SINGAPORE SLEEP REVIEW

SINGAPORE SLEEP SOCIETY NEWSLETTER

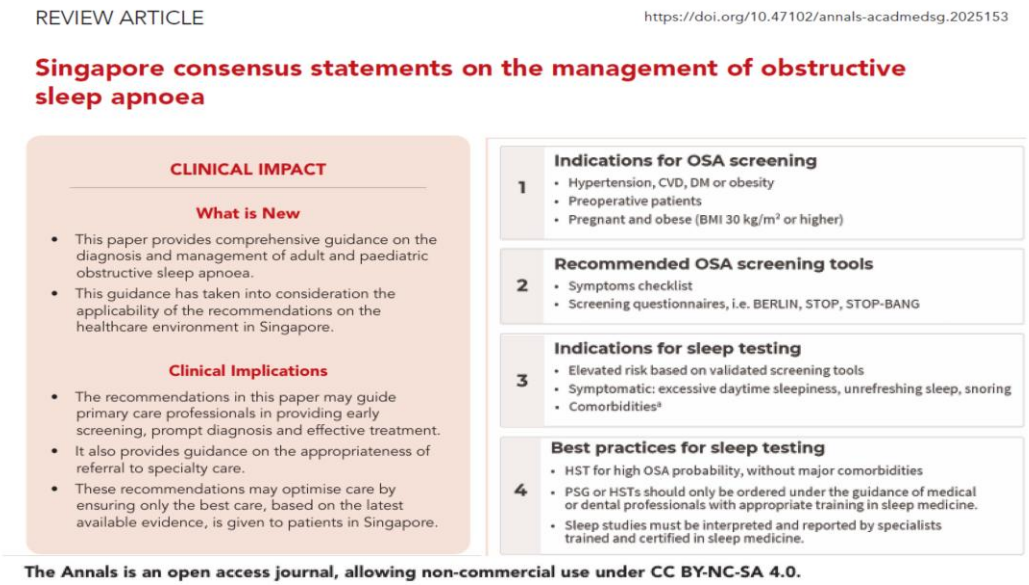
VOLUME 3 | ISSUE 4 | NOV | 2025

Singapore Sleep Society

SSS NEWS

With this November issue of the Singapore Sleep Review we are approaching the end of what has been an amazingly exciting year. Much of 2025 has been dedicated to the World Sleep Congress in September. With over 4000 attendees hailing from more than 80 countries, this has truly been a world-class event. In another landmark effort, the SSS and the AMS Chapter of Sleep Medicine Physicians have published the Singapore consensus statements on the management of obstructive sleep apnoea.

Moving forward, we are excited to see what 2026 will have in store for the sleep community in Singapore. Starting from next month, we will launch a podcast series, 'Night Mode On', in collaboration with The Air Station. This podcast is aimed at bringing relatable sleep health information to the public. Furthermore, we are happy to keep bringing the latest sleep research through this newsletter. In this issue, we will cover research on sleep health from childhood to university students.



REVIEW ARTICLE

https://doi.org/10.47102/annals-acadmedsg.2025153

Singapore consensus statements on the management of obstructive sleep apnoea

CLINICAL IMPACT

What is New

- This paper provides comprehensive guidance on the diagnosis and management of adult and paediatric obstructive sleep apnoea.
- This guidance has taken into consideration the applicability of the recommendations on the healthcare environment in Singapore.

Clinical Implications

- The recommendations in this paper may guide primary care professionals in providing early screening, prompt diagnosis and effective treatment.
- It also provides guidance on the appropriateness of referral to specialty care.
- These recommendations may optimise care by ensuring only the best care, based on the latest available evidence, is given to patients in Singapore.

1 **Indications for OSA screening**
- Hypertension, CVD, DM or obesity
- Preoperative patients
- Pregnant and obese (BMI 30 kg/m² or higher)

2 **Recommended OSA screening tools**
- Symptoms checklist
- Screening questionnaires, i.e. BERLIN, STOP, STOP-BANG

3 **Indications for sleep testing**
- Elevated risk based on validated screening tools
- Symptomatic: excessive daytime sleepiness, unrefreshing sleep, snoring
- Comorbidities[a]

4 **Best practices for sleep testing**
- HST for high OSA probability, without major comorbidities
- PSG or HSTs should only be ordered under the guidance of medical or dental professionals with appropriate training in sleep medicine.
- Sleep studies must be interpreted and reported by specialists trained and certified in sleep medicine.

