An approach to common sleep presentations in infants and toddlers

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Background
Healthy sleep is vital for optimal child development, yet over 30% of Australian parents report having children with disrupted sleep affecting all family members. These sleep difficulties might co-exist with sleep breathing disorders, contributing to morbidity and reduced quality of life.

Objective
This article aims to provide general practitioners (GPs) with an evidence-based, biopsychosocial approach to managing common sleep problems in infants and preschool-aged children.

Discussion
Strategies and techniques are outlined to aid GPs in promoting healthy sleep during infancy, educating parents on typical sleep patterns and supporting families in managing problematic sleep patterns in toddlers. Emphasis is placed on a tailored approach to developing a healthy sleep environment to meet the child's needs and parental values. Valuable resources and indications for specialist consultation are included.

SLEEP PROBLEMS in young children are challenging to manage because of the complex biological and sociocultural factors that shape our sleep preferences and expectations. There is no universal definition of 'normal sleep'. A sleep problem often arises from a disparity between parental expectations, the infant's biophysical sleep needs and their cultural context. Instead of an algorithmic or diagnostic approach, sleep problems require careful consideration of the child's biological, psychological and social factors, including predisposing, precipitating and perpetuating aspects.

Aim

This article aims to support general practitioners (GPs) in applying this biopsychosocial approach to sleep problems involving infants and preschool-aged children.

Typical sleep

Sleep is an essential part of life and necessary for proper development.[1] In the same way that cognitive, social, motor and speech milestones evolve through early childhood, sleep is a maturational process with the infant rapidly learning and establishing a regular sleep–wake cycle. Sleep and wakefulness, like all physiological processes, are regulated by both a homeostatic and a circadian process.[2] Sleep deprivation experiments have shown that the body tolerates a certain amount of wakefulness each day before sleepiness (sleep pressure) reaches a point where sleep is required to maintain normal neurophysiological function.[2] Following a period of reduced sleep, additional sleep time is generally required for sleep homeostasis. The sleep homeostat set point for sleep duration varies widely with age and even between children of the same age (Table 1).[2–4]

The circadian clock modulates the timing and quality of sleep–wake states around an approximate 24-hour period.[2] A third-trimester foetus will have active and quiet sleep with a primitive circadian regulatory system that might match the maternal circadian rhythm. All biological systems, like body temperature, cortisol levels and melatonin secretion, follow a circadian pattern and entrain at various points in development (Table 1). Light and darkness are the primary environmental cues to maintain this circadian rhythm.

Infants will transition from fragmented to consolidated sleep and gradually reduce sleep duration until they develop a stable 24-hour sleep–wake pattern between three and five months of age.[3] Fragmented sleep is physiologically typical for infants, particularly in the first six months of life. During night-time sleep, arousals naturally

occur between sleep cycles. Sleep architecture can become increasingly fragmented when the infant cannot transition smoothly into the next sleep cycle (Table 1).[4]

Cultural considerations

Sleeping norms are influenced by complex biological and sociocultural factors that shape our sleep preferences and expectations. No comprehensively proven optimal sleep duration exists, and sleep behaviours vary widely, even for children within the same family (Table 1). Although many parents might prefer solitary sleeping patterns made popular in 20th century Western, democratic and industrialised countries, it is essential to recognise that room sharing and co-sleeping are higher across all ages in predominantly Asian countries compared with predominantly Western countries.[5] Multinational data using the Brief Infant Sleep Questionnaire – Revised (BISQ-R) suggest that 28–48% of parents report sleep problems in children aged three years and under, and 96% desire change.[6] Within Australia, sleeping practices will vary tremendously across a culturally diverse population regarding bedtime, total sleep time, room sharing, bed sharing and daytime napping.

