



## METRIFIT FACT SHEET: SLEEP AND THE ATHLETE



*“Asking athletes to play on minimal sleep is the same as asking them to “play with one hand tied behind their back ...It’s making them do something we know degrades their reaction time, their ability to take in their training, to get the most benefit out of it. They spend all this time practicing but never get to sleep”*

This quote from Dr Charles Czeisler, the director of the Division of Sleep Medicine at Harvard, highlights the fact that sleep is one of the key ingredients in the process of recovery that helps make an athlete a success. Many experts now agree that sleep is just as important for an athlete’s program as training and nutrition. Given that in sport the difference between success and failure often comes down to fractions of a second or millimeters, the benefit of proper sleep and recovery can be crucial.

### WHY IS SLEEP IMPORTANT?

In sport the ability to process information and react quickly is essential while athletes need to have high levels of focus and motivation. Lack of adequate sleep will result in these functions being impaired. When athletes fail to sleep enough there can be a decrease in glucose metabolism which fuels the brain and the body for mental and physical performance. Sleep helps athletes reduce the risk of sickness by keeping their immune function strong. A lack of sleep can see the body unable to produce the adequate amount of testosterone which allows athletes to build muscle and gain training effect from difficult workouts. Brain and Central Nervous System functioning is at an optimal level when well rested and the brain and the central nervous system play the most significant role in optimal physical performance.

### HOW MUCH SLEEP IS REQUIRED?

It is recommended by experts that adults should get between seven and nine hours of sleep, while adolescents need in the region of nine or ten hours. Due to varying needs depending on the individual, the advice is to calculate your own requirements by experimenting over a few weeks. The recommendation of eight hours of sleep for humans is not recent. Before any scientific studies on sleep, there was "common knowledge" that sufficient sleep was critical to functions of daily life. We now understand that elite athletes, training multiple times per day need even more sleep to overcome the increased levels of stress on body systems.



The Human Performance Project advises many Olympic, NCAA and Professional Teams that sleep recommendation for athletes training at this level is 9 hours and 15 minutes every night. It is likely that you are getting the right amount of sleep if you fall asleep within 15-20 minutes of going to bed and wake up without an alarm. However, if you get to sleep immediately on going to bed, and still require an alarm to wake up, then you are probably sleep deprived. The good news for most recreational athletes is that just one sleepless night is not necessarily associated with any negative effects on performance. So, don't worry if you toss and turn the night before a big competition.



- Make sleep a priority in your training schedule.
- Increase your sleep time several weeks before a major competition
- Keep a consistent sleep schedule. Wake up at the same time on the weekends as you do weekdays
- If eating a large meal at night, try to eat it about three hours before bedtime
- Avoid caffeine and alcohol, as both can lead to less restful sleep
- Develop healthy ways to manage stress
- Exercise should take place earlier in the day, no later than four hours before bedtime
- Nap if feeling drowsy, but for no longer than 30 minutes



## HOW METRIFIT USES SLEEP

As with most things involving training and studying, the idea of ‘prevention is better than cure’ is important and being able to deal with sleep deprivation before it becomes a major factor would be a great benefit to students coaches, tutors and parents. Part of our daily questionnaire in Metrifit asks athletes about their sleep quality and their sleep duration. It is important to have insight on both of these as optimum sleep duration can vary between individuals. What we look for is a change / deviation from normal sleep patterns and also co-relation between sleep and other important factors such as mood, health, energy levels and stress. Keeping track of these key factors and how they influence each other is a core part of athlete monitoring within [Metrifit](#).

## REFERENCES

[Mystery of what sleep does to our brains may finally be solved](#) | New Scientist  
[Effects of Sleep Extension on Athletic Performance](#) | Sleep Research Society  
[The role of a short post-lunch nap in improving cognitive, motor, and sprint performance in participants with partial sleep deprivation](#)  
[Sleep disorders common in athletes, but easily fixable](#) | University of East Finland

[Monitoring sleep is invaluable for a coach](#)  
[Focus on sleep cycles can benefit athletes](#)  
[Tips for improving your sleep](#)  
[The benefits of sleep for elite athletes](#)  
[Can sleep improve your athletic performance](#)

Research has shown that while sleep disorders are common in all groups in society, they occur more frequently among elite athletes.

Given that this a factor that has the potential to prevent an athlete reaching their full potential, there is good news from a [study](#) conducted at the University of Eastern Finland which concluded that measures can be taken to improve sleep quality.

The study saw athletes who suffered from notable sleeping disorders were referred to a sleep specialist for an examination and an individualized treatment plan. In many cases, issues were described as significant, but with guidance these difficulties were greatly reduced in the short and long term.

## INTERESTING STUDIES ON SLEEP

Recent studies that examine the effectiveness of sleep extensions are very significant when it comes to understanding the real value of sleep to an athlete.

For example Cheri Mah of the [Stanford Sleep Disorders Clinic](#) has concluded that sleep is “**a significant factor in achieving peak athletic performance**”, and that athletes can be hindered by building up ‘sleep debt’. Research studies have shown that the negative effects of sleep debt can be counteracted by a combination of naps and overnight recovery sleep.

One of the best illustrations of the benefit of sleep comes from Cheri Mah’s [study](#) of the Stanford University’s male basketball team who witnessed improved performances in terms of speed and accuracy after a sleep extension period.

[Waterhouse et al \(2007\)](#) illustrate that following a period of partial sleep deprivation, a 30 minute nap will increase speed and alertness compared to no nap.

In ‘[Sleep and Recovery](#)’, John Underwood and Keara White point out that mental performance (thinking) and physical performance have been directly related to sleep, while the article gives a comprehensive overview of the key role sleep has in relation to training, training effect, recovery and performance.