About this series

Our *Cognita Be Well Comments* series looks at nine key areas related to young people's wellbeing, providing a summary of published research in each area along with practical tips for parents. In preparing the series, we commissioned experts from University College London (UCL) to conduct a review of all published research in these areas.

Produced by Cognita's education and wellbeing team, this document incorporates the review of the importance of sleep by Dr Dagmara Dimitriou and offers tips for parents. It is also informed by the insights of sleep scientist Dr Matthew Walker, author of Why We Sleep, in his series of videos for Cognita which are available on **www.cognita.com/cognita-be-well.**

Sleep

We spend almost one third of our time asleep. Despite being in a reduced state of consciousness while sleeping, our brains are incredibly active. Sleep is critical for children's neurological and physical development, impacting their feelings, thoughts and behaviours as well as overall cognitive and physical performance.

Studies have shown a positive relationship between the length and quality of sleep in children and attention and alertness at school, in particular, in the way they memorise information, learn languages and problem-solve.

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What the evidence says:

The nature of our sleep changes considerably throughout infancy, childhood and our teenage years, as shown in the National Sleep Foundation (US) diagram on the following page. As children become teenagers, their natural sleepiness typically comes later in the evening. Similarly they tend to wake later in the morning. Meanwhile sleep problems are often amplified by the anxiety and stress that can accompany the mental and physical changes that naturally occur at this time.

Sleep and Health

A lack of sleep can adversely affect emotional health within just a few days. In younger children, this can mean more – or more intense – tantrums and/or higher anxiety levels, while older children can experience increased impatience and moodiness.

These symptoms are challenging to deal with and can distract us from considering sleep-deprivation as a contributory factor.

Thus, if you notice any concerning behavioural or emotional changes in your child, it's important to step back and look at whether their sleep patterns have changed, for example, waking more during the night or a sudden change in how long they sleep.

Poor sleep can also stimulate children's appetite for carbohydrate-rich foods, excessive amounts of which can lead to other health problems. Waking often in the night can increase the feeling of hunger, becoming part of a vicious cycle that drives obesity.

We also know that a lack of sleep impacts the immune system. After just one night of only four to five hours of sleep, there is a 70% reduction in the body's critical anticancer-fighting 'natural killer cells'. Less than 6 hours of sleep increases your risk of having a fatal heart attack or stroke in your lifetime by 200%. Finally, chronic poor sleep leads to an increased development of a toxic protein associated with Alzheimer's and dementia in later life.

Sleep and Learning

Children need sleep prior to learning in order to prepare the brain for soaking up new information and laying down new memory traces throughout the day. They also need sleep after learning in order to embed those new memories and to lay the groundwork for starting the process again the next day. Without sleep, the brain loses its capacity to make and create new memories, and its ability to process and retain information is inhibited.