Table 1. Characteristics of sleep for young children[2,9–11]

Age	Sleep duration (in 24 h)	Typical sleep patterns and behaviour
0–2 months	16–18 h	• Neonates experience frequent arousals from sleep and transition directly from wake to REM or active sleep. During REM sleep, infants might demonstrate sucking movements, grimaces, smiles, vocalisations, stretching, muscle twitching and irregular breathing • Most infants do not 'sleep through the night' (defined as 5 h or more of uninterrupted sleep after midnight) in the first 2 months • A circadian pattern of body temperature regulation and salivary cortisol levels develops by 2–3 months of age
3–5 months	14–16 h	• Stable 24-h distribution of sleep–wake with established circadian rhythm, consolidated night sleep and well-defined daytime naps • Learning of positive sleep associations and self-soothing begins
6–12 months	12–16 h	• Infantile colic affects 10–40% of babies, is often worse in the evening/night and usually resolves spontaneously by 6 months of age • Up to 78% of infants 'sleep through the night' by nine months of age and some might not achieve sleep consolidation until much later • Reported problems with night waking and bedtime increase in frequency from age six months onward
1–2 years	11–14 h	• Increasing child independence, ambulation and altered sleeping arrangements (eg transition to their own room) might conflict with parental responsibilities and expectations • Multiple daytime naps are common
Preschool	10–13 h	• 30% still experience bedtime difficulties • Morning naps are given up before afternoon naps • It is normal to have up to six arousals per night between sleep cycles

REM, rapid eye movement.

For example, Yolŋu Elders in Arnhem Land, Northern Territory, recognise sleep as an integral part of health, spirituality and connection to land and heritage through the use of sleep stories.[7,8] An understanding of both First Nations knowledge and non-First Nations knowledge (the 'two ways of knowing') is essential for sleep consultations with First Nations Australians where Western medicine should complement traditional knowledge systems around sleep.[8] There is evolving evidence of a high burden of sleep disorders in First Nations Australian children. It is estimated that up to 35% of First Nations Australian children experience difficulty getting to and staying asleep, 12% have inconsistent bedtimes and 10% have insufficient total sleep for their age.[7] Polysomnography data from a cohort of children in the Northern Territory between 2015 and 2021 revealed that 55% of First Nations Australian children and 44% of other Australian children had obstructive sleep apnoea (OSA).[9] Caregiver self-reports suggest that First Nations Australian children have more daytime sleepiness, pre-bed screen time and later bedtimes than their non-Indigenous peers.[9]

Safe sleeping

Evidence-based safe sleeping guidelines for infants have been developed and publicised to reduce the risk of sudden infant death during sleep. Australian guidelines recommend maintaining a safe sleeping environment (Table 2) by consistently placing the baby on their back for sleep, keeping the baby's face and head uncovered, keeping the baby's environment smoke free before and after birth and sleeping the baby in a safe cot in the same room as the parent for at least the first six months.[10] Co-sleeping is associated with a significantly increased risk, especially when combined with maternal smoking, and breastfeeding is associated with a significantly reduced risk of sudden unexplained death in infancy (SUDI).[11] A recent policy statement from the American Academy of Pediatrics has additional recommendations, including: the avoidance of alcohol, marijuana, opioids and illicit drug use during pregnancy and after birth; obtaining regular prenatal care and routine immunisations; and offering a

pacifier or dummy at naptime and bedtime (once breastfeeding is well established for breastfed infants).[12] The use of a dummy also reduces SUDI risk, even if the pacifier falls out of the infant's mouth.[12] There remains no evidence to support the routine use of infant cardiorespiratory monitors to prevent SUDI.[13]

