

Title
Diagnostic delay in pediatric narcolepsy Is primarily driven by delayed first medical consultation

Introduction
Narcolepsy type 1 (NT1) is a central disorder of hypersomnolence with the common onset in childhood or adolescence. Although NT1 is characterized by cataplexy as a pathognomonic symptom, long diagnostic delay has been consistently reported across countries. While previous studies, mainly from Europe, have described diagnostic delay in NT1, it remains unclear what contributes to this delay in their journey to reach correct diagnosis, particularly in patients with childhood-onset. Japan provides a unique healthcare context with universal health insurance and unrestricted access to medical care, theoretically allowing early consultation once symptoms are recognized. Under these conditions, examining the diagnostic pathway may help clarify whether diagnostic delay primarily arises before or after initial medical contact.

Materials and Methods
This retrospective observational study included consecutive patients with NT1 who developed cataplexy before 18 years of age and were diagnosed between April 2006 and March 2025 at a hospital-based sleep clinic in Japan. Diagnoses were established according to the International Classification of Sleep Disorders, Third Edition (ICSD-3), based on overnight polysomnography and multiple sleep latency testing. Clinical records were reviewed to collect demographic and clinical information, initial symptom presentation, and details of the diagnostic process. The diagnostic pathway was divided into three intervals: (1) symptom onset to first medical consultation, (2) first medical consultation to definitive diagnosis, and (3) symptom onset to definitive diagnosis (total diagnostic delay). Initial symptoms were categorized into four symptom-onset patterns: excessive daytime sleepiness (EDS)-first, cataplexy-first, simultaneous onset of EDS and cataplexy, and hypnagogic hallucinations or sleep paralysis.

Results

A total of 23 patients were included. The median age at symptom onset was 12 years, and the median age at diagnosis was 21 years, with a median diagnostic delay of 11 years. Simultaneous onset of EDS and cataplexy was the most frequent initial presentation. Across the entire cohort, the largest proportion of diagnostic delay occurred during the interval from symptom onset to first medical consultation, whereas the interval from first consultation to definitive diagnosis was comparatively short. This pattern was consistently observed across all symptom-onset groups, including patients with cataplexy at onset. When diagnostic delay occurred after initial medical contact, the primary reasons were misdiagnosis (e.g., epilepsy) or under-recognition of symptoms; however, post-consultation delay accounted for a smaller proportion of the total diagnostic delay.

Conclusions

Substantial diagnostic delay persists in pediatric-onset NT1 despite unrestricted access to medical care. In this cohort, delayed first medical consultation was the principal contributor to diagnostic delay, whereas delays after presentation played a secondary role. These findings suggest that the presence of cataplexy alone does not necessarily facilitate early diagnosis in children and adolescents. Efforts to reduce diagnostic delay should prioritize improving early recognition of pathological sleepiness and cataplexy and promoting timely medical consultation rather than focusing solely on post-presentation diagnostic processes.

Presenting Author
Yun Kwok Wing (Hong Kong)

Authors
Yun Kwok Wing (Hong Kong); Si-Jing Chen (Hong Kong); Danny J. Yu (Hong Kong); Shirley Xin Li (Hong Kong); Jihui Zhang (China); Siu Ping Lam (Hong Kong); Albert Martin Li (Hong Kong); Charles M Morin (Canada); Ngan Yin Chan (Hong Kong)

Presentation Day and Board Number
Saturday, April 11, 2026 | P107

Title
Long-term efficacy of an insomnia prevention program in at-risk adolescents: 36-month follow-up

Introduction
Our previous study has shown that a brief cognitive-behavioral prevention insomnia program is effective in preventing the future onset of insomnia in at-risk adolescents up to 12 months period. However, the sustainability of intervention effect remains unclear. This study aimed to evaluate the long-term efficacy of the insomnia prevention program in reducing insomnia incidence and symptoms in at-risk adolescents.

Materials and Methods
This was a randomized controlled trial comparing insomnia prevention program with a non-active control group. Subjects were assessed at baseline, post-intervention, 6-, 12-, 18-, 24- and 36-month after the intervention. The current study extended the follow-up data to include the 36-month period. The data was analyzed according to the intention-to-treat principles. This trial was registered with the Chinese Clinical Trial Registry (ChiCTR-IPC-15005966).