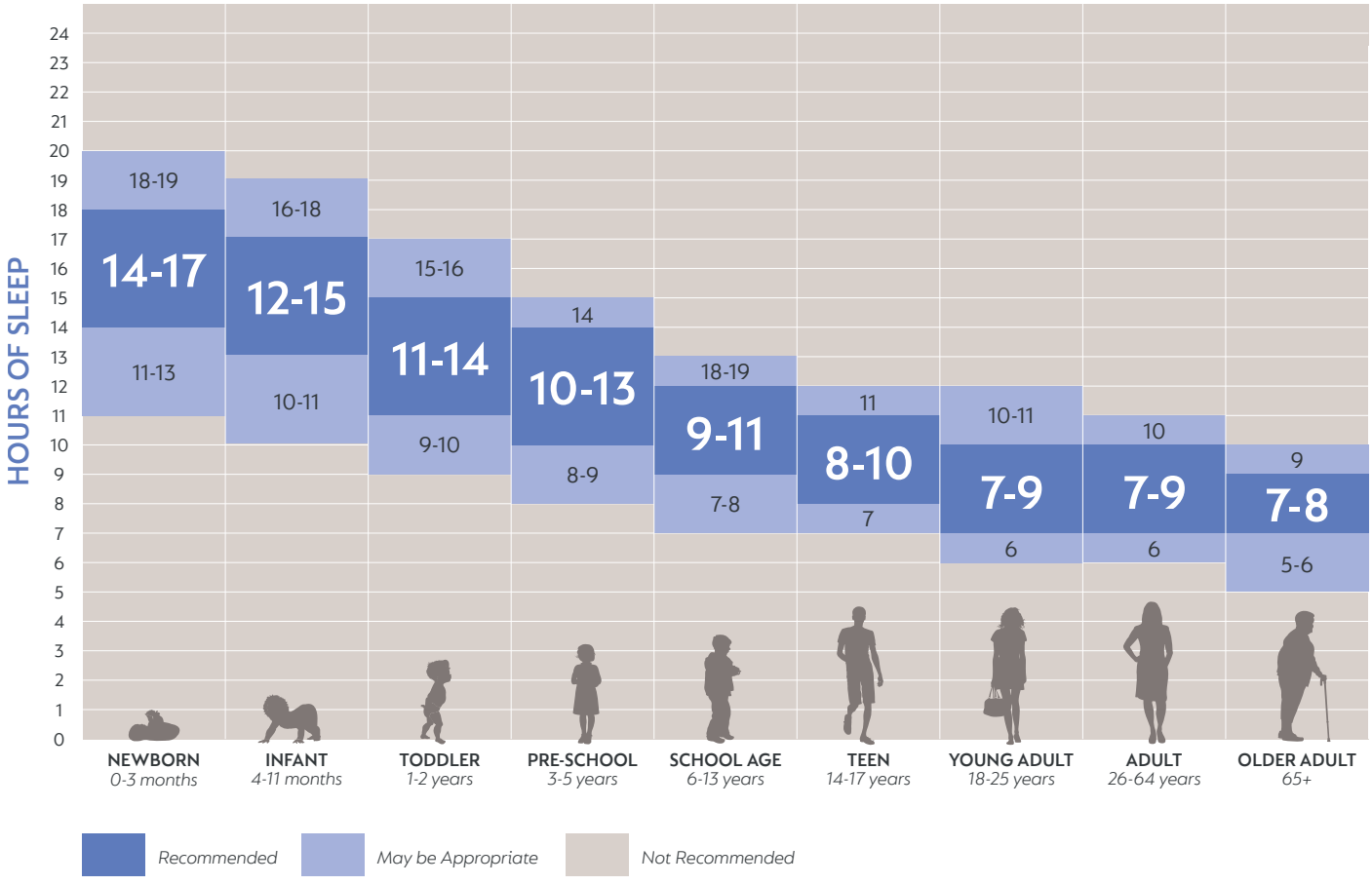
Sleep is also a factor in the brain's ability to fuse recently learned information with its entire 'back catalogue' of memories. This is key to helping children develop creative insights into solving problems that may have previously seemed impossible.

Finally, evidence cited by Dr Matthew Walker shows that after 16 hours without sleep, our brain function starts to decline – and after 19-20 hours without sleep our mental capacity is as impaired as someone who was legally drunk.

"There is no physiological system that we've been able to measure that isn't enhanced by sleep when you get it or demonstrably impaired when you don't get enough of it."

Dr Matthew Walker, author of *Why We Sleep*

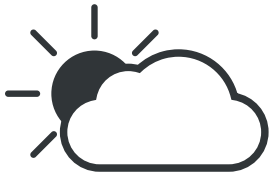
Sleep Duration Recommendations



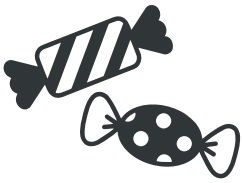
Hirshkowitz M, The National Sleep Foundation's sleep time duration recommendations: methodology and results summary, Sleep Health (2015).

Sleep

Top Tips

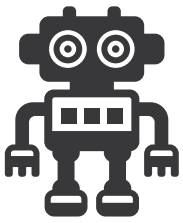


1. Ensure your child gets plenty of fresh air and daylight during the day (especially in the morning) to work in harmony with their natural circadian rhythm.

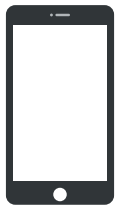


2. Limit sugary snacks and drinks, and certainly in the hour before bed.

3. Avoid caffeine after midday, and certainly in the late afternoon and evening.



4. Keep toys and distractions away from the immediate area around your child's bed.



5. Never allow tablets, laptops or mobile phones in the bedroom in the hour before bed or whilst your child is sleeping.

6. Encourage your child to have set times for going to bed, and waking up, each day.

7. Develop a sleep routine for your child to better prepare them for restful and adequate sleep.
   - Keep the bedroom temperature around 18°C.
   - Gradually lower light levels towards bedtime and keep the bedroom dark through the night.

For more resources, including our bespoke video series for parents and children with the sleep scientist Dr Matthew Walker, visit **cognita.com/cognita-be-well.**

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