

Sleep and Nutrition

Health and well-being are made up of many different factors; nutrition, hydration, physical activity, social interaction, and even sleep to name a few. When life gets busy and time is running short, it's easy to sacrifice quality sleep to complete other tasks in the day. Chronic sleep deprivation can contribute to hormonal disruptions and has been associated with renal disease, cardiovascular disease, obesity, diabetes, increased risk of stroke, and poor mental health.

Sleep and nutrition are intricately connected. A diet lacking in nutrient-density can affect sleep quality. The same is true for not getting enough sleep each night, as this can lead to increased food cravings, and intake of less nutritive foods throughout the day. Both diet quality and sleep hygiene are important to consider when aiming to optimize health.

Sleep is an essential component to overall health. The general recommendation for adults is to aim for 7-9 hours of sleep each night. There are two stages of the sleep cycle, REM (rapid eye movement) and non-REM. These cycles occur in approximately 90-minute intervals. Non-REM sleep comprises a majority of the time you are asleep and promotes deep physical restoration of the body; tissue repair, muscle growth, and strengthening of the immune system. REM sleep stimulates your brain and is crucial for brain health by supporting memory, learning, and mood changes.

Overconsuming foods high in added sugar, salt, and fat content may be a result of inadequate sleep. Research suggests that disinhibited eating behaviors may be influenced by a lack of rest. Poor sleep quality can affect the hormones that

regulate appetite and insulin sensitivity. Ghrelin and leptin are the hormones that stimulate the feelings of “hunger” and “fullness” respectively. Research suggests that lack of sleep can lead to increased levels of ghrelin (the “hunger” hormone) which may lead to a dysregulation of appetite throughout the day and increase cravings for less nutrient-dense foods.



Alternatively, research suggests that a diet high in added sugar and fat content can contribute to poor sleep quality. When sleep time is less than optimal, this can lead to increased feelings of grogginess throughout the day and lead to an overall lower total energy expenditure (TEE). Feeling chronically tired may leave you feeling less inclined to be physically active throughout the day. It is also not uncommon to overcompensate stressful stimuli with intake of less nutritious foods when feeling extreme fatigue. Research suggests that aiming for a minimum of 7 hours of sleep may lead to an overall decrease in appetite and less intake of foods high in sugar and salt.



Diet and Sleep

A diet that incorporates a variety of lean protein, unsaturated fat, whole grains, and whole fruits and vegetables can provide your body with the nutrients it needs to support quality sleep and leave you feeling energized throughout the day. Try focusing on foods that contain tryptophan, melatonin, and magnesium to support sleep. Aim to consume your meals at consistent times each day and avoid consuming a large meal too close to bedtime. Limiting intake of caffeine after noon each day can also support sleep hygiene.

Key Nutrients for Sleep:

- **Tryptophan** – turkey, chicken, eggs, dairy, pumpkin seeds, oats
- **Melatonin** – tart cherries, pistachios, walnuts, sardines, eggs, bananas
- **Magnesium** – almonds, pumpkin seeds, leafy greens (spinach/kale), legumes, whole grains, avocado, bananas, potatoes

Top Sleep Tips:

- Establish a sleep schedule – go to bed/wake up at the same time each evening and morning
- Limit large meals too close to bedtime - if you are hungry, consider a small, light snack high in magnesium or melatonin
- Avoid caffeine late in the day
- Aim to get 30 minutes of sunlight each day
- Limit long naps, especially close to bedtime
- Limit strenuous exercise and physical activity before bed
- Limit electronics and bright light in the evening as this can interfere with melatonin production
- Create a comfortable sleep environment – a dark, cool, and quiet bedroom

References:

National Heart, Lung, and Blood Institute. (2022, March 24). *How sleep works: Why is sleep important?* National Institutes of Health. <https://www.nhlbi.nih.gov/health/sleep/why-sleep-important>

Schmid, S. M., Hallschmid, M., Jauch-Chara, K., Born, J., & Schultes, B. (2008). A single night of sleep deprivation increases ghrelin levels and feelings of hunger in normal-weight healthy men. *Journal of Sleep Research*, 17(3), 331–334. <https://doi.org/10.1111/j.1365-2869.2008.00662.x>

St-Onge, M.-P., Roberts, A., Shechter, A., & Choudhury, A. R. (2016). Sleep duration and quality: Impact on lifestyle behaviors and cardiometabolic health. *Obesity Reviews*, 17(9), 849–859. <https://doi.org/10.1111/obr.12403>

Zhao, M., Tuo, H., Wang, S., & Zhao, L. (2020). The effects of dietary nutrition on sleep and sleep disorders. *Mediators of Inflammation*, 2020, Article 3142874. <https://doi.org/10.1155/2020/3142874>

Would you like to work with a Registered Dietitian?

To schedule an appointment, please obtain a referral for **Medical Nutrition Therapy** and contact:
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