

The 41st Wink

Better Sleep For Life

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YOUTH ATHLETES AND SLEEP



How Much Sleep Does a Young Athlete Need?

The benefits of a good night's sleep are widely celebrated. The average adult needs between seven and nine hours to give the body and brain time to rest and replenish. Growing children and teenagers need considerably more, and for young athletes, who physically exert themselves on a regular basis, sleep is even more essential.

Juvenile athletes are not only dealing with the regular demands of adolescence, such as puberty and academic studies, but they are also undertaking challenging training schedules and competitions. Therefore, it stands to reason that young athletes need more sleep than the average child or teen. But it's not all about topping up energy levels and remaining alert, studies also indicate that even when we are sleeping soundly, we are actually learning and improving our motor skills.

Skilled Motor Learning as We Sleep

The most dramatic time of skilled motor learning in any human's life occurs in the first years after birth. As we advance from crawling to walking, we observe a rapid stage 2 Non-REM sleep development (dreamless sleep that promotes memory consolidation).

We continue to grow and mature, relying on that particular sleep stage to acquire and maintain new motor skills throughout our life.

During stage two Non-REM sleep there are sudden spikes in oscillatory brain activity – these are known as sleep spindles. The more sleep spindles we obtain (especially during the last two hours of an eight-to-ten-hour sleep) the faster, and more accurate we are in mastering those all-important motor skills.

There have been numerous scientific studies to investigate the relationship between sleep and the motor skills of junior, amateur, and elite athletes across a range of sports, including football and tennis. The results indicate that the human brain continues to improve motor skill memories even in the absence of any further physical practice. In the book, *Why We Sleep*, renowned scientist and professor of neuroscience and psychology, Matthew Walker discusses his research of this concept in depth.

Walker talks of an experiment, carried out with the help of his mentor and friend, Robert Stickgold. The pair asked a group of right-handed individuals to type a sequence of numbers with their left hand, as quickly and accurately as they could.

Each individual spent 12 minutes learning the new motor skill, with half the group learning in the morning and half in the evening.

Twelve hours later Walker and Stickgold tested the individuals, and it transpired that those who learnt the skill in the evening (and then slept for eight hours) performed significantly better than those who learnt the skill in the morning, carried on with their day and were then tested. Walker concluded that:

“Practice does not make perfect. It is practice, followed by a night of sleep, that leads to perfection.”

The Many Benefits of a Good Night’s Sleep

As well as enhancing motor skills, young athletes and those engaging in physical activity gain other benefits from getting plenty of sleep, including:

- Faster learning:

The brain systematically identifies the difficult transitions in the motor memory, and smooths them out. This helps us to pick up skills such as tricky basketball moves.

- Better habit forming:

Motor memories are transferred to the brain circuits that operate below the level of consciousness. This helps our brain to embed new skills, so the movements we perform become intuitive habits.

- Increased performance:

Performance can be enhanced in numerous ways, improving running speed, and accuracy (e.g., hitting a target), allowing athletes to lift heavier weights, enhancing co-ordination and boosting muscles and tissue strength.

- Improved positivity and focus:

A better positive mental attitude, rested athletes also tend to be more focused, alert, and motivated.

- Reduction in Injuries and improved healing:

Speedier recovery following exertion and inflammation, less chance of injury, enhanced repair of muscles and replenishment of glucose and glycogen. Sleep also reduces the need for oxygen, which means energy usually used for digestion can be diverted to build protein and transport fatty acids (needed to heal

the body). As an added bonus, sleep can boost pain tolerance too!

Are Young Athletes Getting Enough Slumber?

It's been suggested that kids aged 6-13 need around 9-11 hours of sleep per night, and teens ideally need 8-10 hours. However, we've already acknowledged that young athletes are faced with more demanding schedules and therefore need more shut-eye.

We also acknowledged that sleep aids motor skill learning, and thanks to Walker and Stickgold, we've discovered that we shouldn't just accept that practice makes perfect, but take on board that a good night's sleep is essential too.

For optimum recovery and performance youth sportspersons age 6-13 should be aiming for 10 to 12 hours and teens should be pushing toward the 10-hour mark possible. If you weigh up the many benefits, it's certainly worth our young athletes getting an early night and plenty of quality sleep as often as possible.

Sources:

- <https://www.sciencedirect.com/topics/medicine-and-dentistry/sleep-spindle>
- <https://pubmed.ncbi.nlm.nih.gov/24012316/>
- Why We Sleep Unlocking the Power of Sleep and Dreams by Professor Matthew Walker