SLEEP WELL TO WIN: SLEEP & NUTRITION TACTICS FOR BETTER PERFORMANCE

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Optimal sleep is critical for health and is considered one of the most potent performance enhancers available, and it's free. During sleep, many processes take place including repairing and rebuilding muscle, and the pruning and forming of new memories. For an athlete, sub-optimal sleep can lead to impaired mood, shorter time to exhaustion, poor nutrition choices, and greater injury risk. Dr. Amy Bender from the University of Calgary discusses the importance of making sure athletes get sufficient quantity, quality and timing of sleep.

Quantity: Although sleep need is individual, the recommendation of sleep for adults is 7-9h of nightly sleep with adolescents needing around 8-10 hours.[1] The sleep need of an athlete is likely higher due to the physical and cognitive demands of the sport. Some elite athletes report between 10-12hrs per day. An athlete should think in terms of weekly sleep need. Set a goal for the amount of nightly sleep and multiply by 7 to get the average weekly sleep. For example, if an athlete's goal is 8h per night, his or her weekly goal would be 56h. If he or she has a poor night's sleep, s/he can always try to make it up across the week by going to bed early or taking a nap during the day.

Quality: Typically, elite athletes have poorer sleep than a control group of non-athletes.[2] There are many potential reasons for this including hyperarousal, irregular schedules, travel and jet lag, pain, rehydrating and fueling, and substances such as alcohol and caffeine use. Nutrition is a target area to help improve the quality of sleep. A diet higher in fiber has been shown to increase deep sleep (where growth hormone is released), whereas high amounts of sugar and fat can cause sleep disturbance.[3] Tart cherry juice is a promising emerging intervention to naturally increase melatonin which can help improve sleep quantity and quality. Caffeine is widely consumed and is an effective performance enhancing tool, but recent research found the effectiveness may depend upon how you metabolize caffeine. Those who were slow metabolizers of caffeine performed worse while using caffeine.[4] Furthermore, the impact on subsequent sleep in athletes has shown detrimental effects including 4 out of 20 (20%) rugby players who "pulled an all-nighter" following caffeine consumption after an evening Super Rugby game.[5]

Timing: The timing of sleep is important because humans are diurnal and should typically be awake during the day and asleep at night. Chronotype is the biological preference to be more of a "night owl" or "morning lark" and is dependent on many factors. Around 15% of the population are morning chronotypes ("lark"), 15% are evening chronotypes ("owls") and 70% fall in-between.[6] But our chronotype can change across the lifespan with the peak in "night owls" occurring at age 20. This is important when factoring in early morning training times. Research has shown that athletes tend to be morning types, but those who are evening types tend to have more sleep problems.[2]

What can you do when working with athletes?

1. Educate and emphasize the importance of sleep. Put it in terms of how sleep affects performance so athletes will listen.
2. Sleep screen and monitor athlete sleep. Use tools such as the Athlete Sleep Screening Questionnaire[7] to flag athletes with sleep problems and the Athlete Sleep Behavior Questionnaire[8] to monitor sleep behaviors on a more frequent basis. Beware of sleep trackers that have not been validated.
3. Bank sleep. Tell athletes to get more sleep about a week or two leading into an important competition. This will relieve any sleep debt and help them perform better even if they get a poor night's sleep prior to competition.
4. Bedtime routine. Athletes can't just flip a switch and expect to fall asleep as soon as they hit the pillow. It takes time for athletes to turn off their thoughts and unwind. Give athletes ideas to incorporate into their bedtime routine such as reading a paper book, stretching, breathing exercises, and writing a to-do list.
5. Nap. This is an area that not many athletes are taking advantage of and have been shown to outperform caffeine on certain tasks. Institute nap time. Naps should be primarily short ~20 minutes so that you don't get into the deeper stages of sleep. Longer naps of ~70-110 minutes can be utilized when the athlete has a longer sleep opportunity and ideally would like to wake up naturally after a completed sleep cycle.

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