In 2016, the term 'apparent life-threatening event' (ALTE) was largely replaced by 'brief resolved unexplained event' (BRUE).[14] A BRUE is defined as an event in which the observer notes one or more of the signs of cyanosis, pallor, breathing cessation/decrease/irregularity, marked change in tone or altered level of responsiveness occurring for a period of less than one minute and then resolving to baseline in a child <12 months of age without a known causative medical condition, with subsequent medical evaluation resulting in a reassuring history, physical examination and vital signs.[14] BRUEs have not been found to be precursor events to SUDI; instead, they have various possible causes, including cardiac and metabolic conditions, inflicted injury and infections.[13,15] Most often, no clear cause is found, and perhaps exaggerated airway reflexes in the setting of feeding, reflux or nasopharyngeal secretions are the reason for the event.[16] BRUEs can occur during awake or sleep states. Referral to the local paediatric service should be considered for BRUEs occurring in infants aged >60 days, requiring cardiopulmonary resuscitation administered by a healthcare professional, born before 32 weeks gestational age or before 45 weeks postmenstrual age, with concerning history or examination or experiencing multiple BRUEs.[15,16] Multiple BRUEs exclusively during sleep could be a presentation of infant central sleep apnoea (CSA). International expert consensus supports a case-by-case consideration for home cardiorespiratory monitoring for high-risk preterm infants and those presenting with severe or recurrent ALTEs or BRUEs.[13] Specialist referral for such cases is appropriate.

Infant sleep problems

Being a new parent is more stressful than ever with the amount of anecdotal advice available through social media, internet experts, parenting books and relatives. Despite this abundance of information, sleep problems in the first 12 months of life are reported worldwide and arise from a disparity between family expectations, the infant's sleep needs and the cultural context.[17] Defining the problem will be unique to each parent–child dyad. In Australia, 30% of parents report infant sleep problems. Postnatal depression affects 10–15% of Australian mothers and might be higher in mothers encountering infant sleep difficulties.[18]

There are two broad approaches to infant sleep problems that have historically been viewed as mutually exclusive. In the traditional approach, the goal is to ultimately establish consolidated overnight sleep using behavioural management strategies and structured routines to teach an infant to become self-regulated and independent in their sleep.[19] Techniques include graduated extinction, 'controlled crying', positive routines, faded bedtime with response cost and scheduled awakenings.[20,21] An American Academy of Sleep Medicine (AASM) taskforce found up to 94% initial success rates reported in randomised controlled trials for the behavioural management approach but, due to the lack of longitudinal research with standardised outcomes and objective measures of sleep (eg actigraphy), it is unclear whether this translates to better sleep into early childhood and adolescence.[20,22]

The second approach involves intuitive or responsive parenting, rooted in attachment theory, which involves an adaptive response to cues and cries based on parental intuition and insight.[22,23] This approach aims to support healthy sleep regulation for all family members by empowering the caregivers to respond sensibly to their infant's cues (day and night). The medical practitioner offers consultation on healthy feeding patterns, sleep/circadian physiology and the importance of the family's and infant's physical and psychological wellbeing.[22,23] With appropriate information and insight on healthy sleep, the parent learns to harmonise their sleeping practices and build a secure attachment with their child. For example, instead of structuring family life around the baby's preset feed and sleep cycle schedule, the baby learns to adapt to the parent's routine. The child is allowed to feed and sleep where they want and when they want with a parent nearby. This approach has been well accepted by patients and clinicians over the past 10 years (along with other attachment-based parenting approaches), but the variability of intuitive parenting has made it difficult for researchers to demonstrate associations between attachment and infant sleep patterns.[24]

Clinicians need to ascertain whether a sleep issue originates from the child themselves, be it organic or behavioural, and assess their sleep environment's effect. Screening and treating comorbid medical conditions (eg pruritus from eczema) is a prerequisite because they frequently

Table 2. Safe sleeping environment recommendations[9–11]

Item	Recommendation
Safe cot	Meets Australian standard AS/NZS 2172:2003 Note: There are no Australian safety standards for bassinets (https://rednose.org.au/article/bassinets)
Safe mattress	Firm, flat, right size for the safe cot, meets voluntary Australian standard AS/NZS 8811.1:2013 (see https://rednose.org.au/article/red-nose-six-safe-sleep-recommendations)
Safe bedding	Lightweight bedding, firmly tucked in and only pulled up to the chest
Safe sleeping bag	Well fitted across the neck and chest, with baby's arms out and no hood
Clothing	Remove all hats for sleep Dress the baby appropriately for the temperature of the room, making sure they are comfortably warm but not hot
Other objects	Do not leave any loose items in the cot, such as soft toys, comforters, doonas or thick underlays such as lambswool