Results
A total of 242 adolescents with family history of insomnia and subthreshold insomnia symptoms (137 females [56.6%]; mean [SD] age, 14.9 [1.8] years) were randomly assigned to the intervention group (n=121) or control group (n=121). The cumulative incidence of insomnia disorder (including both acute and chronic insomnia) over the 36-month follow-up for the intervention group was significantly lower than that of the control group (12% vs. 28%; p=0.001). The hazard ratio for insomnia was 0.38 (95% CI, 0.20 to 0.70; p=0.002) favouring intervention condition. The relative risk reduction of the intervention was 55% (95% CI, 48% to 61%), with a number needed to treat of 5.7 (95% CI, 3.4 to 16.5). The beneficial effect of the

prevention program of insomnia was sustained at 36-month follow-up (Insomnia Severity Index, group-by-time interaction, p=0.03; between-group Cohen's d=0.39 at 36 months). Improvements in secondary outcomes, including vulnerability to stress-related insomnia (d=0.31; p=0.02), daytime sleepiness (d=0.25; p=0.04), and fatigue symptoms (d=0.36; p=0.049) observed in the intervention group within the first 12-month follow-up were maintained until 18 months. The reduced depressive symptom severity reported by the intervention group at 12 months were observed at 36 months (d=0.38; p=0.03).

Conclusion

The beneficial effects of the insomnia prevention program in preventing incident insomnia disorder and reducing subthreshold insomnia symptoms were sustained over the 36-month follow-up in at-risk adolescents. The findings highlight the importance of implementing indicated prevention programs for insomnia in high-risk adolescents to improve insomnia outcomes and its associated burden.

Acknowledgements

Research Grants Council (reference 14116214), Hong Kong Special Administrative Region, China.

Presenting Author
Yu-Shu Huang (Taiwan)

Authors
Yu-Shu Huang (Taiwan); Yu-Ching Wang (Taiwan); Wei-Chih Chin (Taiwan)

Presentation Day and Board Number
Friday, April 10, 2026 | P110

Title
Differences in Sleep and Circadian Rhythms Profiles Between Children and Adolescents with Autism Spectrum Disorder: A Cross-sectional Study

Introduction
Autism spectrum disorder (ASD) is frequently accompanied by a range of psychological and physical comorbidities, with approximately 50–80% of individuals with ASD experiencing sleep disturbances. Previous studies have mostly relied on parent-reported questionnaires to assess sleep of children and adolescents with ASD. In this study, we aim to investigate sleep and circadian rhythms between children and adolescents with ASD using objective assessments including actigraphy and in-laboratory polysomnography (PSG).

Materials and Methods
Children and adolescents with ASD aged 6–18 years were recruited. Sleep was evaluated using in-laboratory PSG and actigraphy, complemented by subjective evaluation with the Children's Sleep Habits Questionnaire (CSHQ). Besides parametric sleep variables, circadian rhythm metrics derived from actigraphy were analyzed by nonparametric methods. Independent sample t-test and chi-square test were used to evaluate group differences between children and adolescents for continuous and categorical variables respectively.

Results
A total of 83 participants were recruited (mean age 12.87 ± 3.58 years; 69.9% male), including 31 children (mean age 8.94 ± 1.78 years; 64.5% male) and 52 adolescents (mean age 15.21 ± 1.93 years; 71.7% male). PSG revealed that adolescents with ASD had significantly higher hypopnea index (HI)($p = 0.047$), lower sleep efficiency ($p = 0.006$), more awake ($p = 0.014$), less stage 3 sleep ($p = 0.004$), shorter total sleep time ($p = 0.032$), higher snore index ($p = 0.036$), lower mean oxygen saturation ($p = 0.030$), and more wake after sleep onset (WASO)($p = 0.016$) compared with children with ASD. Actigraphy demonstrated that adolescents had significantly longer sleep onset latency (SOL)($p = 0.035$), lower interdaily stability (IS)($p < 0.001$), higher intradaily variability (IV)($p = 0.029$), lower relative amplitude (RA)($p = 0.007$), and

lower average activity counts of most active 10 consecutive hours (M10)($p < 0.001$) than children. CSHQ showed significantly higher bedtime resistance ($p = 0.004$), sleep anxiety ($p = 0.006$), night wakings ($p = 0.003$), and parasomnias ($p = 0.034$) in CSHQ in children compared with adolescents.

