

Importance of Sleep in Learning

Article contributed by Mr. Ross Dawson, Primary School Principal

The effects that sleep, and the lack of it, have on our health, growth and learning has always been an area of interest for me as a Principal. Over the years, I have seen an increase in students who come to school tired and find it difficult to concentrate, and this concerns me. For this week's VSA Insights I have interviewed Ken Wathall, a businessman, father and avid learner, who is researching the importance of sleep for his PhD and is fast becoming an authority on the subject. I know you will find this interview as fascinating and insightful as I have, and hope that it provides you with information that will help you, your child and your family strive for better sleep, health and wellness. I would like to thank Ken for taking the time to share with us his passions and views on this extremely important topic.



Could you share with us some of your background and how you became interested in studying sleep?

Over the past 20 years, I would be considered to have had a relatively busy life. I was a businessman/owner, husband, father of twins (now 20 years old), for at least half that time I was engaged in postgraduate study, I maintained an active lifestyle, including the hobby of teaching group fitness. I was one of those people (as was Bill Gates at the time) that believed that sleep was a waste of time and I certainly pushed the limits of not sleeping – my record was 3 continuous nights without a minute of sleep. This lack of appreciation for sleep ultimately led me to experience multiple periods of burnout. Nearly two years ago, I woke one day (after a good night's sleep) and decided that I wanted to change my life and become the best version of myself. Since that decision, I have started to read in depth about the science behind wellness and lifestyle choices (lifestyle medicine). One book led me to

another. I soon started to form an opinion, believing that sleep was the centre of health and an essential factor in one being their best-self. My passion for wellness and sleep continues to drive me. For the past year or so, I have been an advisor to a leading integrative medical center which combines the latest advancements in disease prevention, wellness, fitness and nutrition with individualized health coaching and advanced technologies. I have transitioned from being a poor sleeper into having almost absolute control over my sleep - to the extreme of not once needing to set an alarm to wake during this period. More recently, I have become the go-to person for wellness and specifically sleep, influencing friends in how they approach sleep, recommending literature, providing strategies and guidance on sleep and sleep-related wearable devices.

How does a lack of good sleep impact a person physically & mentally?

Human beings are the only species that intentionally deprive themselves of sleep. Scientific research has uncovered that adults require approximately eight hours of sleep in order to cognitively function, any lesser amount of sleep affects our abilities to remain alert and retain information. According to Dr Satchin Panda (in his book 'The Circadian Code'), poor or insufficient sleep leads to detrimental behavioural and biological effects on an individual, including low growth hormone, lack of attention, sleepiness, mind fog, reduction of damaged cell repair, indigestion, high blood glucose and reduction of fat burning. However, the impact of sleep on health goes beyond the short-term. New science-based sleep research has established a link between poor sleep and many lifestyle, mental health (e.g. depression and anxiety) and chronic diseases. It has been reported by the Institute of Lifestyle Medicine that 85% of chronic diseases are a result of poor lifestyle decisions. The importance of sleep cannot go unacknowledged, as it influences ones' lifestyle choices, mood and subsequent interactions with others. In essence, by sleeping well you are able to live each and every woken moment with absolute vigor and vitality.



How is sleep connected to learning?

Matthew Walker (scientist and professor of neuroscience and psychology at the University of California, Berkeley), in his book 'Why We Sleep', states that sleep increases our ability to learn, memorize and make logical decisions and choices. There are multiple stages of sleep, including deep non-REM (rapid eye movement) sleep and REM sleep. These stages repeat every 90 minutes during your sleep. Deep sleep is necessary for cementing memories and information in one's brain. REM/dream sleep assists to make connections between newly learned information and our complete bank of memories. Thus, it is not effective to pull an all-nighter and forego sleep as little to nothing would be retained. Short naps can help to cement information learned, and to catch up on any sleep debt, but one would need to ensure that these naps are taken before mid-afternoon to avoid negatively impacting the coming night's sleep.



