Common Sleep Problems in Children

Sheila Venkatarangam Jacob, MD, FRCP(C)

- Pediatrics and Respiratory Medicine
- Diplomate, American Board of Sleep Medicine

30 November 2021

Disclosure of potential sources of conflict of interest (last 2 years)

- Biron Groupe Santé
  - Consulting physician
  - Member of consultative committee
  - Medical director, Pediatric section
- Youthdale Sleep Centre
  - Consulting physician
- Takeda Canada
  - Speaker for sponsored presentations

None of these potential sources of conflict of interest have influenced the content of this presentation.

Case 1

- 3-year-old girl, otherwise well, who wakes up 2 or 3 times per night
- Mother is concerned because she is waking up several times per night
- PMH
  - Born at term (first child)
  - Symptoms of GE reflux until 6 months of age
  - No other known medical issues
- Physical exam
  - Alert and well-looking child, well-nourished
  - No abnormal findings noted

Question 1

What do you think is the most common sleep problem in young children?

- A. Obstructive sleep apnea syndrome
- B. Night terrors
- C. Behavioural insomnia
- D. Periodic limb movements during sleep

Question 1

What do you think is the most common sleep problem in young children?

- A. Obstructive sleep apnea syndrome
- B. Night terrors
- **C. Behavioural insomnia**
- D. Periodic limb movements during sleep

Case 1 (2)

- You ask the parents about the child's sleep-wake hours and bedtime routine.
  - The bedtime routine begins at around 7:30 p.m.
  - Bath – snack and video on tablet – brushing teeth – in bed by 8:30 p.m.
  - Refuses to go to bed or stay in bed on her own.
  - A parent lies down with her until she falls asleep, usually only by around 9:30 p.m., then leaves the room.
  - In the morning, the child is usually still sleeping at 6:30 a.m. and has to be awakened by a parent so that she can be dropped off at daycare in time for the parents to get to work.
  - She naps for two hours in the afternoon at daycare but does not do so consistently when she is at home (weekends and holidays).

Question 2

Based on history obtained so far, what factor(s) do you think are most likely to be contributing to this child's sleep difficulties?

- A. Suboptimal bedtime routine
- B. Sleep apnea
- C. Night terrors
- D. Periodic limb movements during sleep
- E. Sleep onset association
- F. ADH/D or other developmental issue
- G. Scheduling issues
- H. Separation anxiety

Question 2

Based on history obtained so far, what factor(s) do you think are most likely to be contributing to this child's sleep difficulties?

- **A. Suboptimal bedtime routine**
- B. Sleep apnea
- C. Night terrors
- D. Periodic limb movements during sleep
- **E. Sleep onset association**
- F. ADH/D or other developmental issue
- **G. Scheduling issues**
- H. Separation anxiety

Behavioural insomnia

- Common in young children
- Bedtime refusal (requesting food, water, trip to washroom…)
- Difficulty for parents to set limits
- Sleep onset association disorder
  - Child falls asleep under certain conditions and wakes up during the night under different conditions
- Scheduling issues may contribute (e.g. afternoon naps)
- Anxiety may play a role

Optimising sleep habits / sleep hygiene(1)

- Maintain, as much as possible, regular sleep and wake-up times.
- Avoid caffeine and other stimulants in the afternoon and evening.
- Avoid use of screens for at an hour prior to bedtime.
- Establish a favourable bedtime routine (bath, bedtime story…).

Optimising sleep habits / sleep hygiene (2)

- Create a comfortable and non-stimulating environment for sleep.
- Use the bed only for sleep
- Avoid prolonged periods of time in bed awake
- Ensure the same conditions as sleep onset at during nighttime awakenings

Case 1 (3)

- You ask the parents for more information about the awakenings and you get the following information.
  - The first awakening occurs around an hour and half after sleep onset and the child is crying, extremely agitated, and the parents are unable to calm her down.
  - There may be a second awakening that is similar to the first around 2 hours later but, more commonly, the child appears fully awake during the subsequent awakenings and wants a parent to stay with her until she goes back to sleep. This occurs every 2 hours if she is sleeping on her own.
  - Due to parental fatigue, the child often finishes the night in their bed. Once she is in their bed, she sleeps well until morning.
- The parents ask if the child could be having ‘bad dreams’.

Question 3

Which of the following do you think would favour a diagnosis of ‘night terrors’ versus ‘nightmares’?

- A. More likely if the child is ‘overtired’
- B. Episodes occurs late in the sleep period
- C. Child is able to recount a detailed dream
- D. Child is consoled by the presence of the parents

Question 3

Which of the following do you think would favour a diagnosis of ‘night terrors’ versus ‘nightmares’?