Conclusions

Our findings from objective sleep assessments are consistent with previous observations in typically developing children and adolescents, indicating that adolescents with ASD may experience more sleep-disordered breathing and greater circadian rhythm disruption than children with ASD, necessitating routine assessment and treatment.

Presenting Author
Yu-Shu Huang (Taiwan)

Authors
An-Yun Lee (Taiwan); Li-Chuan Chuang (Taiwan); Yu-Shu Huang (Taiwan)

Presentation Day and Board Number
Saturday, April 11, 2026 | P108

Title
Correlation of Lingual Frenum and Craniofacial Morphology in Patient with Pediatric Obstructive Sleep Apnea Syndrome

Introduction
Pediatric obstructive sleep apnea (POSA) affects about 3% of school-age children and is characterized by upper airway obstruction. Unlike adults, pediatric patients often present with neurocognitive and behavioral disorders rather than daytime sleepiness. While craniofacial and oral anomalies are known to contribute to its multifactorial etiology, comprehensive data correlating tongue morphology and craniofacial features with POSA severity remain limited. This study investigates the morphological characteristics of the tongue and craniofacial structures in children with POSA. It aims to elucidate contributing factors to airway obstruction and explore correlations between specific craniofacial characteristic, tongue morphology, and severity of POSA.

Materials and Methods
This cross-sectional study enrolled children aged 6–14 with POSA, excluding those with obesity, prior frenectomy, or systemic diseases. Subjects were grouped by Kotlow's "free tongue" length: Study (≤16 mm) and Control (>16 mm). Assessments included Polysomnography (PSG) for OSA severity, lingual morphology (Kotlow's measurement and tongue range of motion ratio[TRMR]), maxillary arch dimensions, and lateral cephalometric skeletal analysis. Statistical analyses were performed using IBM SPSS v.27.0, with significance set at $p<0.05$. Continuous variables (Mean±SD) were compared using Mann–Whitney U tests. ANCOVA was employed to assess morphological differences while controlling for craniofacial growth as a confounder. Multiple linear regression was used to evaluate independent predictive power.

Results
A total of 50 children were evaluated, with the study group (n=22) being significantly younger than the control group (n=28). No significant differences were found in gender, BMI, or AHI

between groups. After adjusting for age via ANCOVA, the study group exhibited significantly restricted tongue mobility, characterized by lower MOTTIP and TRMR ($p<0.05$). Regarding morphological differences, the study group showed a significantly higher palatal vault ($p=0.001$). Cephalometric analysis revealed that children with shorter free tongue length had a significantly larger ANB angle, longer maxillary length (Co-A), increased overjet, and elongated soft palate (LSP) ($p<0.05$). Spearman's correlation further confirmed that Kotlow's free tongue length was negatively associated with palatal height, ANB, Co-A, overjet, and LSP. Finally, multiple linear regression analysis demonstrated that a shorter free tongue length is an independent predictor of a larger ANB angle ($\beta=-0.406$, $p=0.004$), longer soft palate ($\beta=-0.370$, $p=0.010$), and longer maxilla ($\beta=-0.370$, $p=0.014$), even after controlling for age and birth history.

Conclusions

This study demonstrates that while free tongue length does not directly correlate with AHI severity in pediatric OSA patients, it is a significant independent predictor of craniofacial dysmorphology. A shorter free tongue is associated with a larger ANB angle, increased maxillary length, elongated soft palate, and higher palatal vault. These anatomical variations contribute to increased airway collapsibility. Consequently, early screening of the lingual frenum is essential for identifying children at risk for craniofacial disharmony, enabling timely multidisciplinary intervention to the management of POSA.

