



P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 5.38
IJPESH 2016; 3(4): 01-03
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www.kheljournal.com
Received: 01-05-2016
Accepted: 02-06-2016

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Sleeping giants: Improving sleeping habits in athletes

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Abstract

Sleep deprivation is a huge problem in athletes – and people in general as they tend to underestimate the importance of sleep and the extent to which they may be sleep deprived. For the general population experts generally recommend that an average adult sleep for 7-9 hours a night. However, sportsmen need 10-12 hours' sleep every day. Falling asleep instantly or needing an alarm clock to wake up are both red flags and if either applies to you then you may consider yourself as being sleep deprived.

Keywords: Sleep, athletes, sleep deprivation, sleep track, and sleep devices.

Introduction

Roger Federer and LeBron James have said they sleep an average of 12 hours a day, compared to less than 7 hours for the average Australian. Usain Bolt, Venus Williams, Maria Sharapova and Steve Nash prefer to sleep up to 10 hours a day. Just as athletes need more calories than most people when they are in training, they need more sleep too. The greater the intensity and effort the greater the need for planned recovery. However, in addition to physical training, conditioning and cognizant eating habits, sufficient sleep is crucial in athletic performance and competitive results. The quality and sufficient sleep are important for athletes as it boosts energy to both the brain and body, in addition to good for memory and hormonal balance in body.

The study will give an overview that ideal sleep endorses athlete's performance with going some insights into medications and devices available to improve sleep.

Quality Sleep Hours

According to Lee Taylor in The Evidence for Practitioners and Future Researchers Directions [4] suggests that sleep is a rhythmic cycle associated with biological processes that includes body temperature, blood pressure, immune system, melatonin and other hormonal factors. The question is how many Hours is considered an ideal quality sleep. According to National Sleep Foundation, sleep deprivation is a huge problem and that most athletes – and people in general – underestimate the importance of sleep. The bad quality of sleep is often associated with poor quality of life, morbidity, stress, and hormonal imbalances [4]. For the general population experts generally recommend that an average adult sleep for 7-9 hours a night. Falling asleep instantly or needing an alarm clock to wake up are both red flags and if either applies to you then you may consider yourself as being sleep deprived.

For athletes, it is suggested that mild sleep deprivation can have a drastic effect on athletic performance. Practitioners and Health Professionals are working hard to encourage athletes to have sufficient sleep [4]. A 2014 report reviewed by National Collegiate Athletic Association (NCAA) concluded that male and female had the increased concern of consuming sleeping medications. However, males are found taking more medications than female swimmers. Also, there has been 10% consumption of unknown medications usage in all sports as resulted by Rexroat, 2014 [5, 2]. The increasing trend of taking sleep medication is seen to be the result of the following reasons [4, 2, 3].

1. Before and after competition Pressure
2. Jet lag from exhausting travel
3. Insomnia or other hormonal imbalances

Sleep deprived athletes may fail to make effective team decisions, feel more fatigued and be unable to perform well. Therefore, the recommended target for athletes is to try and sleep for 10 hours per night.

Extending sleep times can to performance. Stanford University's Center for Sleep Sciences and Medicine has done a research investigating the sleep-sport performance by taking several groups of Stanford student athletes to analyze the effects of more than usual sleep hours on sportman's performance.

These group of students were asked increase their sleep goal to 10 hours a night* for between 6-8 weeks and the results are as follows [7]: -

Swimming (Men and Women): There were five swimmers who were asked to sleep for 10 hours per night for 6-7 weeks without missing a day in a row. The results were improved drastically in turn times, speed, reaction time and strokes. The swimmers also improved their mood and fatigue levels.

Tennis: Here 5 Tennis players participated for sleeping 10 hours per night for 5-6 weeks. The improvement was shocking as they highly improved on accuracy and sprint times dropping from 19.12 to 17.56.

American Football: Seven basketball players were asked on the Stanford Football Team to do the same thing as other players to extend sleep hours for the next few weeks. The results were better than before as average time of shuttle decreased from 4.71 seconds to 4.61 seconds in 20 yard shuttle and in their 40 yard dash, from 4.99 seconds to 4.89 seconds was observed.

Basketball: The same things happened here with 11 players of the University Basketball Team. As a result, shooting accuracy was seen to improved significantly in free throw and three-point shooting.