exacerbate sleep problems. Next, clinicians need to understand the parental values regarding their cultural expectations for employment, education and social lifestyle. GPs can correct parent misconceptions around sleep through education about sleep physiology, benign sleep behaviours and healthy child development.[17] Finally, clinicians should promote parental self-care through regular follow-up and counselling for physical and mental wellbeing. There is no blueprint approach; families might benefit from tailored strategies depending on their circumstances. For example, positive sleep routines and specific behavioural management strategies might help a mother with goals to wean off breastfeeding and return to work. Manage expectations, such as a baby sleeping through the night or sleeping 14 hours a night, with the reality of typical sleep behaviours (Table 1). Consultation with child and family health centres, parenting services or paediatricians should be considered for infants with persistent sleep problems despite standard management strategies (see https://raisingchildren.net.au/babies/sleep) or if an additional underlying aetiology is suspected.

Toddler sleep problems

The preschool years are often exhausting for all family members, and parents require gentle reassurance about the variations of normal sleep behaviours and education about implementing consistent bedtime sleep practices. Many toddlers sleep in a cot in their parents' bedroom or in a separate room with or without siblings. Daytime activities increase exponentially, as does stimulation from the world around them. Ensuring a friendly and familiar sleep environment is essential as children become more aware of their surroundings. A cool, quiet, dark bedroom is ideal. A regular bedtime routine with reduced light exposure, physical activity and excitement helps toddlers learn appropriate behaviours and positive sleep associations. Children expect the same conditions each time they fall asleep. For example, if a child is rocked or fed to sleep or hears music or white noise to fall asleep, these same cues are likely to be required for them to fall back to sleep again if they wake during the night. Bedtime stories should be calming and relaxing, like the sleep stories created by First Nations storytellers available at www.dreamysleep.com.au. Some helpful strategies for phasing out night feeds can be found at https://raisingchildren.net.au/toddlers/sleep/better-sleep-settling/night-weaning. Regular bedtimes and wake times help stabilise the circadian rhythm. Finishing daytime naps before 4.00 pm allows sufficient build-up of sleep pressure for bedtime.[19]

Chronic insomnia disorder (behavioural insomnia of childhood)

There is a high prevalence of behavioural sleep problems in children aged six months to three years, summarised in the *International Classification of Sleep Disorders – Third Edition* (ICSD-3) under chronic insomnia disorders (incorporating behavioural insomnia of childhood, sleep-onset association disorder and limit-setting sleep disorder).[25] Subtypes of sleep-onset associations, limit setting and a mixed type (features of both) are encompassed under the umbrella chronic insomnia disorder.[19] Children with sleep-onset association-type insomnia experience difficulty in self-settling initially when a particular associated item, behaviour or stimulation the child has grown accustomed to is unavailable. This can lead to sleep maintenance insomnia when the child cannot fall back asleep after an arousal without their sleep association. In the limit-setting type, toddlers find ways to delay or distract from going to bed; for example, by asking for water or additional stories. Limit-setting problems are common in toddlers who can vocalise their wants and repeatedly climb out of bed. Parents interested in behavioural management strategies should be counselled regarding consistency, routines, positive reinforcement and forced choices (Table 3).[19] Using motivational interviewing skills and regular follow-up will assist families with adherence to their desired behavioural management strategy. Specialist referral should be made if there is clinical suspicion of underlying organic pathology (discussed below) or if the parents have exhausted standard strategies.[21]

In the long term, it has been postulated that early childhood sleep problems and persistent insomnia are significantly related to attention deficit hyperactivity disorder. The prevalence of such issues is predictive of symptoms of anxiety and depression in adolescence.[26] A bidirectional relationship has been postulated between sleep and development, with sleep issues potentially affecting a child's development but also being more common in children with developmental impairments, such as those with autism spectrum disorder. Therefore, the presence of persistent and ongoing sleep problems should prompt a thorough assessment of a child's development, with consideration of specialist referral if there are concerns.

