Sleeping Healthy

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Why do we sleep? This question has been in many scientists’ minds for centuries, but no one really knows the answer for it. Some believe that we sleep in order to give our body “a chance to recuperate from the day’s activities” (The science of sleep, n.d.), but the eight hours of sleeping only saves 50kCal of energy, which is about the same amount of energy in a piece of toast. However, we need to sleep because it is essential to keep our body functioning regularly.

The lack of regular sleep increases the risk of suffering cancer. It is because irregular sleeping habits alter the balance of at least two hormones that influence cancer cells, melatonin, and hydrocortisone. Melatonin is believed to protect against cancer by affecting levels of other hormones, such as estrogen. “Melatonin can prevent tumor cells from growing—it’s cancer-protective,” said Eva S. Schernhammer of Harvard Medical School, who has conducted a series of studies on volunteers in sleep laboratories (Stein, 2005). Several later studies found that people who work at night and sleep irregularly appear unusually prone to breast and colon cancer. The researchers investigating the possible explanation for this association found that the amount of time a person is exposed to light at night reduces levels of the hormone melatonin. “If you are exposed to light at night, on average you will produce less melatonin, increasing your cancer risk” (Stein, 2005). The other hormone is called hydrocortisone. Hydrocortisone helps to regulate immune system activity, including the release of certain “natural killer” cells that help the body fights cancer. Hydrocortisone levels typically peak at dawn, after hours of sleep, and decline throughout the day. The night shift workers are more likely to have a “shifted cortisol rhythm,” in which their hydrocortisone levels peak in the afternoon. The research shows this is one of the reasons why they have higher rates of breast cancer than the women who sleep normal hours.

The second benefit is that sleeping relieves your body of daily stresses. There is a deep, complicated relationship between sleep and our brain. Why we see bad dreams when we are over-stressed is one excellent example. Hydrocortisone, one of the hormones that I mentioned above as a cancer-causing hormone whose function is influenced by the sleeping behavior, is also a so-called “stress” hormone (Kirchheimer, 2003). During times of anxiety, this may also play a role in causing us to feel stress as well as in the development and worsening of cancer and other conditions. We need to get enough sleep in order to cope with stress more effectively and start a new day with a refreshed mind. However, the relation between sleeping and stress is very complex. As I said, the lack of sleep decreases the amount of time our body heals from daily stress. On the other hand, the stress prevents us from sleeping properly.

The last one is that sleeping helps you learn things better. Learning is, in its most basic sense, a matter of forming memories. Sleeping plays an important role in constructing long-term memories. Here is how it works: The first two hours of sleeping are spent in deep sleep, during which certain brain chemicals become used up, thus allowing information that has been gathered during the day to flow out of the hippocampus, the memory center of the brain, and into the cortex, the outer covering of the brain where long-term memories are stored. Over the next hours the cortex sorts through the information it has received, distributing it to various locations and networks. This process requires at least four hours strengthening the bonds between networks. The last two hours the brain shuts down the connection to the hippocampus and runs through the data it has stored over the previous hours. This process is also important to learning, as it reinforces and strengthens the many connections between nerve cells that make up the new memory (Johnson, n.d.). This study tells you that getting the proper amount of sleep helps you learn and memorize better than staying awake all-night, stuffing your brain with the new information.

In conclusion, sleeping brings many benefits to our body: it decreases our risk of getting cancer, relieves the body from our daily stresses, and helps us learn something better by turning the information we got into long-term memories. The NHK survey shows that the average sleeping time of Japanese people has decreased about an hour compared to forty years ago (NHK research, n.d.). Although our lives became better because of restless, hardworking people, we should not forget what enough sleep and rest brings to our body, something that technology can’t provide.

REFERENCES CITED

Iyashi seikatsu[Healing life]. (n.d.). Retrieved October 15, 2007, from http://www.nouko.com/index.html

Johnson, G. B. (n.d.). On science. [Txtwriter Inc.].Retrieved October 15, 2007, from http://www.txtwriter.com/Onscience/Articles/sleep.html

Kirchheimer, K. (2003, October 1). How sleep affects cancer.[WebMD]. Retrieved October 15, 2007, from http://www.webmd.com/cancer/news/20031001/ how-sleep-affects-cancer

The National Sleep Foundation. (2003, April 8). Stress, anxiety and sleep. Washington D.C. [About.com] Retrieved October 15, 2007, from http://sleepdisorders.about.com/cs/stressandanxiety/a/nsfanxiety.htm

NHK research about life time of citizens. (n.d.). Retrieved October15, 2007, from http://www.nhk.or.jp/bunken/research/life/life\_20060210.pdf (pg.38-39)

The science of sleep. (n.d.). [BBC: Science and Nature]. Retrieved October 15, 2007, from http://www.bbc.co.uk/science/humanbody/sleep/articles/whatissleep.shtml

Stein, R. (2005, October 9). Scientists finding out what losing sleep does to a body. [Washingtonpost.com]. Retrieved October 15, 2007, from http://www.washingtonpost.com/wp-dyn/content/article/2005/10/08/AR2005100801405.html

Tennen, M. (2007, June). Can lack of sleep make you gain weight?[Health A to Z]. Retrieved October 15, 2007, from http://www.healthatoz.com/healthatoz/ Atoz/common/standard/transform.jsp?requestURI=/healthatoz/Atoz/dc/caz/ment/sled/alert08022005.jsp