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# **CHRISTMAS 2024: FOR FOREVER**

# Good nights: optimising children's health through bedtime stories

Fairy tales offer opportunities to engage with children about healthy and disordered sleep, say **Megan Thomas and colleagues** 

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Healthy sleep is a public health priority, with at least a third of children and adults reporting insufficient sleep. 12 It is essential for children's growth and development and optimal physical and mental wellbeing. Consistent bedtime routines, with a calming activity before bed, such as a bedtime story, can promote healthy sleep.3 Some traditional fairy tales and classic children's fiction that have soothed many a child to sleep may also include information about the benefits of sleep and the characteristics of sleep disorders, providing accessible and engaging ways for parents or carers, healthcare providers, and educators to discuss healthy sleep with children. In perhaps the best known fairy tale about sleep, its healing and restorative powers are illustrated by Sleeping Beauty's full recovery from a life threatening prick to her finger after a long and deep slumber.

#### **Snow White**

Snow White runs away from a wicked queen and lives with seven little men named by Walt Disney as Doc, Grumpy, Happy, Sleepy, Bashful, Sneezy, and Dopey. There are many different causes of short stature, one of the more well known being achondroplasia. People with achondroplasia commonly experience obstructive sleep apnoea, which is associated with snoring and respiratory obstruction, resulting in disrupted and poor quality sleep. It is an autosomal dominant condition, and some of the men in the story are likely to be related. Obstructive sleep apnoea is also a common cause of sleep disruption for co-sleepers, and Grumpy seems unable to sleep because of his snoring companions.

Daytime consequences of poor sleep include irritability (Grumpy), tiredness (Sleepy), and weaker social skills (Bashful). Problems with attention and word fluency are also recognised consequences of sleep deprivation and might explain Doc's speech difficulties. Sneezy might have allergies contributing to his respiratory obstruction, or perhaps the lack of sleep has lowered his immunity, making him more susceptible to respiratory disorders. Although Happy also snores, it is a gentle consistent snore in contrast to the effortful snoring of the others and therefore unlikely to be harmful.

Snow White is noted to fall into a "death-like slumber" from biting a poisoned apple. Medications are commonly used to induce sleep in children and adolescents, despite most sleep problems in these age groups being amenable to behavioural interventions. Arguably not poisons, these medications nevertheless usually induce sedation

instead of healthy restorative sleep and have many substantial adverse effects. They are also associated with death when administered deliberately or accidentally in toxic doses.

#### The Princess and the Pea

Hans Christian Andersen's princess is described as having a sleepless night after a pea was hidden underneath the 20 mattresses and 20 feather beds she laid upon to ascertain whether she was a real princess. In the morning, she forthrightly describes the discomfort she has endured but nevertheless is welcomed into the family as clearly being a princess. The princess possibly had an autism spectrum disorder, and if so elements of the story affirm neurodiversity. Autism spectrum disorder is characterised by social communication differences and restricted or repetitive behaviours. Sensory sensitivities are common, as are sleep difficulties, with insomnia (the inability to fall or stay asleep) being the most commonly reported problem.<sup>8</sup> Co-occurring conditions, medications, and possible differences in melatonin secretion further contribute to sleep problems.9

# **Goldilocks and the Three Bears**

In Flora Annie Steel's version of this classic fairy tale, a young girl wanders into a house belonging to a family of bears. After sampling their porridge and their chairs, feeling tired, she goes to find a bed to sleep in. The first two beds she tries are not comfortable for her, but the baby bear's bed is "just right," and she falls sound asleep. A key part of achieving healthy sleep is optimising environmental conditions: a comfortable bed and a room that is not too hot or too cold but "just right" and is dark and quiet is ideal. Remembering this fairy tale may also prompt the use of the BEARS screener for children's sleep problems, standing for bedtime issues, excessive daytime sleepiness, night awakenings, regularity and duration of sleep, and snoring.<sup>10</sup>

