

The Science of Exercise

This year the Pulse Generator is focussing on the scientific evidence and basis for exercise and health. Throughout the next few months we will be producing a number of articles, events and tools that you can use to improve your health and wellbeing. Stay tuned for many great topics and activities.

PERSONAL TRAINING

Personal training is available at all Pulse Generator locations. Our personal trainers are all certified and have years of experience training people of all abilities and physical activity experience.

Contact Pulsegen@ahs.ca if you are interested in personal training.



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The Science of Napping

Sleep is key to any health and fitness strategy, with at a minimum we want to have 7 hours of sleep but 8 hours is considered ideal. However, this is not always possible, either due family commitments, work (either from upcoming deadlines or things like shift work), to just staying up to late watching Netflix. We can have a hard time managing our sleep schedule. Napping can be an excellent way to offset your lack of sleep and help fill those gaps and while naps can be useful they should not be seen as a replacement for a restful 7-8 hours' sleep that go through all 4 stages of sleep.

So what are these stages of sleep? Phase 1 is the transition phase of sleep last 2-5 minutes, it is a medium frequency medium amplitude sleep phase with some similarity to REM sleep. Once we move out of Phase 1 we move into Phase 2 which is true unconsciousness, it plays an important role in alertness. Here the body and the mind start to rest. Finally once you move out of phase 2 you will go into phase 3 and 4 here you are in your deep sleep, here is the stage where you sleep through noises. As well cortisol will decrease and human growth hormone will go up when, during this phase your body is repairing itself. Then you hit REM sleep.

First when it comes to napping we should be aware of a few ground rules. First try to fix your sleep, if you are playing catch up with your sleep on weekends with naps or extra long sleeps, you should look to try and work on fixing your sleep during the week.

Second on the weekends you should get up within an hour or 2 of your regular wake up time. If you are sleeping well past this you are again messing with your sleep schedule.

Third try to give yourself a 3 hour window before bed to be awake, your wake up from a nap should not end with in that 3 hour window. Finally naps need to be in increments, meaning you should avoid napping for too long so that you can avoid what is called sleep inertia, which is this feeling after a nap of feeling groggy. What we want are sleep windows of:

20 minutes- which will help with alertness and energy. Here we go into light Non Rapid Eye Movement Sleep (NREM)

60 minutes – Which will help with remember facts and memory. Here we are getting into slow wave or deep sleep cycles.

90 minutes – Which will help with emotional and procedural memory, which will help with tasks like riding a bike. A 90 minute nap allows you to go through both sleep waves both the deep and shallow sleep waves.

When you nap can also have an effect on you. Depending on when you wake your Rem and Slow Wave Sleep can overlap, So if you wake up at 7am the perfect nap time is around 1-3 pm to get the most benefits, however, anytime can be beneficial. Also remember you want to place yourself in a comfortable environment for napping, avoid caffeine and alcohol before napping, stay in a dark room, with little noise and a temperature of about 19-20 degrees