

“The Physiological Connections Between Diet & Sleep and Associated Risks for Developing Chronic Diseases”

Webinar Questions Answered by Marie-Pierre St-Onge, PhD, FAHA, CCSH

Please note that these are brief answers to complex questions and are not meant as medical advice. Please seek medical advice for more complete information.

- Was type and duration of exercise indicated in the sleep study? For example, were the people who only got 4 hours of sleep exercising?

Participants had access to a gym in the building of the research unit. Very few used it and physical activity was not different between conditions.

- Were any studies completed with subjects in a "swing shift" mode - i.e., that their sleep patterns were not traditional, and they worked at night and slept in daytime? How did that impact hormones? How did that impact intake and activity levels?

Some studies don't seem to indicate greater food intake on night shift workdays compared to non-night shift work in shift workers. However, studies show that there is reduced insulin sensitivity and overall greater cardiovascular disease risk associated with this pattern. This seems to indicate that timing of food intake is highly relevant for chronic disease risk. In terms of physical activity, there's not much in terms of intervention studies. One observational study noted that, in the first 5 months of a new night shift work job, workers have reduction in light physical activity with concomitant increase in sedentary time, but no change in vigorous activity.

- Can you specify what does it mean to refer to "food weight"?

Weight of food in grams.

- I have a patient who says he does best since childhood with 4-5 hours of sleep and feels awful when he sleeps 7 hours. Is it possible some people are wired to not need as much sleep, and still have less risk of heart disease?

Some people may feel fine with fewer hours of sleep. There's no research in these people specifically. However, all evidence points to those reporting <6 h of sleep per night having a higher risk of heart disease. This person may feel worse on 7 h of sleep initially but, if continued, would adjust and likely feel better.

- Are the same findings on weight and cardiovascular health seen in pediatric patients?

Yes.

- Are there any recent studies on older adults age 55+?

We have published data on the impact of sleep restriction on blood pressure in pre- and post-menopausal women. We showed that, in postmenopausal women, 24-h systolic blood pressure was higher after 6 weeks of sleep restriction (-1.5 h/night) compared to sustained adequate sleep. Blood pressure was recorded every 30 minutes throughout the day and night. I'm not aware of any other study in older adults.

- Many of my elderly patients nap throughout the day, does this have a negative or positive impact on sleep quality, nutrition, etc.?

Overall, napping is associated with increased cardiovascular disease risk. It's preferable to consolidate sleep at night. That said, our population data in the US is not very strong when it comes to capturing information on napping behaviors.

- Does intermittent fasting affect sleep?

None of the studies that I've come across have suggested benefits/harms on sleep from intermittent fasting.

- What are your recommendations for adolescents with poor sleep quality?

Adolescents should turn off screens 1-2 h before bedtime. This is difficult, of course, with school work/homework but if they can arrange their studies to reduce screen time right before bed (maybe read from a book), that would be helpful. Sticking to a consistent bedtime schedule would also be good.

- Any recommendations for dietary changes to help with insomnia?

There are studies suggesting that following a Mediterranean diet can help reduce the risk of developing insomnia and is associated with better sleep quality. Not eating close to bedtime and choosing lower sugar, higher fiber foods throughout the day would be beneficial. However, someone with clinical, chronic insomnia, should seek treatment from a sleep health specialist.

- Can magnesium supplementation improve sleep and/or help people stay asleep?

There is a recent meta-analysis suggesting improvement in time to fall asleep with magnesium supplementation, but studies are low-quality and only 3 studies with 151 older adults were included. One population study in the US reported that magnesium intake (from foods and supplements) tended to be associated with higher quality sleep and associated with lower likelihood to report short sleep. A more recent provided a nutritional blend that included magnesium and noted better sleep in young adults. I would recommend magnesium-rich foods like nuts and seeds to include in the diet.

- Do you recommend 6 PM as a good time for last meal in the setting of weight loss regimen?

I would recommend ~3-4 hours before bedtime as preferred last meal. Studies show that reducing the eating window (time restricted eating) to 8-10 h/day is effective for weight loss. Often, no distinction on when this window is set is provided. From metabolic standpoint, I would suggest anchoring the eating window to early in the day.

- What are your thoughts on other foods or supplements other than melatonin, like turmeric or magnesium, on sleep quality or falling asleep?

See question above for magnesium. For turmeric, I would not recommend supplements. I prefer suggesting flavoring foods with turmeric. The studies on turmeric have been done in animals, not humans.

- Regarding the role of CHO in production of melatonin - to your knowledge, are there studies that look at the degree of impact a low CHO diet affects this melatonin production? Specifically, very low CHO diets as in the case with Keto?

I have not seen studies that evaluate the impact on melatonin.

- Any advice on Melatonin? Should it be used? And if so, should it be limited and not for long-term use?

I don't recommend melatonin supplements. They're regulated as dietary supplements in the U.S. and therefore not very strictly monitored. The American Academy of Sleep Medicine does not recommend its use for chronic insomnia and it's not so useful for shift workers either. Melatonin can be useful to ease jetlag but should be used for a few days.

- Why can melatonin make you sleep less?

Melatonin is used to reset circadian rhythms; it should not make someone sleep less.

- Is there a recommend time of day to consume foods that promote healthy sleep such consuming them throughout the day or 4-6 hours before bedtime?

I like to think of foods to promote healthy sleep as foods that should be consumed throughout the day. Based on metabolism, I would advocate eating lower glycemic index foods rather than higher glycemic index foods later in the day and lower fat intakes later in the day.

- Any thoughts on using tart cherry juice for a sleep aide?

There are several good studies on tart cherry juice. I would endorse giving it a try but also consuming a higher fruit & vegetable containing diet and higher fiber intakes.