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IRV MAYERS

Director of Pulmonary Medicine, U of A

If your eyelids are getting heavy more often than just at bedtime or you're tossing and turning for what seems like hours, there are a number of things you can try to maximize your productivity and energy:

- Be consistent. Because you have an internal “biological clock,” even if you manage to arrange your schedule to have a couple sweet days where class begins at 12:30pm, the best tactic is to keep the same wake-up time as those 9am starts.
- Make your bedroom as dark as possible. This aids production of melatonin, a hormone in the brain that induces sleep.
- Maintain a relaxing routine before bed that reduces stress on body and mind, such as listening to music or doing some light reading.
- Avoid drinking more than two caffeinated beverages in a day, particularly later on, as it can affect your sleep for up to 16 hours. Nicotine is also a stimulant that can affect shut-eye.
- If you're having difficulty dozing off, don't focus on the fact that you're not sleeping. Move the daunting red numbers of the clock out of your sightline. Don't be frustrated lying bored in the dark, but instead get up and do something relaxing for a short while before heading back to bed.
- The students taking advantage of the couch space in SUB also have the right idea to cope with sleep deprivation: napping. “Nap strategically during the day, say if you have a spare,” Pawluk advises. “For 20 minutes or so, a short nap tends to be restorative for most people.”

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their late teens and early 20s need about nine hours, [and] most of them are getting nowhere near that,” he says.

Burning the midnight oil

But the reason university students aren't getting those precious nine hours isn't just the keg parties—it's the killer exams and papers. Where there are final exams to be written, there are red-eyed, caffeine-addicted students at their desks poring over notes and textbooks.

What some students don't realize is that all the cramming in the world won't make you a calculus genius in time for tomorrow's test.

A recent study conducted at St Lawrence University in Canton, NY reveals that, on average, students who pull all-nighters have slightly lower GPAs than those who plan ahead. The study, which was published in January's issue of *Behavioral Sleep Medicine*, shows that well-rested students who have never pulled an all-nighter average a 3.1, while those who stay up all night rank a 2.9.

Those who tend to spend more time sleeping the night before an exam are the minority, as 60 per cent of students who participated in the study said they'd pulled at least one all-nighter in their college career.

It's studies like this that reinforce Pawluk's view on all-night cramming.

“People try to sacrifice their sleep with the hope that by somehow studying late into the night, they'll be able to retain what they've learned,” he says. “But there's absolutely no way they would have [retained] that learning any time lengthier than to remember it for the exam.”

Pawluk cautions against studying late into the night because it follows the “law of diminishing returns”: memory and concentration become harder to maintain, both while studying and the morning after with an exam on the desk in front of you.

“[All-night study sessions] get progressively less effective because as you get sleep-deprived, your brain doesn't adapt to new situations as well,” Mayers adds. “If you're suddenly presented with a novel problem, you can't deal with it like you can when you're well rested.”

That feeling of being so tired that you're dozing off for a couple seconds before jerking awake is particularly counter-productive because the composition of the mind changes when you fall asleep. Those two-second naps are called micro-sleeps.

“No one can remember the moment they fall asleep,” Mayers explains. “You can remember getting sleepy, but not when you fall asleep.”

“That's because you get retrograde amnesia. [...] It's a physical change in your brain chemis-

try. If you're trying to memorize stuff and you're having these micro-sleeps, you'll wipe out the minute or two you just tried to memorize.”

Aside from workloads keeping you awake, a number of disorders can make restoration difficult even when the opportunity to lay your head on the pillow finally presents itself.

Problems such as sleep apnea fool people into thinking they're achieving a full night's rest when they really aren't. Sleep is disrupted hundreds of times a night when the throat muscles relax and block the airway; however, people with the condition aren't conscious to realize the problem. Mayers says this will only occur more frequently as Canadians' average weight increases.

Although apnea occurs in all age-ranges, a more frequent sleep disorder that students tend to have is insomnia.

