

Sleep: The Forgotten Country

Dr. Todd Huffman, for the Eugene *Register-Guard*, 2010

Sleep is a basic drive of nature. Sufficient sleep helps us think more clearly, complete complex tasks better and more consistently, and enjoy everyday life more fully. Sleep is, in essence, food for the brain, and not enough sleep can be harmful, especially to the brains of children and adolescents, who need sleep more than do adults.

According to surveys by the National Sleep Foundation, 90% of American parents think their child is getting enough sleep. But kids themselves say otherwise: more than half of high-school students report extreme daytime sleepiness on a regular basis. A quarter of teens are falling asleep in class at least once a week. Drivers age 25 or younger cause more than half – more than 50,000 – fall-asleep traffic crashes each year in the U.S.

Half of all teens get less than seven hours of sleep on school nights. Only one in twenty teens average at least eight hours. Children and adolescents today average more than one hour less sleep per night than they did thirty years ago. And there are many costs to this lost hour.

Because children's brains are a work in progress until the age of 21, and because much of that work is done while a child is asleep, this lost hour has an impact on children much greater than it does on adults.

When hungry for sleep, the brain becomes relentless in its quest to satisfy this need. In humans, this leads to feelings of sleepiness, decreased levels of alertness or concentration, and possibly unanticipated sleep, such as in class or at the wheel.

Excessive sleepiness is also associated with reduced short-term memory and learning ability, ADHD, negative mood, inconsistent academic or job performance, poor productivity, reduced physical activity, increased eating and weight, and loss of some forms of emotional and behavioral control. Many of the hallmark characteristics of being a tweener and teen – moodiness, depression, disengagement, impulsiveness, sedentariness – oftentimes are just symptoms of chronic sleep deprivation.

There are as many causes for lost sleep as there are types of family. Over-scheduling of extracurricular activities, lax bedtimes, unrestricted caffeinated beverages, televisions and computers and cell phones in the bedroom – they all contribute. And almost all these causes relate to parenting.

American parents need to wake to the alarm sounding that this nation's children are sleep deprived. Chronic sleepiness has been shown to impair children's IQ as much as lead poisoning. This impairment can, in fact, be permanent, and cannot always be slept off like some bad hangover.

During sleep, the brain shifts what it learned that day to more efficient storage regions of the brain. The more you learned during the day, the more you need to sleep at night.

Each stage of sleep plays its own unique role in capturing memories. While the brain does synthesize some memories during the day, they're solidified during sleep – new inferences and associations are drawn, leading to insights the next day and thereafter.

Children's sleep is much different than adult sleep. Children spend more than 40% of their time asleep in the slow-wave stage, ten times more than older adults spend. Slow-wave sleep is a deep sleep without dreams, during which long-term learning of vocabulary words, times tables, historical dates, and all other factual minutiae are processed.

The area of the brain where this slow-wave processing occurs is the hippocampus, which is also the area where positive and neutral memories get processed. Negative memories, on the other hand, are processed by the amygdala.

Sleep deprivation hits the hippocampus harder than the amygdala. Therefore, sleep-deprived people fail to recall pleasant memories, yet recall gloomy memories just fine. Little wonder that chronic lack of sleep leads to depressed mood and irritability. And sleepiness and depressed mood increases the likelihood that teens will turn to caffeine and nicotine, as well as alcohol and illicit drugs.

American kids and teens need their lost hour back. Study after study has revealed that students who return to a normal night's sleep on a regular basis report higher levels of motivation and lower levels of depression. Their attention spans improve, as does their memory, their grades, and their performance on standardized intelligence tests.

Restoring a normal night's sleep improves mood, reduces impulsiveness, increases energy and activity, and improves relationships with family and peers. Teenage car accidents drop by one-quarter to one-half as hours of sleep increase. In short, a regular good night's sleep keeps kids healthy, happy, and doing their best.

And it reduces their risk of being overweight or obese. Sleep loss increases the hormone ghrelin, which signals hunger, and decreases the hormone leptin, which suppresses appetite. Sleep loss also elevates the stress hormone, cortisol, which stimulates your body to make fat.

Time and again, studies done around the world find that, on average, children who sleep less are fatter than children who sleep more. Young kids who get less than eight hours of sleep nightly are three times likely to be obese than kids who average ten or more hours of sleep. Among middle-school and high-school students, the odds of obesity are nearly doubled for each hour of lost sleep.

Kids who lose sleep are awake more to eat more. They are depressed more, and thus eat more. They often consume excessive quantities of high-calorie caffeinated "energy"

drinks. And they're too tired to exercise, and are therefore more likely to spend their non-school hours in front of a screen, munching away.

Make sufficient sleep a family priority. Get the TV and cell phone out of the child's bedroom. Turn off all screens at least 30 minutes before bedtime. Encourage reading before bed. Allow no caffeinated beverages after dinner.

Set and stick to a regular bedtime: between 8 and 8:30 for elementary-age students, 8:30 and 9 for middle-schoolers, and 10 and 10:30 for high-schoolers. Elementary students need 10 to 11 hours of sleep each night, middle-schoolers 9 to 10 hours, and high-schoolers 8 to 9 hours.

Our kids are not getting a good night's rest. Let's set things right.