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**CME** Review

# Bedtime Problems and Night Wakings in Young Children: An Update of the Evidence



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# **EDUCATIONAL AIMS**

- To present the conceptualisation, prevalence, persistence, etiology, and impact of bedtime problems and night wakings in infants and young children
- To describe assessment methods for evaluating bedtime problems and night wakings
- To review the recent literature on the efficacy of a variety of behavioral treatment approaches for bedtime problems and night wakings

#### ARTICLE INFO

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#### SUMMARY

Bedtime problems and night wakings in infants and young children are prevalent, persistent, and associated with a variety of impairments in youth and their families. Assessment strategies include clinical interview, sleep diaries, actigraphy, and subjective measures. A number of treatment approaches with varying degrees of empirical support are available, and several novel strategies have been evaluated in recent years. Appropriate sleep scheduling and a bedtime routine are important components of any treatment program.

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#### INTRODUCTION

Difficulties with bedtime problems and night wakings in infants and young children are highly prevalent [1], present frequently in primary care settings [2], and can be quite distressing and disruptive to families. Though these types of sleep difficulties resolve without treatment in a proportion of families, the impairment in child and parent daytime functioning can be severe. In addition, a sizeable minority of children may continue to show symptoms for months or years [3]. A variety of behavioural intervention strategies for night wakings and bedtime problems have strong empirical support, and several newer approaches have been evaluated in recent years. The impact of successful treatment often goes beyond improvements in child sleep, extending to better overall child and family functioning. This paper provides an overview of conceptualisation, assessment, and treatment options, focusing on findings published since the 2006

http://dx.doi.org/10.1016/j.prrv.2014.04.011 1526-0542/© 2014 Elsevier Ltd. All rights reserved. American Academy of Sleep Medicine Review and Standards Practice Parameters papers [4,5].

# CLASSIFICATION

Under the current International Classification of Sleep Disorders, Second Edition (ICSD-2), symptoms of bedtime problems and night wakings fall into the diagnostic category of Behavioral Insomnia of Childhood (BIC). The ICSD-2 describes three types of BIC: Sleep onset association type, limit-setting type, and combined type. The third edition of the ICSD includes all three types under the broad category of "insomnia," with factors unique to paediatrics, such as the use of a parent/caregiver report (vs. selfreport), difficulties initiating sleep without parental intervention, and daytime difficulties with academics/behaviour. As all research cited in this paper was conducted prior to the recent release of the ICSD-3, we will use the ICSD-2 nosology in this paper.

## Sleep Onset Association Type:

Sleep onset association type is seen most frequently in infants and toddlers (6-36 months), and presents as difficulties initiating

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or maintaining sleep without caregiver intervention. Sleep onset associations, such as rocking or feeding an infant to sleep, are considered "negative" or problematic if they require parental intervention. Young children will fall asleep and return to sleep quickly when the sleep association is available. In the absence of the association however, sleep onset is delayed or disrupted, and night wakings may be prolonged. Falling asleep with parental presence is associated with night wakings in later years, which may explain why these types of problems tend to persist if not addressed.

#### Limit-setting Type

Limit-setting type presents more frequently in toddlers and preschoolers (2-5 years), though can also occur in older children. Criteria include bedtime stalling or refusal due to caregiver difficulty setting limits effectively. Coloumbe & Reid (2013) examined night wakings in a community sample of preschoolers and found the most common behaviours to be calling out, getting out of bed, and requests for comfort [6]. Occurring less frequently were requests to engage in an activity, reports of fears or nightmares, or instrumental requests.

## Combined Type

Combined type involves both limit-setting difficulties and sleep-onset associations. For example, a child might resist bedtime, and after a prolonged bedtime struggle ultimately falls asleep with a parent present.

#### **PREVALENCE AND PERSISTENCE**

Cross-sectional studies across a variety of cultures have consistently found 20-30% prevalence rates for bedtime problems and night wakings in community samples of infants, toddlers, and preschoolers [1,7,8]. Due to considerable overlap in bedtime problems and night wakings, individual prevalence rates are generally unknown. Recent studies in the United States [9] and around the world [10] have shown ethnic and cultural differences in the perception of difficulties falling asleep and whether children have a sleep problem.