Melatonin

Melatonin, an indole hormone secreted by the pineal gland, is regulated by retinal light perception and neurons within the suprachiasmatic nucleus of the anterior hypothalamus.[27] Exogenous melatonin has become one of the most commonly used drugs for childhood sleep problems for its chronobiotic and sedating effects.[27] Infants in the first three months of life have low endogenous nocturnal melatonin concentrations that gradually peak between ages one and five years.[27] Studies on urinary melatonin metabolites demonstrate a melatonin circadian rhythm by six to nine months.[28] Children with a persistently immature pattern of melatonin secretion might experience more sleep fragmentation.[28] There is currently no evidence for a minimum age for administering exogenous melatonin, particularly in healthy, typically developing children. Based on studies of the neuroprotective effects of high-dose melatonin in infants, expert consensus recommendations are that melatonin might be safe for children aged over six months.[27] Liquid preparations will have a more rapid onset of action than slow-release tablets. There is no evidence that melatonin dosing over 6 mg nocte is beneficial at any age. Families should be aware that over-the-counter melatonin products might contain between –83% and +478% of what is listed on the label.[29]

Most infants and toddlers do not require melatonin to establish a healthy sleeping pattern. It is recommended to seek advice from a paediatric sleep specialist when

considering exogenous melatonin in children aged three years and under. A telephone or telehealth consultation might be a more feasible option for families facing cost, rurality and health system limitations.

Parasomnias

Parasomnias are a group of abnormal movements, emotions or behaviours arising from sleep that are commonly reported by parents and can cause significant distress to them and their children.[30] Parasomnias are usually seen at transition points through the sleep stages and during arousals and include sleepwalking, sleep talking, moaning, bruxism and twitching.[21,31]

Parasomnias can be divided into non-rapid eye movement (NREM) and rapid eye movement (REM)-associated events. Night terrors are NREM events where children seem overtly distressed but are not lucid; these are usually self-limiting and resolve with age. Sleepwalking, sleep talking and confusional arousals are also NREM events. REM sleep occurs mainly after midnight and increases in duration through the early hours. Nightmares and sleep paralysis are REM parasomnias that can disturb the child as skeletal muscle paralysis occurs in REM. In most cases, clear strategies can be provided along with reassurance (see https://raisingchildren.net.au/preschoolers/sleep/nightmares-night-terrors-sleepwalking/nightmares).

OSA, restless legs syndrome and chronic sleep deprivation can worsen parasomnias. Smartphone video recordings of the events might aid in diagnosis, and polysomnography is not usually required. Specialist referral should be considered if the diagnosis is uncertain or episodes are frequent and violent, with safety concerns.

Paediatric periodic limb movements of sleep

Formerly known as sleep myoclonus or nocturnal myoclonus, the term 'periodic limb movements of sleep' (PLMS) describes brief, involuntary twitching or kicking movements, typically of the lower limbs, lasting a few seconds.[32] These can occur frequently, resulting in spontaneous arousals and difficulty with sleep maintenance.

Table 3. Behavioural strategies for chronic insomnia disorder in young children[20]

Strategy	Description
Parent consistency	• The foundation of appropriate limit setting • Parents must agree on what sleep strategy to employ and support one another • Limit setting should be unanimous between parents
Positive sleep routines	• An age-appropriate bedtime should be set between 7.00 pm and 8.30 pm every night of the week (including weekends if possible) • Conduct a nightly routine of relaxing pre-bedtime activities (eg quiet game, reading books, calm songs) • A bedtime chart with a star or tick placed next to each depicted activity after completion might be a helpful visual aid
Positive reinforcement	• Parents should provide immediate praise to reinforce desired behaviours • Unwanted behaviours are ignored and misbehaviour results in the sleep routine ending and going to bed without discussion or bargaining • Positive rewards must be consistent for all siblings in a family
Forced choices	• Provide a child with autonomy and control over their bedtime through a choice of bedtime activity (eg playing a game or reading a book first) • Choices should be acceptable and realistic and limited to 2 or 3 options