- **A. More likely if the child is ‘overtired’**
- B. Episodes occurs late in the sleep period
- C. Child is able to recount a detailed dream
- D. Child is consoled by the presence of the parents

Parasomnias

- During sleep-wake transitions
  - Rhythmic movement disorder
  - Sleep starts
- From non REM sleep
  - Confusional arousals
  - Night terrors
  - Sleepwalking
- From REM sleep
  - Nightmares
  - REM sleep behaviour disorder

Differences between night terrors and nigthmares

Night Terrors	Nightmares
Occur early in the night, from deep non REM sleep	Occur later in the night, from REM sleep
Partial arousal – the child is agitated, may not appear to recognize the parents, is difficult to calm; can return to sleep without fully awakening	The child usually wakes up fully and can be consoled
No dream recall, no recollection of the event in the morning	May be able to recount details of a dream

Management of deep sleep parasomnia in young children

- Avoid sleep deprivation
- Maintain good sleep hygiene
- Safety measures
- Reassurance

Case 2

- 6-year-old boy whose parents are concerned that he always looks tired and is having difficulty paying attention in school
  - PMH
    - Born at term
    - Recurrent ear infections until placement of myringotomy tubes at age 2 years
  - Family history
    - Sleep apnea in maternal grandmother
  - Physical exam
    - Mouth-breathing, dark circles under eyes, mild retrognathia, tonsils 4+
- You suspect obstructive sleep apnea

Obstructive sleep apnea / hypopnea syndrome (OSAHS)

- Intermittent partial or complete obstruction of the upper airways during sleep
- Clinical spectrum ranging from simple snoring to severe obstructive events resulting in oxygen desaturation, carbon dioxide retention and sleep disruption due to recurrent micro-arousals
- May have a positional component, worse in the supine position

OSAHS - manifestations

- Nighttime
  - Snoring or noisy breathing
  - Witnessed apnea, obstructed breath sounds
  - Restless sleep, nighttime awakenings
  - Excessive sweating
  - Nocturnal enuresis
- Other
  - Increased sleep requirements, daytime sleepiness
  - Hyperactivity, irritability, concentration difficulties
  - Developmental issues, failure to thrive in young children
  - Effects on cardiovascular system in severe cases

Question 4

What do you think is the most common factor contributing to obstructive sleep apnea in young children?

- A. Obesity
- B. Hypertrophy of the adenoids and / or tonsils
- C. Craniofacial abnormalities and genetic syndromes
- D. Retrognathia

Question 4

What do you think is the most common factor contributing to obstructive sleep apnea in young children?

- A. Obesity
- **B. Hypertrophy of the adenoids and / or tonsils**
- C. Craniofacial abnormalities and genetic syndromes
- D. Retrognathia

Some risk factors for OSAHS

- Enlarged tonsils and / or adenoids
- Retrognathia, high arched palate
- Obesity
- Decreased muscle tone
- Midfacial hypoplasia (e.g. as in Trisomy 21, Achondroplasia)
- Other craniofacial abnormalities

Question 5

What would be your next step if you suspect a child has OSAHS

- A. Lateral neck xray
- B. ENT evaluation
- C. Overnight oximetry
- D. Overnight polysomnography
- E. Referral to a respirologist or sleep clinic

Question 5

What would be your next step if you suspect a child has OSAHS

- **A. Lateral neck xray**
- **B. ENT evaluation**
- **C. Overnight oximetry**
- **D. Overnight polysomnography**
- **E. Referral to a respirologist or sleep clinic**

Any of these would be good choices

Evaluation of a child with suspected OSAHS

- Polysomnography
  - Gold standard for diagnosis of OSAHS
  - Long waiting list in the public sector, expensive in private sector
- Overnight oximetry
  - Can be a screening test for sleep apnea, especially with use of the McGill Score (looking at number and degree of desaturations, presence or absence of event clusters)
  - A normal oximetry does not rule out the diagnosis
- Referral to a Respirologist, Sleep Centre or ENT specialist

Case 3

- 15-year-old girl who presents with difficulty falling asleep and difficulty waking up in time for school
- Tired during the day, especially during her morning classes
- PMH unremarkable
- FH unremarkable
- Physical exam
  - Well-looking, non-somnolent teenager, IMC 28
  - Rest of exam unremarkable

Question 6

What do you think is the most common cause of daytime sleepiness in teenagers?

- A. Obstructive sleep apnea syndrome
- B. Pyschophysiological insomnia
- C. Narcolepsy
- D. Inadequate quantity +/- quality of nighttime sleep

Question 6

What do you think is the most common cause of daytime sleepiness in teenagers?

