

Sleep Need in High School Athletes

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CURRENT RESEARCH FINDINGS suggest that most high school students in the United States do not get enough sleep (1). Attitude, mood, and performance in the classroom and on the playing field may be adversely affected by lost sleep. High school teachers, coaches, and trainers should be aware of this growing problem and the impact of adolescent sleep patterns on health and performance. Unlike preteen children, who typically get the sleep they need, many high school students are sleep deprived.

Data from cross-sectional surveys indicate that from ages 10 to 17 student self-reported bedtimes become later and later even though the need for sleep does not decrease (1). Many high school students stay up late to complete homework assignments and then wake up early to get to school be-

fore 7:30 am. In addition, social obligations, work responsibilities, and team sport training can impact the amount of sleep debt a teenager incurs.

A sleep survey administered to more than 3,000 high school students in Rhode Island indicated that the median amount of reported sleep was 7.5 hours (3). By comparison, high school students in Israel, Finland, and Switzerland reported sleeping between 8.2 and 9.2 hours per night (2). Some European coaches encourage their young athletes to get an extra hour of sleep for every hour of training.

We recently surveyed a random sample of 120 athletes and 70 nonathletes in grades 9-12. The athletes and nonathletes reported sleeping on average 6.7 hours and 6.6 hours, respectively, per night. In addition, the athletes

reported spending about 2.4 hours per day training for their sport and 2.4 hours per night completing homework assignments. Not surprisingly, 94% of the athletes commented that they need more sleep. These reports, along with observations from teachers, coaches, and health care providers, suggest that a growing number of high school athletes in the United States have a sizable sleep debt. Although individual needs vary, sleep researchers suggest that the optimal sleep length for adolescents is about 9.2 hours per night (3).

Many high school students will try to catch up on their sleep on weekends, but this practice tends to result in a later sleep onset on Sunday nights. In addition, an extra 1 or 2 hours of sleep on the weekends may not be enough to repay the sleep debt

that builds up during the week. A teenager needing 9 hours of sleep per night but getting only 7 hours would accumulate a sleep debt of 10 hours by the weekend. Although teens may feel better on Saturday morning with an extra 1 or 2 hours of sleep, they will likely feel tired and irritable in the afternoon as they feel the effects of their accumulated sleep debt. This variation in weekday and weekend sleep habits may have an adverse impact on motivation, alertness, and athletic performance.

Young athletes seem to be training harder than ever before, and many high schools have strength and conditioning programs that rival those at colleges and universities. High school coaches often spend many hours designing periodized training programs and addressing the nutritional needs of their athletes. However, coaches must also understand that adequate sleep may be just as important to a young athlete's health and well-being as physical activity and proper nutrition. Aspiring young athletes who are sleep deprived may not reach their full potential despite participating in well-designed sports-training and conditioning programs.

Although sleepiness is an obvious consequence of inadequate sleep, young athletes who do not get enough sleep may have difficulty processing information, learning, behaving reliably, and performing to the best of their abilities. Athletes who are sleep deprived will likely feel tired during practice sessions and may have a lower tolerance for frustration when performing challenging exercises. Further, inadequate sleep may result in prolonged reaction times, which could have a significant impact on the outcome of any game. Even a half-second

lapse in reaction time can mean the difference between a successful play and a missed opportunity. Such lapses can also have catastrophic consequences when driving a car.

In response to feelings of sleepiness and tiredness, many high school athletes drink heavily caffeinated beverages such as coffee and sodas. Although the caffeine may produce a temporary boost in alertness, the effects are not long lasting. Furthermore, the consumption of caffeinated beverages may result in dehydration, which has undesirable effects on athletic performance.

High school students in the United States appear to be chronically sleep deprived. Coaches and health education teachers need to provide these students with sensible guidelines for proper sleep hygiene, including information on establishing a regular bedtime, avoiding caffeinated drinks in the evening, and preparing a sleeping environment that is quiet and comfortable. Because more time for sleep means less time for other activities, the amount of time a student spends at work and at sports practice may need to be reassessed. Health care providers should ask about sleep habits during the prescreening examination and, if necessary, should provide appropriate care.

Parents should also appreciate the importance of developing healthy sleep habits at an early age and should enforce reasonable bedtimes. Parents of children and teenagers should be provided with information on proper sleep hygiene and should understand that many behavioral and learning problems in school may be the result of insufficient sleep. Many high school students do not go to bed until after 11 pm and wake up about 6 am to get ready for school.

With age-appropriate education and support from parents, high school athletes may be willing to give up late-night distractions such as television for better grades and improved sports performance.

Because sleep habits developed early in life may carry over into adulthood, we all have the shared responsibility of helping children and teens develop healthy sleep habits. Parents, teachers, coaches, and health care providers should work together to develop effective strategies that address the sleep needs of high school students. ▲

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