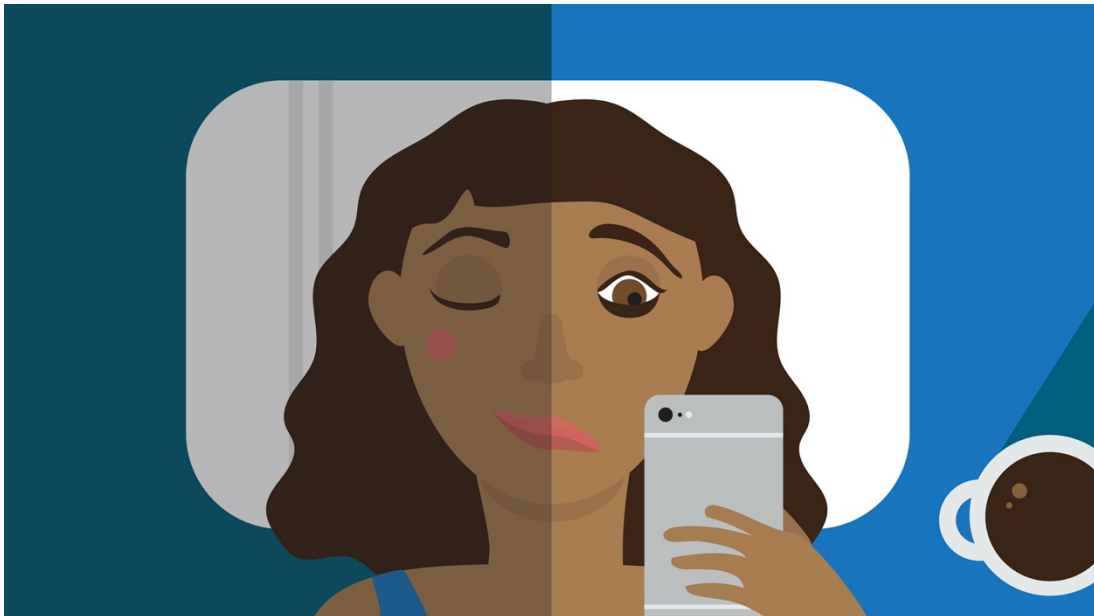
What advice would you give to parents about their children and sleep?

During our lifespan the ideal amount of sleep required per night changes as we progress through the stages of life. In his book Circadian Code, Dr Panda highlights the ideal number of hours of sleep for school-aged children (6-13 years) as 9-11 hours, teenagers (14-17 years) as 8-10 hours and adults (18-64 years) as 7-9 hours. For children and adults alike, it is important to establish good sleep hygiene practices. According to the Sleep Foundation, sleep hygiene is a variety of different practices and habits that are necessary to have good nighttime sleep quality and full daytime alertness. A few example practices for healthy sleep taken from 'Why We Sleep', include:

- Stick to a regular timing and pattern of sleep
- Exercise but avoid doing this too late in the day
- Avoid caffeine in the afternoons
- Maintain a dark, cool, gadget-free bedroom

- Avoid large meals and beverages (certainly alcohol) late at night
- Relax before bed

Teens often (due to evolutionary and societal reasons) stay up later than their parents in order to both study and interact with their peers. Unfortunately, teens are reported to be very sensitive to light. Bright lights at night may lead to a reduction in the release of melatonin (the sleep hormone) effecting the quality of sleep of the teens. Parents can assist by (a) preparing an early dinner (3-4 hours before sleep) to allow an empty stomach before bedtime and (b) provide education to their children in regards to the importance of darkness and sleep in addition to creating a sleep-friendly environment for the teens, equipped with a spotlight or lamp that does not illuminate their eyes. The addition of activating the nighttime light setting on any electronic screens being used and the wearing of light-blocking eyewear (I wear Blublox glasses) will exponentially help.



As per any effort to change elements of one's lifestyle, the support of the community around you may determine success or failure. An entire family discussing tweaks to daily routines, changing light settings, adjusting eating patterns and blacking out light in bedrooms, etc. will no doubt pay dividends. I also wear a sleep-tracking device called the Oura Ring. This is the best thing that I have found on the market but is not cheap. For those thinking of making an investment, I would warn that the Oura Ring does not make you sleep better. Before improving your sleep, you will firstly need to practice good sleep hygiene (i.e. the generalized actions to be taken). The next step would be to utilize the Oura Ring data in order to personalize your tweaking of habits and thus optimize on your quality of sleep.

Sleep well!

Ken

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Resources:

<https://www.youtube.com/watch?v=5MuIMqhT8DM> – Matthew Walker TED Talk

<https://www.youtube.com/watch?v=fwO1CX0IM-8> – Dr Chatterjee's Feel Better, Live More podcast featuring Matthew Walker

Why We Sleep (2017) – Matthew Walker's book (a must read!)

The Circadian Code (2018) – Dr Satchin Panda's book

<https://www.blublox.com/?currency=AUD> – Blublox Light blocking glasses

<https://ouraring.com/> - Sleep-tracking wearable device



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