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Sleep and Childhood Obesity

Reference: Tang et al. (2025). Meeting Sleep Duration Recommendations is Associated With Lower Abdominal Adipose Tissue in 10-Year-Old Boys. Obesity (Silver Spring). 2025 Dec;33(12):2345-2354. https://doi.org/10.1002/oby.70026

Childhood obesity carries wide-ranging developmental, psychosocial, and cardiometabolic risks, and short sleep has emerged as a modifiable contributor. This study from the GUSTO birth cohort in Singapore examined whether meeting National Sleep Foundation recommendations (≥9 h/day at age 10) is associated with adiposity and inflammation, with a focus on sex differences and weekday versus weekend sleep sufficiency.

At the year-10 assessment, 638 children (mean age 10.2 years; 51% boys) provided caregiver-reported sleep; actigraphy was obtained over seven days. Subsamples underwent EchoMRI for total fat mass (n=528), abdominal MRI for deep and superficial subcutaneous adipose tissue (DSAT, SSAT) and visceral adipose tissue (VAT) (n=377), and fasting blood for GlycA (n=436). Both sexes showed weekend catch-up sleep. Actigraphy-derived sleep was shorter than caregiver reports, consistent with overestimation.

Among boys, meeting sleep recommendations (caregiver-reported, weekdays and weekends) was associated with lower obesity risk (BMI z-score ≥2; OR=0.49, p=0.015), lower continuous BMI z-score, less total fat mass, and smaller DSAT, SSAT, and VAT volumes. Inflammation was lower (GlycA). Actigraphy findings were directionally similar but with fewer significant associations; VAT and DSAT were reduced. Sensitivity analyses adjusting for maternal BMI, physical activity, and pubertal status generally preserved associations in boys, particularly for VAT and DSAT.

In girls, associations were largely null across adiposity compartments and GlycA, with only a marginal reduction in SSAT for caregiver-reported sufficiency and a non-significant trend to lower obesity risk with actigraphy in sensitivity models. Weekday/weekend analyses showed that boys who met recommendations on both weekdays and weekends had lower obesity risk, lower BMI z-score, smaller DSAT, VAT, and a trend for SSAT, alongside lower GlycA, compared to those not meeting recommendations.

Meeting recommendations on weekdays only or weekends only did not confer benefits. Given average weekday sleep around 8.6 h, weekend catch-up alone did not mitigate adiposity. These findings suggest that ensuring adequate sleep across the entire week is associated with lower abdominal adiposity and inflammation in boys at age 10, whereas weekend-only catch-up sleep is insufficient. Sex-specific mechanisms warrant further investigation to inform sleep-focused obesity prevention in children.

Adolescent Sleep Patterns in Post-Secondary Education

Adequate sleep is essential for adolescent health and cognitive functioning, yet insufficient sleep is common in this age group due to circadian phase delay and social constraints. This large cross-sectional study assessed sleep timing, school-day sleep duration, chronotype, social jetlag, and school arrival time across three post-secondary systems in Singapore—junior colleges (JC), polytechnics, and Institutes of Technical Education (ITE)—and by sex.

A total of 2,732 adolescents (mean age 17.7 years; 1,469 females) completed the Munich Chronotype Questionnaire (MCTQ) and reported school timing variables. The study computed the sleep-corrected mid-sleep on free days (MSFsc; chronotype) and social jetlag (difference in mid-sleep between free and school days). Group schedules differed: JC and ITE operate fixed morning starts (≈8:00–9:00), while polytechnics have flexible timetables.

Sleep timing varied systematically by educational pathway. On school days, JC students went to bed and woke earliest; polytechnic students slept latest. School-day sleep duration was shortest in JC (mean 5:51 h), longer in polytechnic (6:07 h) and ITE (6:09 h). On school-free days, all groups slept about 8 hours, with later bed and rise times, consistent with circadian delay. Chronotype (MSFsc) was earliest in JC (4:40 h) and later in polytechnic (5:53 h) and ITE (5:59 h). Social jetlag exceeded two hours across groups, highest in ITE (2:53 h). Average school arrival times reflected institutional schedules: JC 7:45, ITE 9:09, polytechnic 9:23.