PLMS can occur in male and female individuals at any age and are deemed significant if more than five are recorded per hour on polysomnography.[33] There is generally no fixed pattern and no known aetiology. Associations with anaemia and low serum ferritin (when C-reactive protein is normal) have been identified, but there is no direct causality.[34] Children who take selective serotonin reuptake inhibitors seem more affected.[35] In most cases, children presenting with PLMS have only occasional such movements, typically around sleep onset, without significantly affecting overall sleep time and maintenance; these children require no specific treatment. However, if the movements are atypical, frequent and disrupt sleep, consider performing iron studies (targeting serum ferritin >50 µg/L). If issues continue, specialist review might be warranted.

Sleep breathing problems

The noisy infant

Noisy breathing during sleep is a common infant presentation to primary care and might cause significant distress for parents. A thorough history and examination are required, including resuscitation at birth (especially intubation) and feeding. Characterising the noise as intermittent/continuous, acute/chronic and inspiratory/expiratory/biphasic helps narrow the differential diagnoses. For example, nasal stertor (an awake snore) suggests the presence of upper airway obstruction; inspiratory stridor suggests extrathoracic obstruction at the glottic or supraglottic level; expiratory stridor suggests intrathoracic obstruction; and biphasic stridor suggest a fixed airway abnormality.[36] Smartphone video recordings of the noise are invaluable.

Laryngomalacia is the most prevalent cause of infant stridor,[37] with a classically inspiratory, intermittent and dynamic noise. Endoscopic airway examination demonstrating features of a long/curved epiglottis, shortened aryepiglottic folds and bulky/prolapsing arytenoids can confirm the diagnosis but is generally only indicated in infants with feeding difficulties, failure to thrive, significant respiratory distress, recurrent apnoeic/cyanotic events or biphasic/expiratory stridor suggestive of

alternative diagnoses.[38] Most infants with laryngomalacia can be treated conservatively with regular weight monitoring and developmental tracking. Symptoms abate in most by 12–18 months of age without surgical intervention, but some children can remain noisy for several years.[37] Among infants with severe symptoms, 10–20% might benefit from ear, nose, throat (ENT) surgical consultation, with supraglottoplasty being the initial treatment of choice where indicated.[39]

Red flag signs or symptoms (differential diagnosis) warranting referral include a persistent abnormal cry (vocal fold immobility), noisy breathing with cutaneous haemangiomas (because this increases the likelihood of an airway haemangioma), noisy breathing with dysphagia (vascular ring) or a history of prematurity with prolonged intubation (subglottic stenosis and cysts). Wheezing from birth or outside the setting of acute illness might represent a lower airway abnormality. Consider an airway foreign body at any age in the presence of acute onset wheeze/stridor, a suspicious history or abnormalities on the expiratory chest radiograph.[39]

Obstructive sleep apnoea

Toddlers often experience mild upper airway obstruction and snoring with an upper respiratory tract infection when secretions and swollen lymphatic tissues swell and limit airflow. Approximately 1–5% of children develop persistent upper airway obstruction even when they do not have an intercurrent infection, with chronic hypertrophy of the tonsillar or adenoidal tissue leading to OSA.[2] Preschool-aged children with OSA usually present with habitual snoring; this might be associated with frequent night waking from respiratory arousals, being tired or sleepy despite adequate sleep duration, restlessness, diaphoresis, hyperactivity and behavioural challenges. Although chronic adenotonsillar hypertrophy is often to blame, exacerbating comorbid conditions including allergic rhinitis, gastro-oesophageal reflux disease and anatomical anomalies (eg cleft palate, macroglossia, dysmorphism secondary to congenital syndromes and acquired airway obstruction postoperatively or from inhalational/ingestion burns) should be identified and treated.[40] Obesity is an emerging factor in young children, and OSA should be considered if a child is above the healthy weight range for age.[41]

