



manufacturing Safety Alliance of BC

Dr. Glenn F. Landry answered questions from the Webinar | Shift Away From Workplace Fatigue in follow-up to registrant submissions. We are pleased to provide the answers for both the attendees and those who have an interest in this important topic.

Q: In simplifying the science, you talked about “the day’s waste” and “washing the brain.” What actually is that “waste product” in the brain?

A: They are metabolites that collect around neurons throughout the brain, which when allowed to accumulate can choke off synaptic transmission for those neurons leading to cell death. One example is amyloid, a key contributing factor driving dementia risk.

Q: One person shared that they wake up 2 times on average each night. Because of bathroom breaks, baby crying, or street noise etc. Although they can fall back to sleep quickly, does this break in sleep make them more prone to the diseases that you mentioned (dementia, type 2 diabetes...)?

Certainly, fragmentation of sleep architecture can result in poor sleep health and accelerate aging. That’s why it is so important to use objective measures of sleep health status. Wearable tech options, providing insight into sleep stages, have never been more accessible for consumers. Fitbit is best in class in terms of sleep staging.

Q: Does taking 100mg of Seroquel—or another pharmaceutical or supplement—provide rejuvenating sleep?

A: The short answer is NO. Taking drugs or supplements designed to impact the neurotransmitter systems involved in sleep will increase time spent in one stage of sleep (e.g., Slow Wave or Deep Sleep, REM, or Light Sleep), at the expense of other stages of sleep. Rather than attempting to “hack” the system to get better sleep using drugs, we recommend: (1) building a routine, predictable sleep window; (2) protecting that sleep window by managing circadian time cues (i.e., light, mealtimes, and physical activity) during the day and at night when you can’t sleep; and (3) allow your sleep accountant (i.e., your natural, internally generated physiological processes) to determine your sleep debt and properly balance the books each night. We were born with the ability to get the sleep we need, but in today’s society, many of us have lost that ability by turning our nights into days and days into nights, which disrupts circadian regulation.

Q: You showed charts related to how various drugs impact a person’s sleep, do you have similar charts for tea and coffee?

A: Yes. Any drug or supplement that impacts the neurotransmitter systems driving Wake vs. Sleep architecture will have an impact on sleep staging. Caffeinated drinks, such as tea or coffee, will fragment sleep architecture resulting in decreased time spent in Deep (i.e., Slow Wave Sleep) and REM Sleep.

Q: Do other fitness watches/trackers besides fitbit offer a sleep program? For example, the Apple or Galaxy Watch?

A: There are many consumer devices available, but currently, the Fitbit is best in class in terms of providing coachable data from Sleep Stages. I say this based on years of experience coaching clients. I do not have financial interest in any wearable tech. In fact, my goal is to be device agnostic.

Q: Regarding what you shared about having a consistent schedule, is it correct to think that a constant night shift would allow a worker to manage their sleep far better than a swing shift would?

A: Great question! The answer depends on the shift system to a degree, but truthfully, the most impactful factor is knowing how to take the “circadian shifting” out of the shift system. That’s why we developed “Surviving Shift Work”, our online training program (think Netflix for sleep health).

Q: Does dreaming typically take place in REM sleep?

A: Yes, what we experience as dreaming is confined to REM sleep, but we do dream in other stages... it’s just different.

Q: How much deep sleep does a person need? And does this change with age?

A: Our sleep need, in terms of sleep staging (i.e., Deep, Light, and REM Sleep), varies from night to night based on the type of day we’ve had. No two days are the same... some days are physically strenuous, others may involve a lot of new learning, and some can be stressful. Sleep debt is defined by our previous sleep-wake history combined with the type of day we’ve had. That’s why it is best to build and protect a routine, predictable sleep window and allow our sleep accountant to figure out how best to use that sleep window to balance the books. Having said that, here’s a breakdown for Elite Sleep (i.e., Performance Enhancing Sleep; PES):

- (1) 90-minutes of Deep occurring predominantly in the 1st half of the sleep window;
- (2) 120-minutes of REM occurring predominantly in the 2nd half of the sleep window;
- (3) 4-hours of Light Sleep distributed across the entire sleep window with an emphasis on light versus deep in the back half.

Once we reach our 30’s, sleep need does not decrease. An older adult need just as much sleep as a middle-aged adult. Unfortunately, sleep health changes as a normal course of aging, but these changes are not healthy. As I mentioned earlier, we are born with the

ability to get the sleep we need. We just train that ability out of our system with the way we currently live our lives.

Q: We're often told that naps are bad? Where does that belief come from and does this contradict what you shared about taking naps?

A: Timing is everything! Incorrectly timed naps (i.e., the wrong time of day) or taking a nap that is too long (i.e., longer than 90-minutes) can disrupt nighttime sleep. However, properly timed naps synced with the afternoon lull (i.e., a circadian-gated nap window designed to allow us to catch up on lost sleep; generally, between 1pm and 4pm), actually promote brain health without disrupting nighttime sleep.

Q: If a person practices biphasic sleep, does that impact their ability to get the deep sleep or “cleansing” sleep that one needs for learning, retention, and risk assessment?

A: Biphasic sleep alters sleep architecture and over time can have a negative impact on human health and performance.

Q: One person shared that they have found that Chinese acupuncture has helped them improve their sleep. What are your thoughts on that?

A: We believe strongly in a team-based care approach to improved health and performance.

Q: Is there a way employers can assess the risk of fatigue with their current employees and what would that look like? Are there tools or methodologies that can be used?

A: Yes, indeed! Fatigue Risk Management Systems (FRMS) are critical in any workplace utilizing 24-hour operations. Please see the attached ACOEM Guidance Statement on Fatigue Risk Management in the Workplace. Our Surviving Shift Work online training program was specifically designed to meet or exceed the training and education component of an FRMS.

Q: Are there ways for a supervisor to identify or determine if their workers are fatigued? What can be some potentially telltale signs of fatigue?

A: Please see my response to the question above.

Do you have any general advice for managers to help them manage this risk? Especially since fatigue is often the result of behaviours and things that happen outside of the workplace.

A: Please see my response to the question above.