***Note:** Not all the athletes actually slept for 10 hours but the act of attempting to sleep for 10 hours resulted in an increase

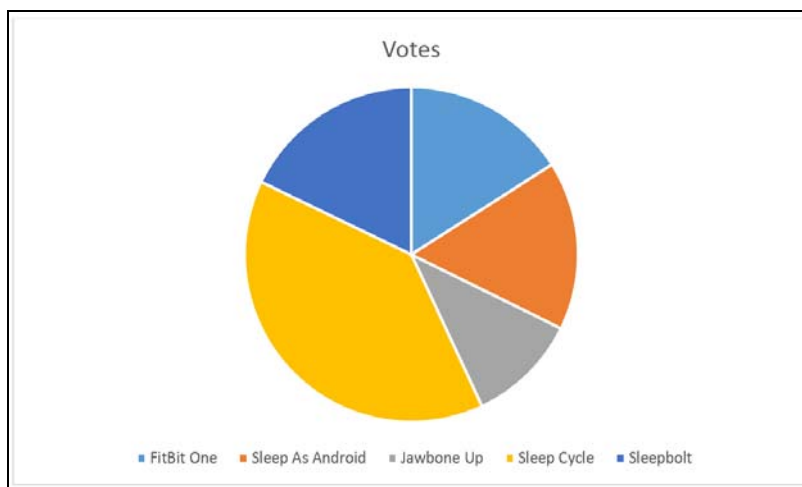
in sleeping hours when compared to their normal routine. Usain Bolt Venus Williams Maria Sharapova Steve Nash 10 sleep up to hours a day.

Tracking your sleep

The use of sleep-tracking technologies by sportsmen is a new trend. As some scientists are in the point of view that the that wearable devices can track sleep by the help of sensors inserted in them that picks up data and provide feedback to athletes and coaches on a detailed information on sleep quality and pattern. These devices are known to be the biggest be technological innovation that will guide a sportsman in direct and indirect ways. In 2012, the US Sleep Coach Company Zeo applauded by sportsmen around the world for giving a genius Zeo personal sleep coach device. Ultimately, the product had to go through the downfalls for being so expensive for the mass market. However, Boston Bruins defenseman Andrew Ference has said "I always knew some days I'd feel great and some days I wouldn't, but I wouldn't really know why". Ference is wearing the Zeo sleep coach every night for a few years and is very happy on the results as he receives a regular description through grading system in ZEO that tracks the quality of his sleep session. He uses that and daily routine so as to sleep better the next night. The Zeo works by reading signals from the brain, is consider a little complex over tiny tracking devices and apps (such as Fit Bit One, Sleep Cycle and Sleepbot) that guides users on their sleeping habits and sleeping cycle.

Based upon a recent online Poll the most popular apps/gadgets on Lifehacker.com [1] were as follows:

- FitBit One 15.97% (374 votes)
- Sleep as Android 16.31% (382 votes)
- Jawbone Up 10.76% (252 votes)
- Sleep Cycle 39.11% (916 votes)
- Sleepbolt 17.85% (418 votes)



FitBit One: Sleep Tracking is easy through clipping the device in your clothes and will keep a track of the steps you took to stay active the whole day. At night, the device will capture the movements when a person has woken up at time and how many times he/she did. It can be synced with website to give a detailed report.

Sleep as Android: The device will watch your sleep cycles and is designed to wake you up gently at the best possible time of the morning. The graphs of your sleep habits can be demonstrated on the device, also it will warn of any kind sleep deprivation and guide you for any kind of sleep illness.

Jawbone Up: The device will track the steps and day activity level including calories consumed per day. It will warn the person if he/she is sitting without doing any activity and encourage to do some exercise. It will inform on how many hours a person slept and activities of overnight. The device can be synced to get the elaborate of sleep cycles at night.

Sleep Cycle: An IOS app that is designed to watch sleep habits, quality of sleep and time in bed, will track the sleep, and, also when a person woke up at the middle of the night.

Sleep Bolt: An android app for tracking sleeping patterns and tracking on the sleep patterns and measuring the quality of the sleep. The app is free to download.

All the devices are really good to try but a poll would give you an idea of which one could be preferred over others.

To be successful in your chosen sport you may need to set a sleep goal.

According to The Better Sleep Council, Recommendations for non-medical Therapies for better sleep ^[9]

- Delayed or broken sleep is a common problem for many sportsmen.
- The following may help to calm the mind and body to increase the quantity and quality of your sleep: -
- Before going to bed, tell yourself that you will have a sound sleep, and that you are going to wake up just before the alarm clock, feeling refreshed and alert.
- If you can't get sleep after 20 minutes, get up and do something boring until you feel sleepy.
- Avoid alcohol, caffeine and heavy meals four hours before sleep.
- Focus on relaxing your body by doing some light muscle exercises.
- It is normal to wake up once or twice in a night. Don't panic about it, just try to relax and focus on breathing.
- Keep a pen and paper beside your bed; if something bothers you write it down.
- Start tracking your sleep, consider purchasing a sleep tracking device or app.
- If you suffer from the muscle pain, try a massage. Even self-massage is good before sleep.

Playing Safe with Sleeping Pills ^[8]

Try non-medical therapies first and consult your doctor before taking sleeping pills. Doctors are generally reluctant to prescribe sleeping tablets as they may result in side effects such as drowsiness or addiction. If you find sleeping pills to be necessary, you should try to limit their usage to less than 2-4 weeks and not every day.

Conclusion

To summarize, the sleep is directly related to internal factors of the body including hormonal and stress level before and after competition. Sleep medication usage can only be taken after prescription. A sufficient sleep is important for an athlete which tends to be between 10-12 hours a day. The sleeping habits can be improved by exercising or tracking by using the methods mentioned.

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