It has been a busy semester for you. You are trying your best in classes and attending all the fun social events. Everything seems to be going well, but your body is exhausted and you have noticed a few extra pounds appearing over the past few months. You may be doing all the right things but overlooking a crucial element that is affecting all aspects of health, Sleep! As the modern world gets busier, it gets harder to find time for sleep.

Why do we need sleep? It is a time when the body can recharge after the long hours and activity of the day. Without sleep, it is nearly impossible for us to learn and retain memories. Sleep deprivation also affects our mood by making us more irritable, and it can eventually lead to anxiety and depression.\(^1\) Sleep and nutritional status also go hand in hand. Studies have shown that the risk for obesity is significantly greater in individuals that get fewer hours of sleep. In general, those who sleep for less than 6 hours had the highest Body Mass Index (BMI), and those who slept for 9 hours or more have the lowest BMIs.\(^2\) Long story short: as sleep decreases, your waist will increase.

One reason that sleep affects weight is that it alters your diet. Studies show that adults who do not get enough sleep consume more of their calories from fats and snack food.\(^2\) One study found that after just four hours of sleep, people consumed an average of 14% more calories when compared to their normal diet. The increase in calories came mainly from carbohydrate-rich snack foods.\(^3\) A restful night of sleep may help you say no to excessive unhealthy snacking.

Lack of sleep also affects your hormones. Leptin is a hormone that makes you feel full, and ghrelin is a hormone that increases the feeling of being hungry. Studies have found that when the body does not get enough sleep, leptin levels decrease and ghrelin levels increase.\(^2,3\) This means that your brain will keep sending hunger signals when you are sleep deprived and it is harder to become satisfied after a meal. Leptin also increases energy expenditure, so low levels make it harder to motivate yourself to exercise.\(^3\) The physical feeling of being tired after a poor night’s sleep will contribute to lack of exercise. Sleeping will restore the body and give you the energy to hit the gym.

Sleep also helps the body regulate the body’s use of digested sugars. After eating a meal, the body breaks down food and the sugars, specifically glucose, and releases it into the blood stream. Insulin released from your pancreas tells your cells to take in the glucose from the blood. The glucose is used as an energy source. Cell resistance to insulin, meaning the cells cannot affectively take in the glucose from the blood, results as a response to consuming too much sugar. This happens because too much sugar means an overload of insulin produced, and your cells just can’t keep up. Sleep affects both the production of insulin and cell sensitivity to insulin. One study found that after four days of restricted sleep, blood glucose (sugar) levels were higher than normal and insulin levels were lower. This means there is too much glucose in the blood stream, which is not being taken in by cells for work. This imbalance is associated with an increased appetite, especially for calorie dense foods that are rich in carbohydrates. Examples of these types of food are cakes, cookies, muffins, and other bakery favorites. The sleep restriction resulted in an average increase of 350-500 calories a day for young, normal-weight adults.\(^4\)
The production of insulin also leads to the production of leptin. This means that if your fat cells are insulin resistant, your body will make less leptin. As described above, decreased levels of leptin mean an increase in food consumption, decreased activity, and weight gain.²,³,⁴

So how much sleep do we need? Teenagers should be getting 9-10 hours per night, and adults should be getting between 7-8 hours per night.⁵

There are varieties of reasons why people are not getting enough sleep. Some factors that may negatively affect your sleep cycle are things like caffeine, cigarettes, and some medications. Playing around on your phone at night or having bright lights in your room keeps your eyes stimulated, making it harder to relax and fall asleep. Some people also suffer from medical conditions such as sleep apnea that make it difficult to get a good night’s rest. In this case, you should talk to your doctor about ways to deal with your condition or possible medications suitable to you. It is important to make time for sleep just like any other activity. Try to manage your schedule so that you do not have to pull an all-nighter study session for a big exam.

**Techniques to get more shut eye...**

- Exercise during the day
- Keep the lights off
- Don’t watch television right before bed
  - Instead, try reading or even listening to a book on tape!
- Don’t bring your phone into bed
- Limit caffeine consumption to the morning
- No cigarettes
- Make your bed a personal sanctuary that you will always feel comfortable in
- Consume some herbal tea before bed
  - Chamomile is a good option for relaxation

Apply some of these techniques and watch those pounds drop!

**References**