### **Peter Pan and Wendy**

Peter Pan is a young boy who lives in Neverland, a magical island where children never grow up, with the orphaned Lost Boys. Throughout J M Barrie's novel, the reader is introduced to symptoms of parasomnias (unusual and undesirable behaviours during sleep) that are common in childhood and include sleep walking, sleep talking, confusional arousals, and night terrors. During their journey from their bedroom to Neverland, the three Darling children remain conscious though their movements

## **FEATURE**

become inhibited, resembling sleep paralysis.<sup>11</sup> Peter Pan experiences frequent "painful" dreams that might reflect nightmares or night terrors. Nightmares are prevalent in approximately 85% of children and peak between 6 and 10 years of age, whereas night terrors are prevalent in 14% of children between aged 4-12 years. 12 Night terrors present as episodes of intense distress, vocalisations, and movements while partially asleep that are somewhat or completely forgotten upon awakening. Contributing factors to parasomnias are stress, separation anxiety, and sleep deprivation, which aligns with the experiences of Peter Pan and the Lost Boys, who were abandoned by their families and are fleeing the dangers of Captain Hook and his crew. Additionally, the story underscores the importance of healthy sleep for memory consolidation and optimal mood. Each night, Mrs Darling tidies up her sleeping children's memories by storing them in their proper place and leaves the happiest thoughts at the top of her children's minds for the next

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- Lim DC, Najafi A, Affii L, etalWorld Sleep Society Global Sleep Health Taskforce. The need to promote sleep health in public health agendas across the globe. *Lancet Public Health* 2023;8:-6. doi: 10.1016/S2468-2667(23)00182-2. pmid: 37777291
- Chaput JP. The integration of pediatric sleep health into public health in Canada. Sleep Med 2019;56:-8. doi: 10.1016/j.sleep.2018.06.009. pmid: 30076116
- 3 Allen SL, Howlett MD, Coulombe JA, Corkum PV. ABCs of SLEEPING: A review of the evidence behind pediatric sleep practice recommendations. Sleep Med Rev 2016;29:-14.pmid: 26551999
- 4 Harrison Y, Horne JA. Sleep deprivation affects speech. Sleep 1997;20:-7. doi: 10.1093/sleep/20.10.871. pmid: 9415947
- Prather AA, Janicki-Deverts D, Hall MH, Cohen S. Behaviorally assessed sleep and susceptibility to the common cold. Sleep 2015;38:-9. doi: 10.5665/sleep.4968. pmid: 26118561
- 6 Bock DE, Roach-Fox E, Seabrook JA, Rieder MJ, Matsui D. Sleep-promoting medications in children: physician prescribing habits in southwestern Ontario, Canada. *Sleep Med* 2016;17:-6. doi: 10.1016/j.sleep.2015.10.003. pmid: 26847974
- 7 American Psychiatric Association. The diagnostic and statistical manual of mental disorders. 5th ed text revision. 2022.
- 8 Carnett A, McLay L, Hansen S, France K, Blampied N. Sleep problems in children and adolescents with autism: type, severity and impact. *J Dev Phys Disabil* 2021;33:-91. doi: 10.1007/s10882-020-09783-5.
- 9 Martinez-Cayuelas E, Gavela-Pérez T, Rodrigo-Moreno M, etal. Sleep problems, circadian rhythms, and their relation to behavioral difficulties in children and adolescents with autism spectrum disorder. J Autism Dev Disord 2024;54:-26. doi: 10.1007/s10803-023-05934-7. pmid: 36869970
- Owens JA, Dalzell V. Use of the 'BEARS' sleep screening tool in a pediatric residents' continuity clinic: a pilot study. Sleep Med 2005;6:-9. doi: 10.1016/j.sleep.2004.07.015. pmid: 15680298
- 11 American Academy of Sleep Medicine. International classification of sleep disorders. 3rd ed. 2014
- Leung AKC, Leung AAM, Wong AHC, Hon KL. Sleep terrors: an updated review. Curr Pediatr Rev 2020;16:-82. doi: 10.2174/18756336MTAxpNDI61. pmid: 31612833