

My Sleep Hygiene and Daily Routine

Sleep hygiene involves a variety of different practices and habits that are necessary to have a good nighttime sleep AND full daytime alertness¹. It is important for good physical and mental health; but it is particularly important as we age. I'm almost 63 years old. Although I have been blessed with the ability to fall asleep easily, but as I age, it is becoming more difficult to stay asleep.

The consequences of not getting enough sleep are much greater than I had imagined. There are strong links between insufficient sleep and obesity; diabetes type 2; cardiovascular disease like hypertension; mood disorders; and immune problems. The rate of breast cancer was 30% higher in women who do shift work, and also increases the incidence of prostate cancer in men². (Getting enough sleep but Circadian Rhythms upset) It may even lead to Alzheimer's disease³ due to insufficient flushing of neural toxins (beta-amyloids, etc.) that build up in the brain.

As we understand it, the brain does several things during sleep: REM (rapid eye movement, dream sleep) is important for memory (especially short term) and mood. Deep sleep (slow wave sleep) is when the brain flushes away the metabolic, neural toxins that build up during the day, and usually occurs earlier in the sleep cycle. Generally, we need 6.5 hours of sleep each night... and for me that means 7.5 hours in bed. Naps are IN ADDITION to the 6.5 hours.

I got a lot of information by participating in the Vitality Study Research Program of the Vancouver Coastal Research Institute and UBC (a recovering stroke patient study). I processed much of the information from presentations by Dr. Glenn Landry (Post-Doctoral Research Fellow, at the Aging, Mobility, and Cognitive Neuroscience Research Lab at UBC⁴). His current research involves circadian rhythms, sleep, aging, and cognition. He is interested in determining whether age-related changes in sleep duration, efficiency, and architecture (deep sleep/REM sleep/light sleep/wakefulness) contribute to or accelerate cognitive decline in the elderly. Glenn's goal is to identify daily habits that are capable of delaying cognitive decline in the elderly, with the objective of improving quality of life, productivity, and extending capacity for independent living.

With age we become less sensitive to the time cues that help set an appropriate, productive circadian rhythm (daily waking and sleeping cycle). These cues are mostly exposure to sunlight, activity (either physical or mentally activity), and food.

¹ <https://sleepfoundation.org/sleep-topics/sleep-hygiene> . Accessed 15 September 2017.

² "Lack of Sleep Increases Your Risk of Some Cancers." <https://sleepfoundation.org/sleep-news/lack-sleep-increases-your-risk-some-cancers> . Accessed 3 October 2017.

³ 19 September 2016. "Lack of Sleep May Lead to Alzheimer's". <http://www.alzheimers.net/2013-10-29/lack-of-sleep-may-cause-alzheimers/> . Accessed 01 October 2017.

⁴ <http://cogmob.rehab.med.ubc.ca/people> . Accessed 01 October 2017.

I have integrated the recommendations for diet, from the Dietician (Devika Sharma⁵) and the Medical Weight Management Centre⁶ Seminars I have attended. These recommendations involve timing and amount of protein and fibre intake during the day. At the same time, I try to integrate antioxidants and good proportions of omega 3/omega 6 fatty acids. My rule of thumb is when eating veggies and fruit: Go for the colours purple/blue, orange, and dark green.

With that being said, here are some of the recommendations that I gleaned from the presentations that I have incorporated into my day. The goal is to use strong, high-intensity, consistent, coordinated time cues to tell our body when to work and when to sleep. My actual timing follows each recommendation in parentheses.

Stay in bed and avoid light until you want to get up. If necessary I use nighttime “blindners” or a sleep (eye) mask especially during the summers in Vancouver when the days are long. (06h00)

At the beginning of the day, seek out bright sunlight or use an indoor lamp.

- We need to set up Circadian Rhythm for a 12-hour day. I use a 06h00 onset of daytime and an 18h00 (6pm) onset of nighttime.
- An intensity of 10,000 lux white light or 500 lux of the “right” colour blue light is required.
- I checked out the Philips GoLITE BLU series.⁷ They give the right spectral colour of light at the correct intensity for the therapeutic effect.
- During the day when outside, I wear a pair of inexpensive safety glasses. These DOT-certified lenses are made of plastic that allows the blue light to the eyes, preventing melatonin (sleepiness) production. They also completely block the UV-B rays that are harmful to the eyes. The ones from Home Depot cost under \$20, and come with cloth carrying case and retainer strap. They were strongly recommended by Dr. Landry. (Note: wear polarizing, sunglasses when you need to block high levels of reflected light *e.g.* over water and snow; and driving into the sun. Otherwise NO SUNGLASSES in Vancouver!)

Eat a balanced breakfast. I eat the breakfast within one hour of waking. (06h30)

⁵ Devika Sharma, Registered Dietician, Fraser Health Authority can be found at: <http://www.onemorebite.ca/> and <https://www.facebook.com/onemorebite.dietitian/>

⁶ <https://www.medweight.ca/>

⁷ <https://www.philips.ca/c-m-pe/light-therapy/> . Accessed 02 October 2017.

I try to take in up to 20 g protein and 10 g fibre at breakfast. It is about 500 Cal, but carries me easily for the start of the day. Some days, though, I eat considerably less. I make sure to include both soluble and insoluble fibre sources.

I do $\frac{3}{4}$ C 0% fat Greek yogurt + $\frac{1}{3}$ C raw almonds + 1 C Kamut Krisp cereal + 1 T marmalade or other fruit jam. (15 g protein, 4.5 g fibre) During blueberry season in BC, I will incorporate 1 C fresh blueberries or $\frac{1}{2}$ C dark purple concord or Coronation grapes into my diet. If I have a physically strenuous day ahead (gardening), I add $\frac{1}{2}$ sliced avocado on whole grain toast and a glass of kefir.

