

Nutritional Strategies for Optimal Physician Performance

Some of the negative effects of sleep deprivation due to shiftwork or long work hours can be mitigated by deliberate modifications in hydration and nutrition. Try incorporating some of the following strategies into your daily life.

1. **Keep Hydrated** to reduce fatigue and sleepiness, improve mood, concentration, short-term memory, long-term memory, reflexes, and visual ability.¹ Hydration can also improve sleep quality among those with existing respiratory disorders.²
 - a. Aim for *at least* 6 glasses of plain water a day.⁴
 - b. Use your urine color as a way of gauging your hydration status (lemonade color: hydrated, apple juice color: need to drink more fluids).
 - i. When dehydrated, you can use oral hydration salts for quick hydration.
 - c. In order to overcome dehydration without frequent restroom visits :
 - i. Drink small amounts of fluids frequently throughout the day.
 - ii. Consume fruits and vegetables as they contain large amounts of water that is gradually released during digestion.
 - d. Drink about 250-500 ml of water during your nightshifts to reduce fatigue and improve your energy levels and mood.⁵
 - e. Despite containing caffeine, tea and coffee count towards your daily fluid intake requirements.³
2. **Use caffeine strategically** – During periods of sleep deprivation and nightshift works, caffeine can improve reaction times, reduce error rates, increase alertness and improve mood.
 - a. Given that caffeine takes about 60 to 90 minutes to reach its peak effects, you can drink coffee or tea right before taking a short nap (caff-nap) to benefit from the combined alerting effects of caffeine and nap. You can also use caffeine to reduce grogginess after taking a nap or when waking up outside of your normal daily routine.^{6,7}
 - b. Coffee is better choice for tasks that involve physical activity, attention-switching and short-term alertness, whereas tea, in particular green tea, is a better choice for tasks that require concentration and sustained attention.¹¹
 - c. The optimal alerting effects of caffeine can last about 3 hours.
 - d. During nightshifts, consume regular tea or coffee at the beginning of your shift.
 - e. Avoid caffeine for at least 5 hours prior to your bedtime or daytime recovery sleep, as it can result in increased sleep latency, decreased sleep duration, and less restorative sleep.⁷⁻¹⁰
3. **Pay attention to timing and composition of your meals**
 - a. Eat a high protein meal shortly after waking, and a high carbohydrate meal 4 hours before bedtime to help with alertness during work and better sleep quality at bedtime.¹²

- i. Consuming certain fruits, such as grapes, kiwifruits or tart cherry juice, in the evening is associated with better sleep outcomes and healthier sleep patterns.^{13,14}
- ii. Avoid eating meals, snacks, caffeinated products, chocolate and alcohol within 4 hours of sleeping. If you have to eat before sleeping, opt for a smoothie or liquid meal that is easy to digest.
- b. Add one fruit and one vegetable to your existing diet to improve your sense of well-being.¹⁵
- c. For optimal metabolic health, distribute your food intake between sunrise and sunset, and abstain from eating outside of these set times.¹⁶
- d. On weeks that you are not eating well, take a broad-spectrum vitamin and mineral supplement every other day. Choose supplements that have a USP or GMP certification.

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