Though sometimes conceptualised by families as normal developmental difficulties that will be "outgrown," bedtime problems and night wakings persist in many young children. Byars et al. (2012) found that 21% of children with sleep problems as infants continued to present with difficulties at age 3 [3]. Similarly, Lam et al. (2003) found that sleep problems persisted for 12% of preschoolers with identified sleep problems as infants, with recurrence for an additional 19% [9]. Others studies have also identified sleep problems in young children as predictive of sleep problems in preschool or later [10–12].

#### **ETIOLOGY**

A number of factors help predict which children are more likely to have bedtime problems and night wakings. In toddler twin pairs, genetic factors were contributory to the occurrence and stability of sleep problems[13]. Child temperament (in particular difficulties self-soothing) has also been associated with concurrent and future sleep difficulties [10,14]. Not surprisingly, children with more persistent nighttime fears are more likely to have sleep problems [15].

Parental presence at bedtime is a consistent predictor of sleep disturbance, particularly when a child falls asleep during feeding [1,7,16], except in predominantly Asian countries, where the majority of young children fall asleep with parental presence [17].

Breastfeeding often leads to increased night wakings in young infants, in part because breast milk is more quickly digested than formula. In older infants (e.g. 6-12 months), the relationship between breastfeeding and night wakings appears to be largely mediated by parental presence at sleep onset or nursing to sleep, rather than breastfeeding per se [18,19]. A later bedtime (after 9pm), caffeine usage, and a television in the bedroom have been linked to sleep disturbance across youth of all ages [1]. Finally, there is some emerging evidence that regular daytime routines are predictive of longer sleep duration in preschoolers and early school-aged children [20].

While the role of parenting cannot be disputed, it is important for practitioners to recognise the contributing child factors and the transactional nature of sleep difficulties, avoiding the unhelpful and often inaccurate assumption that parents have "caused" their child's sleep problem. Indeed, Simard et al. (2008) found prior sleep disturbance to be more predictive of future sleep difficulties than intervening parenting practices [14].

### IMPACT

Outcomes associated with sleep difficulties in young children are myriad and varied. Night wakings, bedtime problems, and insufficient sleep have been associated with childhood injuries, [8,21,22] daytime behavior difficulties, [8,23] higher BMI and likelihood of overweight [24], and reduced health-related quality of life [8]. Parents of children with sleep difficulties are more likely to have poorer physical and mental health, particularly with infant sleep problems [25]. In families of children referred to an insomnia clinic, almost half had clinically significant levels of parenting stress [26]. An experimental study examining nap deprivation in 30-36 month old children found less effective emotion regulation in sleep-restricted preschoolers [27]. Additionally, studies demonstrating improvements in family and child functioning following behavioural sleep intervention suggest that poor child sleep is at least partially causal [4]. On a societal level, childhood sleep problems are associated with additional healthcare costs [28]. Given the high prevalence, persistence, and impairment caused by night wakings and bedtime problems, assessment and treatment are of critical importance.

#### ASSESSMENT

Strategies for assessing bedtime problems and night wakings include a clinical interview, sleep diaries, objective sleep measures, and actigraphy. A polysomnogram is generally not indicated unless sleep-disordered breathing is suspected.

#### Clinical Interview

Validated as a screening tool in primary care, the BEARS measure [29] provides a helpful algorithm, assessing the domains of 1) Bedtime Issues, 2) Excessive Daytime Sleepiness, 3) Awakenings at Night, 4) Regularity and Duration of Sleep, and 5) Snoring. For sleep complaints, additional areas of assessment may include a physical exam to rule out medical difficulties impacting sleep (e.g, G.I. difficulties), an analysis of the sleep environment including any sleep onset associations, bedtime routine and processes, specific behaviours and parental response during night wakings, and morning and daytime functioning. An important rule-out is Restless Legs Syndrome, as leg discomfort at bedtime can prolong sleep onset due to discomfort. Excluding medical causes for sleep difficulty is often perceived by parents as one of the most helpful components of a sleep consultation [30].

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