Presenting Author
Zara Howarth (United Kingdom)

Authors
Zara Howarth (United Kingdom); Imogen Joseph (United Kingdom)

Presentation Day and Board Number
Saturday, April 11, 2026 | P109

Title
Investigating Sleep State-Dependent Oxygen Dynamics in Moderate-Late Preterm Infants.

Introduction
Moderate-to-late preterm (MLPT; 32–36 weeks GA) infants are at increased risk of neurodevelopmental impairment, particularly in language, motor, and cognitive domains. Mechanistically, MLPT infants have immature lungs, predisposing them to hypoventilation, upper airway obstruction, an elevated loop gain ventilatory control system, and an increased relative proportion of fetal haemoglobin. This results in a greater disparity between inspired and arterial oxygen, compared to other children. Neonatal respiratory instability varies between active sleep (AS); more frequently associated with irregular and periodic breathing resulting in desaturation clusters (Intermittent hypoxia), compared to quiet sleep (QS). AS is critical for synaptogenesis and neural circuit refinement, it developmentally makes up 50% of infant sleep time, so any increased susceptibility has the potential to have profound effects.

Materials and Methods
This study examined sleep state differences in peripheral and cerebral oxygenation in otherwise healthy infants born after 32 weeks gestation. Data was monitored at postnatal ages 7+/-3, 14+/-3, 21-+/-3, 28+/-3 and 35+/-3 days using combined nocturnal pulse oximetry (NPO) (Masimo, USA. Visilab software, Stowood scientific). NPO markers included oxygen desaturation indices (ODI3/4), mean SpO_2 and delta index (oxygen saturation variability). Cerebral oxygenation was estimated using Near Infrared Spectroscopy (NIRS) (Masimo) recordings of mean, minimum and maximum cerebral regional oxygen saturation (rSO_2), and mean baseline deviations. Using R studio, bidirectional regression models examined NPO-NIRS relationships and a Wilcoxon-signed rank for sleep state differences.

Results
Between 2021 and 2024, NPO and NIRS recordings were analysed in 6 infants born with a median corrected gestation age (CGA) of 35+4.5 weeks (IQR= 36+6 - 34+5 weeks). In total, 36

data points for AS and QS were used from data monitored at a median postnatal age of 13 days old (IQR =20 - 9 days) and at a median CGA of 38 + 3.5 days (IQR=40+3 - 37+1 weeks).

Boxplot analysis showed AS had a greater change from baseline (lower) and greater variation (median -19, IQR of -14 to -23), than QS (-12, IQR of -10 to -18). ODI3 was greater during AS (median 75.9, IQR=100.64 - 48.29), than QS (25.45, IQR= 65.63 - 18.19) (significant at $p<0.00019$). Additionally, rSO2 was lower during AS (median 65, IQR= 68.25 - 61.75), than QS (67.5, IQR= 69.5 - 63) (significant at $p <0.0008$). Regression models demonstrated significant predictive capacity of NPO for NIRS outcomes: desaturation frequency (ODI3/4) was negatively associated with mean change from baseline rSO_2 ($p<0.008$). The largest effect estimates were delta index (12s) with lowest change from baseline ($p<0.001$) and mean SpO_2 with lowest change from baseline ($P<0.013$). Similar findings were obtained with the reversed model.

Conclusions

Greater peripheral and cerebral oxygen instability was observed during AS compared to QS, with a lower rSO_2, more frequent desaturations, and increased variability. Our findings show that clusters of IH during AS are associated with changes in cerebral perfusion. This may cumulatively affect neural maturation and synaptogenesis possibly contributing to adverse neurodevelopment in MLPT infants. Further research is required on the relationship between IH, its impact on cerebral oxygenation and the medium to long term consequences on the developing brain.

Acknowledgements

I would like to thank Imogen Joseph as co-first author (we are currently submitting this research as an open access paper to the BMJ), Thomas Wilkinson, Bethany McDermott, Jemima Clarke and Jonathan James for the collection of the data. Dr Elinor Curnow was the statistician involved in the results and analysis of the study and Dr Hazel Evans as principal Investigator and my supervisor.