Tell your body to “start the day”. We have to challenge ourselves physically or mentally. I go to the gym three days a week. On the other days I do some housekeeping activities, or balancing the books. (08h00)

Do some chair exercises or walk every hour. I got a set of excellent exercises from the Vitality Research Study at Vancouver General Hospital: what I call “Stroke Boot Camp”. I do chair exercises to stretch the hips, quads, and hamstrings, with my core muscles engaged. I have my Fitbit set to remind me to move every hour from 07h00 to 15h00 (3pm). After 15h00 (3 pm) I am likely to nap and do not want to be disturbed.

Eat a snack or meal every 3-4 hours. Sometimes I do not feel like a 600 Cal breakfast. On those days, I will eat $\frac{1}{2}$ of a high protein energy bar, or $\frac{1}{2}$ avocado (good soluble fibre!) on toasted sprouted wheat bread. Alternatively, I like some hummus with carrots and orange sweet peppers. The goal is for me to keep your protein and fibre intake good. (09h30)

Eat a balanced lunch with exposure to bright light. The same light recommendations for the beginning of the day apply here. I try to include seasonal fresh fruit here, and a tiny sweet! Sometimes I go for a walk outside after lunch. The latter is good because it keeps me active. (12h00)

Take a nap. The sweet spot for napping based on natural rhythms is 15h00-16h00 (3-4pm). I make sure the nap is not longer than 2 hours. A 1.5-hour nap is ideal because it allows for a natural sleep cycle of deep sleep and REM sleep. I find that I wake up naturally after about 1-hour 15 minutes. Lulls in energy are usually due to carbohydrate crashes or to lack of deep, slow-brain wave sleep. (15h00).

Get more bright light, post nap. After the light, I have to challenge the body physically or mentally. This is a good time for me to head to the gym or combine light housekeeping with cooking dinner. (16h15)

Eat a balanced dinner with bright light. Ideally this should be 4-5 hours before bedtime; about 12 hours after breakfast. Alternatively, during the summer months, this is a good time for me to take a walk outside! (18h30)

Balanced dinner should include ½ the plate as vegetables; protein serving the same as the size of a deck of cards. I really try not to eat/drink food with caffeine or alcohol with/after dinner. (This is no problem for me, because I usually drink less than 1 glass of wine per month!)

Challenge the body. I use the time to study and research things, or sort through the many piles of filing etc. at home.

Begin to transition to dimmer light and non-challenging activities. This includes leisure reading, watching television, and noodling around on the computer. I frequently have friends and family over for dinner, so post dinner socializing works great. If I feel the need to snack at this time (bad habit), I keep it to a piece of fruit or glass or fruit-flavoured kefir. OK, sometimes I have some dark (>70% cocoa) chocolate.

Block blue light from the eyes. Blue light suppresses melatonin (sleep-inducing brain chemical)⁸ and thrown our circadian rhythm “out of whack”⁹. Television and computer screens have intense blue colour light, and using them before bedtime extends our Circadian Day and delays falling asleep. So, I use “blue-blocking” amber-coloured glasses. (20h30)

Consumer Reports reported on the efficacy of blue blocking glasses¹⁰. So we decided to order the winner of the Consumer Reports testing: the Uvex Skyper amber tinted S1933x safety eyewear¹¹. All effective blue-blocking lenses should block direct and indirect blue light with wrap around lenses, or fit over normal eyeglasses. Sure, I look like a geek, but I fall asleep quickly, and stay asleep well!

Begin bedtime routine. For me this involves the usual teeth brushing and personal hygiene, but also maybe a warm shower. The warm shower induces

⁸ J. Schmerler. “Q&A: Why is Blue Light before Bedtime Bad for Sleep?” Scientific American, September 2015: <https://www.scientificamerican.com/article/q-a-why-is-blue-light-before-bedtime-bad-for-sleep/> . Accessed 01 October 2017.

⁹ Harvard Health Publishing, Harvard Medical School. Harvard Health Letter: “Blue Light Has a Dark Side”. https://www.health.harvard.edu/staying-healthy/blue-light-has-a-dark-side?utm_source=delivra&utm_medium=email&utm_campaign=GB20171018-Sleep&utm_id=668234&dlv-ga-memberid=37269343&mid=37269343&ml=668234 . Accessed 28 October 2017.

¹⁰ <https://www.consumerreports.org/eyeglass-stores/3-blue-blockers-put-to-the-test/> . Accessed 01 October 2017.

¹¹ <https://www.uvex.us/en/products/general%20purpose%20eyewear/uvex-skyper> . Accessed 15 September 2017.

the body to cool its core temperatures, and is conducive to falling asleep. I will also do some leisure reading in bed, with the amber glasses in place. (21h00)

The night lights around the home must be red. I changed mine from LED lights (blueish) to red Christmas tree lights. Bryon keeps a flashlight by the bed, and it, too, is a red light! Perfect!

I not take any sleep medication, because they affect sleep patterns (slow wave/REM sleep etc.) We want melatonin level to naturally start to rise when in bed, peak during the night, and wear off by morning. I think that exogenous melatonin (pills) may cause levels to peak too early, resulting in nighttime waking.

With that being said, here is a typical sleep routine for me as recorded by the Fitbit. I turned the lights out and stopped reading at 23h45 (11:45pm) Note how quickly I fall asleep. The awakening at 05h00 was for a bathroom break, and thyroid / blood pressure pills.