School-day sleep duration was negatively correlated with both MSFsc and social jetlag in all groups, indicating that later chronotypes and greater misalignment are associated with less sleep on school days. Arrival time correlated positively with sleep duration in polytechnic and ITE (but not JC), suggesting that later arrival enables longer sleep when schedules allow flexibility. In multivariable models, predictors differed by pathway: JC sleep was reduced by later chronotype; polytechnic sleep increased with later arrival and decreased with social jetlag; ITE sleep decreased with social jetlag. Sex effects were small; females tended to have later sleep onset and rise times, with group-specific nuances.

These findings underscore pervasive sleep insufficiency in Singapore's older adolescents (~6 h on school days; ~8 h on free days; most below the 8–10 h recommendation) and highlight the influence of institutional schedules and circadian chronotype. Interventions targeting schedule alignment—particularly later arrival times where feasible—and reducing social jetlag may be impactful, especially in flexible systems.

Limitations include self-reported measures, cross-sectional design, COVID-19 period context, and unmeasured factors (homework, device use, mental health, commute). Further longitudinal and objective sleep assessments are warranted.

Reference: Wang CKJ, Teo WP, Gooley JJ, Chian LK, Burns SF, Mukherjee S, Chung HJ, Sumarta TT. Adolescents' sleep patterns, chronotype, social jetlag, school arrival time and sleep duration: Comparisons of three post-secondary education systems in Singapore. Acta Psychol (Amst). 2025 Oct;260:105711. https://doi.org/10.1016/j.actpsy.2025.105711

Sleep Health in University Students

Reference: Yeh, et al. (2025). Sleep health and occupational balance in university students in Singapore. British Journal of Occupational Therapy. 2025;88(8):487-497. https://doi.org/10.1177/03080226251330754

University students commonly report inadequate and poor-quality sleep, with downstream effects on cognition and well-being. This mixed-methods study at the Singapore Institute of Technology examined sleep health among undergraduates, integrating an online survey (n=147) with 11 focus groups (n=36) from Health and Social Sciences (HSS) and Engineering (ENG) clusters.

Participants completed the Pittsburgh Sleep Quality Index (PSQI) and the Depression, Anxiety and Stress Scale (DASS-21). Average reported sleep duration was 6.4 hours/night (SD=1.4), below adult recommendations. Females slept longer than males (6.6 vs 6.1 hours; p=0.014), and HSS students slept longer than ENG students (6.7 vs 6.0 hours; p=0.001). Despite 73.5% rating their sleep as "fairly/very good," the mean PSQI global score was 6.8 (SD=3.0), exceeding the threshold (>5) for poor sleep quality—indicating a notable perception–objective mismatch. Daytime dysfunction was common: 78.9% reported trouble maintaining enthusiasm and 52.4% struggled to stay awake during daily activities at least once in the past month.

Emotional distress correlated with sleep problems. The DASS-21 indicated, on average, mild depression and anxiety and normal stress levels, yet overall distress (DASS total) correlated moderately with worse PSQI global scores. Stronger associations were seen with PSQI components for subjective sleep quality, sleep latency, sleep disturbances, and especially daytime dysfunction, underscoring the linkage between poor sleep and impaired daytime functioning.

Qualitative analyses yielded three themes: (1) Sleep quality and impact on daytime functioning—students described impaired attention, slower performance, and reduced engagement when sleep-deprived. (2) Sleep and its influence on health and well-being—stress and insufficient sleep formed a self-reinforcing cycle, heightening negative affect and further disrupting sleep. (3) Sleep and social availability—late-night academic work and expectations to remain contactable, along with social/relationship-related activities, delayed bedtimes. These findings show that individual and social factors are at play in determining healthy student sleep habits.

Many students reported long afternoon naps (20–180 minutes) and weekend "sleep debt" recovery, but still found it hard to balance academics, social life, and rest. Cultural and campus norms - "hustle culture," perceived need for constant productivity, and expectations associated with internships - were prominent barriers. Some students attempted time planning to preserve sleep but perceived limited control. Findings support targeting sleep within an occupational balance/occupational harmony framework, addressing social norms and perceived behavioral control, and integrating occupational therapy strategies (e.g., boundary setting, routines, coaching).

