

*Only two weeks til  
Reading Break!*

*On Monday, the  
moon will be [92% full](#).*

# BIOBEAT

*Sept. 28, 2020*

*Random fact: On  
Oct 1st 1982, the  
first CD player  
went on sale for  
only \$2200...*

## *5 Study Tips from the Expert*

Last week, I talked about the importance of finding a group of people to make it easier to learn what you need to learn. This week, I talked to one of MRU's learning experts, Dr. Michelle Yeo, who works in the Academic Development Centre. She has spent years studying what works in the classroom and what is most helpful for you when you're learning complex, new material. She put together a list of some of the best methods for studying which I am now passing along to you. Try some of these things, don't assume that you should already know how to study.

Dr. Michelle Yeo:

There's a lot we know about effective studying – the problem is that much of it is counter-intuitive. Some of these may seem obvious, while others may come as a bit of a shock. Here are a few of my top tips for studying to help you actually learn while you're logging those hours!

1. Cramming doesn't work. I'm sorry - it's true. The problem with cramming just before an exam is your brain just stuffs all of that info into your short-term memory. To really learn it, short, regular study sessions are waaaay more effective. Trust me.

2. Sleep. An exhausted brain can't learn. While you're at it, eat a vegetable.



*Downtown YYC just  
after sunrise on  
Sept 25, 2020.*

3. Move. There's plenty of evidence that exercise before or after studying helps. Also you'll be less stressed and healthier.

4. Rehearse difficult concepts. If there's something tricky you are trying to learn, practice explaining it to yourself while you chop vegetables (see what I did there?). Explain it again to your mom or your dog without looking at your notes. Do it until it's easy.

5. Practice retrieval. There are lots of steps to learning. You need to understand it and attach it to something else you know – in other words, get it into your brain. But you also need to be able to get it out again – this is the retrieval part. This is why regular quizzing is a good idea. If it's not part of the course, do it yourself or with a study buddy.

## NEW IN RESEARCH THIS WEEK...

### *Astrocytes regulate the drive to sleep*

There's a lot we don't know about sleep - like why we do it and how the brain regulates it. Most sleep studies focus on neurons but a recent [study](#) found that astrocytes, a type of glial cell, in the frontal cortex regulate the natural drive to sleep. In astrocytes, calcium levels (which indicate activity) are highest at the start of sleep, when the need to sleep is greatest, and increased more with sleep deprivation. They work separately from neurons to regulate sleep and are key to sleep homeostasis.

### *Want to improve your memory? Exercise.*

As per the advice above, a [study](#) this week showed that one session of exercise, even for just 15 minutes, improves performance on a motor learning memory test. And the more intense the exercise, the greater the improvement. Exercise correlated to an increase in endocannabinoids in the hippocampus - the brain region important in forming new memories. Endocannabinoids enhance synaptic plasticity which is needed for memory formation. This is important for students but also for Alzheimer's patients.

*Looks like nice weather this week, get outside and exercise. Do it  
for your memory.*