Indications for sleep specialist referral include snoring or noisy breathing during sleep present for three or more nights per week; witnessed difficulty breathing while asleep (eg increased effort of breathing, choking, gasping or snorting during sleep); significant parental concern because of their child's breathing while asleep; frequent daytime mouth breathing; and witnessed obstructive apnoea during sleep where a parent describes cessation of airflow despite breathing effort (to distinguish from central apnoea).[42] Again, smartphone video recordings can be helpful.

ENT surgical consultation is appropriate in this age group if the abovementioned signs and symptoms are consistent or intermittent with recurrent tonsillitis because adenotonsillectomy is the mainstay of treatment if enlarged tonsillar/adenoidal tissues are present. If a non-surgical approach is sought, there is evidence to support the use of intranasal corticosteroids (INCS) for six or more weeks before assessment for significant change. Epistaxis is a rare but undesirable side effect of INCS. Leukotriene receptor antagonists (eg montelukast) have also been shown to be effective in this age group but are not yet approved by the Therapeutic Goods Administration (TGA) for this indication in Australia.[43] Combined INCS and montelukast might be effective in non-obese children with mild OSA.[44] Counselling should be given about potential side effects of montelukast, namely increased night terrors and mood disturbance, that subside soon after the medication is withdrawn.[45]

Central sleep apnoea

CSA is characterised by periods of decreased or absent effort to breathe during sleep, resulting in repetitive episodes of insufficient ventilation and compromised gas exchange, most often manifesting as desaturations. Although there are rare genetic causes of severe CSA, more commonly CSA in young infants is idiopathic and thought to be due to temporary immaturity of the brain's respiratory control apparatus.[46] Parents might report pauses in breathing, BRUEs during sleep or failure to thrive. Polysomnography is required for the diagnosis of CSA. In cases where apnoea is associated with significant desaturation, treatment with supplemental oxygen might be indicated. Due to immature respiratory drive in infants, CSA generally resolves after several months.[47] Finally, CSA might occur as a manifestation of another condition affecting neurological function or development in infancy, such as Prader–Willi syndrome, Trisomy 21, neuromuscular disorders, hypothyroidism, Arnold–Chiari malformation or other structural brain abnormalities.[48] If CSA is suspected, consultation with a paediatrician or paediatric sleep specialist is recommended.

Conclusion

Sleep issues are prevalent in infancy and early childhood and can be associated with significant parental distress and cause disruption for the entire family. There is no one-size-fits-all solution, but a helpful approach is summarised in the following five steps:

1. Recognise the wide physiological variation of typical sleep during infancy.
2. Be sensitive towards parental concerns, their cultural context and expectations around sleep.
3. Exclude predisposing, precipitating and perpetuating comorbid disease. Refer if you need clarification.
4. Provide advice tailored to the needs of each child and family.
5. Promote self-care and be supportive through regular follow-up using a biopsychosocial approach.

Key points

- Sleep fragmentation with frequent night waking is typical in infants and young children and becomes a problem when there is a perceived discrepancy between parent expectations and the child's biophysical sleep needs.
- GPs can offer culturally appropriate responsive parenting and behavioural management strategies tailored to individual parent preferences to complement a foundational understanding of typical sleep behaviours and safe sleeping practices.
- Caregiver consistency, positive sleep routines and appropriate limit setting for toddlers around bedtime are fundamental for establishing healthy and adequate sleep.

- Consider specialist referral for infants with abnormal breathing patterns, including persistent noisy breathing or apnoeas during sleep, particularly in the context of difficulty feeding, poor growth or delayed developmental milestones.
- Preschool-aged children with habitual snoring (three or more nights per week), visible tonsillar hypertrophy and parental concerns for OSA should be referred directly to an ENT surgeon for consideration of adenotonsillectomy and do not need to wait for polysomnography.

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