“Some of the common causes of insomnia [are] depression, anxiety, and condition insomnia, where people begin to focus on the fact they're not sleeping. Their bedroom becomes their torture chamber,” Pawluk says. “I think that's something many students will face at some point in their careers.”

Depression and anxiety can affect sleep in the opposite way as well, Pawluk adds, especially in younger people. They may sleep and stay in bed far longer than their bodies require.

But if any of these afflictions or any others are causing disruptive rest or daytime sleepiness, in most cases the detriments can be rectified.

“Most sleep disorders, we can identify and treat the problem,” Pawluk points out.

Not all sleep is created equal

University students have other daytime activities aside from studying that contribute to sleep deprivation. Factors such as alcohol, eating habits, and exercise also affect one's sleep periods.

Consuming alcohol before bed, for example, disturbs sleep later on in the night, and eating too close to bedtime can cause more frequent awakenings. In terms of brain food, protein has been shown to promote alertness to some extent, while foods high in carbohydrates, like pasta, promote sleepiness.

In terms of fitness, Pawluk warns against those late-night jogs.

“Exercise can promote sleep as long as you exercise earlier in the evening. [...] If it's strenuous, it can be alerting, but if it's something like stretching or yoga, not a problem; it's something that can help you wind down.”

As for those getting behind the wheel after their all-night studying sessions, they're better off taking the bus. A study at Flinders University in Australia tracked concentration and

coordination of a group of undergraduates with varying levels of sleep deprivation to blood-alcohol content. Performance after 17 hours without sleep coincided with a 0.05 per cent blood-alcohol level, while 24 hours with no rest matched a BA level of 0.08 per cent.

As Pawluk puts it, “If you're awake for 24 hours straight, you're performing the same as you would be if you were drunk.”

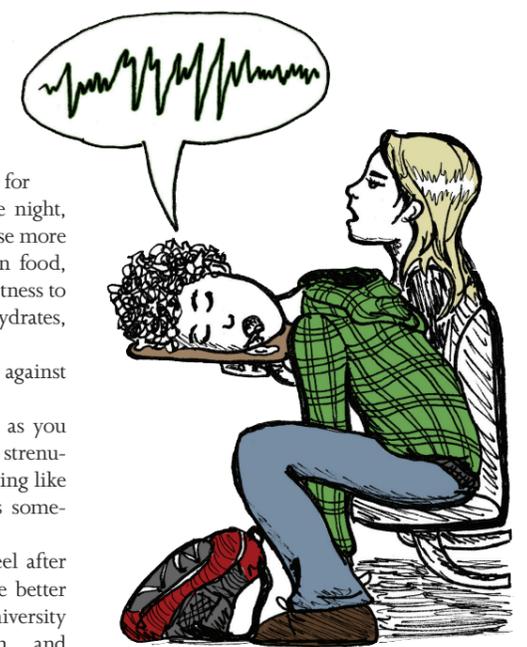
You're probably not in much better shape writing a midterm under the same influence, either.

“When your brain is sleep-deprived, you are not as sharp, no question,” Mayers adds. “I don't think most people would want to sit an exam after having a couple of drinks; that's about what you're doing.”

Still, the concept of staying up until the wee hours to complete that term paper or cram for that final seems essential to university life, regardless of the studies showing that this practice can, in fact, be detrimental. Despite the insane schedules that students cope with, sleep isn't something that can be swept under the bed with your biology textbook. Ask anyone who's spent a night glued to their laptop as they struggle to finish a term paper: the words tend to blur at around 3am.

Everything else aside, Mayers insists that the importance of sleep can't be ignored when considering overall quality of life.

“As a society, we live on the edge of not enough sleep because we've got so much to do. You need to find a balance that's healthy for you.”



nextweek

Finally got a chance to sleep in, but you've only had pudding pops and a Twinkie for breakfast? You'd best think twice about skipping out on the most important meal of the day. Next Thursday, the Gateway reports on student nutrition and eating habits and how they affect our daily lives.