- A. Obstructive sleep apnea syndrome
- B. Pyschophysiological insomnia
- C. Narcolepsy
- **D. Inadequate quantity +/- quality of nighttime sleep**

Question 7

How much sleep on average do you think most teenagers need to function well during the day?

- A. 6 to 7 hours
- B. 7 to 8 hours
- C. 9 to 10 hours
- D. 10 to 11 hours

Question 7

How much sleep on average do you think most teenagers need to function well during the day?

- A. 6 to 7 hours
- B. 7 to 8 hours
- **C. 9 to 10 hours**
- D. 10 to 11 hours

Sleep requirements in teenagers

- Most teenagers require 8 to 10 hours of sleep (average is 9 and a quarter hours).
- This varies from person to person.
- A person getting a good night’s sleep should be awakening spontaneously in the morning and feeling refreshed and ready to start the day.
- Most teenagers are not getting the sleep they need (average 7 hours per night, may be interrupted).

Effects of sleep deprivation in teenagers

- Difficulty getting up in the morning
- Daytime sleepiness
- Effects on concentration and learning
- Effects on mood and emotion
- Effects on metabolism / weight

Question 8

After ruling out anxiety and depression, what would you do next?

- A. Send the patient for a sleep study
- B. Bloodwork for iron studies, TSH
- C. Prescribe a sedative medication or another medication with sedating properties
- D. Recommend a trial of melatonin
- E. Give advice on sleep hygiene and arrange follow-up

Question 8

After ruling out anxiety and depression, what would you do next?

- A. Send the patient for a sleep study
- **B. Bloodwork for iron studies, TSH**
- C. Prescribe a sedative medication or another medication with sedating properties
- **D. Recommend a trial of melatonin**
- **E. Give advice on sleep hygiene and arrange follow-up**

Initial evaluation of a teenager with insomnia and / or daytime somnolence

- Ask about sleep hygiene and hours of sleep on school nights and on weekends
  - Bedtime, naps
  - Nighttime sleep latency and sleep duration
  - Caffeine and other stimulants (prescription or other)
  - Screen use at bedtime
  - Distractions (video games, textos…)
  - Use of bed for homework, use of phones...
  - Sleeping in on weekends
- Ask about symptoms that may suggest sleep apnea or another sleep disorder (e.g. psychophysiological insomnia, narcolepsy)
- Assess for anxiety and/or depression
- Consider bloodwork to rule out other causes of daytime fatigue

Case 3 (2)

- You obtain further history and decide that there are no symptoms to suggest obstructive sleep apnea, anxiety or depression.
- You ask for iron studies and thyroid function tests (results come back normal).
- You give the patient advice on sleep hygiene measures and arrange follow-up in a month.

- At the follow-up visit, the patient says that has followed your advice but is still unable to fall asleep before 1 a.m. and she has to be up by 6:30 a.m. to take public transportation to get to school for an 8 a.m. start.

Question 9

Which of the following factors would make you think of delayed sleep phase syndrome rather than other causes of insomnia?

- A. Ability to fall asleep in locations other than the bed
- B. Ability to fall asleep quickly if goes to bed at 1 a.m. or later
- C. Sleepy until getting into bed
- D. Ability to sleep until noon on weekends
- E. Frequent nighttime awakenings with difficulty going back to sleep

Question 9

Which of the following factors would make you think of delayed sleep phase syndrome rather than other causes of insomnia?

- A. Ability to fall asleep in locations other than the bed
- **B. Ability to fall asleep quickly if goes to bed at 1 a.m. or later**
- C. Sleepy until getting into bed
- **D. Tendancy to sleep until noon on weekends**
- E. Frequent nighttime awakenings with difficulty going back to sleep

Delayed sleep phase syndrome

- Most common in adolescent but may affect younger chlidren or adults
- Physiologic and social contributing factors, may be aggravated by use of screens in the evening
- Difficulty initiating sleep at the desired bedtime hour and difficutly awakening on time in the morning
- Daytime sleepiness, especially in the morning
- No difficulty (or much less difficulty) falling asleep at a later bedtime; could function well if allowed to fall asleep later and wake up later

Treatment for delayed sleep phase syndrome

- Optimise sleep hygiene
- Maintain a regular sleep-wake schedule (+/- one hour if possible)
- Melatonin
- Morning light exposure

- Later school start times have been found to be helpful…

Light therapy

- Bright light exposure in the morning
- 30 to 60 minutes
- Daylight during periods of the year when this is possible
- Light box of 5,000 to 10,000 lux

Thank you for your participation!