Limitations include reliance on self-report, potential lack of representativeness, questions about DASS-21 item suitability in Asian contexts, and omission of broader health and social support measures. Longitudinal and intervention studies—especially those addressing social pressures and leveraging positive social support—are warranted to improve sleep health and student well-being in Singapore.

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Stress disrupts Sleep through Pre-Sleep Arousal

Reference: Shaif NAS, Lim J, Reffi AN, Chee MWL, Massar SAA, Ong JL. Sleep Reactivity Amplifies the Impact of Pre-Sleep Cognitive Arousal on Sleep Disturbances. J Sleep Res. 2025 Oct 14:e70220. https://doi.org/10.1111/jsr.70220

Chronic stress commonly disrupts sleep via heightened pre-sleep arousal. However, some indivuals respond stronger to stress than others. This concept is known as sleep reactivity. A recent study investigated how daily stress relates to sleep and pre-sleep arousal, with sleep reactivity as a moderator.

Full-time National University of Singapore students were screened and grouped by the Ford Insomnia Response to Stress Test (FIRST): highly reactivity (n=30) vs low reactivity (n=30). Exclusions removed sleep/psychiatric disorders and sleep-affecting medications. Participants were followed for 14 days and wore wrist actigraphs for sleep (Total Sleep Time: TST, Sleep Onset Latency: SOL, Wake After Sleep Onset: WASO) and an ŌURA ring for pre-sleep heart rate (HR); they completed nightly stress checklists and ratings (0–100) and the Pre-Sleep Arousal Scale (PSAS) each morning. Compliance was 95% (800 nights).

Baseline differences confirmed greater symptom burden in high-reactive sleepers: higher PSQI and ISI scores and higher perceived stress, despite similar numbers of daily stressors. High-reactive sleepers also reported higher pre-sleep cognitive and somatic arousal, but groups did not differ in pre-sleep HR or actigraphy-measured sleep averages over 14 days.

Within-individual (day-to-day) analyses showed that higher-than-usual perceived stress predicted poorer sleep that night through increased pre-sleep cognitive arousal for all participants, irrespective of sleep reactivity (no moderated mediation). Specifically, a 10-point rise in perceived stress was associated, via cognitive arousal, with ~2.46 minutes less TST and ~0.76 minutes longer SOL; there was no meaningful indirect effect on WASO.

Between-individual analyses revealed a different pattern: high-reactive sleepers exhibited higher average perceived stress and cognitive arousal, which mediated greater WASO. The moderated mediation was significant - per 10-point difference in average perceived stress, the indirect WASO effect via cognitive arousal was ~1.23 minutes larger in the high-FIRST group than in the low-FIRST group. Neither subjective somatic arousal (PSAS-S) nor objective pre-sleep HR mediated stress–sleep relationships at either level, indicating cognitive (not physiological) arousal as the salient mechanism in this context.

Interpretation: Daily stress reliably degrades subsequent sleep via pre-sleep cognitive arousal across students, but individuals with high sleep reactivity show stronger chronic coupling between perceived stress, cognitive arousal, and fragmented sleep (longer WASO), despite similar average actigraphy across groups. Effect sizes were small but consistent with prior microlongitudinal work.

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CALENDAR

8-11 APR

IPSA 2026

The 9th congress of the International Pediatric Sleep Association
Florence, Italy, https://www.pedsleep.org/meeting-2026

14-17 JUN

Sleep 2026

The 40th annual meeting of the Associated Professional Sleep Societies, LLC (APSS)
Baltimore, MD, USA, https://www.sleepmeeting.org

20-23 OCT

Sleep Europe 2026

The 28th Congress of the European Sleep Research Society
Maastricht, the Netherlands, https://esrs.eu/event/sleep-europe-2026/

11-14 NOV

Sleep Down Under 2026

The Annual meeting of the Australasian Sleep Society
Brisbane, Australia, https://www.sleep.org.au/Public/Public/Events/SDU2026.aspx

Singapore Sleep Society

Membership Application and Fees

Ordinary members
$30/year – sleep professionals with a medical degree, PhD or equivalent.

Associate members:
$10/year – any person involved in the field of sleep disorders without the above qualification.

Supporting members:
Corporations and individuals supporting the society financially.

Complete the application form and email to:
singaporesleepsociety.sg@gmail.com

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