

Sleep and Health

Today we live in a world where getting little sleep is worn as a badge of honor and is a sign of hard work and success. But by depriving ourselves of sleep are we actually hurting our performance? Our health? And our bodies ability to modulate pain? Many successful individuals claim to get by on little sleep such as Elon Musk and Arnold Swartzneggar but in reality, 5% of individuals are able to get by on less to 6 hours of sleep. Throughout this blog post we will explore the impact that sleep has on our lives.

Sleep and Performance

As physical therapists we are in a unique position to not only help our patients that are in pain but also help them perform better in their sport or in life. There has been a multitude of studies that have demonstrated the effects of sleep on performance. Swimming athletes were found to have faster reaction times and improved sprint time when getting 10 hours of sleep vs 8 hours of sleep. Accuracy of tennis serves increased by 36%-42% after increasing sleep to 9 hours. In another study when tennis players were sleep deprived (<5 hours of sleep) their serves decreased accuracy by up to 53%. Lastly, runners reported they were quicker to reach exhaustion when they were sleep deprived.

Sleep and performance isn't just something that is reserved for the athletic population. It is also important for mental performance in many areas of work including Physical Therapy. With all the demands placed on us as Physical Therapists, such as seeing more patients, listening to our patients physical and emotional problems, and often having to wrap up our nights finishing notes. This is why sleep is something that we need to focus on not only for our own health but for our ability to perform well as clinicians. Many studies have shown that even short-term sleep deprivation can contribute to memory loss, decreased reaction time and a decreased ability to think creatively. Which are all essential in our ability to form good plan of cares for our patients.

Sleep and Injury

The research behind sleep and injury is mixed. Some of the reasons behind this are because no one single factor can predict if someone is going to get injured. Another reason is because the definitions of sleep deprivation and injury are defined differently in every study. However, it makes sense that if our patients do not have a solid foundation of sleep than their risk of injury would be increased. For example, one study reported if you got less than 8 hours of sleep a night you were 1.7x more likely to get injured. While another reported that if you got more than 8 hours of sleep you were 61% less likely to get injured.

Sleep and Pain

Lack of sleep can make a big impact on our patient's ability to tolerate pain along with how much pain they are reporting. One study found that poor sleep leads to increased pain sensitivity, which often leads to our patients needing to take more pain medication. If these pain medications are in the opioid family, studies show that they have an adverse effect on sleep which therefore will cascade into our patients have increased pain sensitivity.

Sleep and Cardiovascular Disease

Sleep has a large impact on our patient's cardiovascular health. Studies have shown that the time of year when the most cardiovascular events occur is around day lights saving time. This demonstrates how much effect sleep can have on our body because it shows that even one 1 hour change in our high risk patients sleep pattern can affect their health.

Sleep and Diabetes

Sleep continues to extend its impact to our endocrine system. One study showed that when 11 healthy college aged males without a history of diabetes were subjected to less than 4 hours of sleep a night for a week that they all became pre diabetic. Now the good news is that when they resumed their normal sleep patterns of 7 or more hours of sleep their glucose levels return to normal resting levels. Now this is a small sample size of patients, but I believe it provides some input into the impact that sleep has on our body as a whole.

Now What?

Now I have provided you with a bunch of information above but this may leave you with more thoughts and questions than action to be taken. Sleep is just a part of what we can impact as Physical Therapists and the point of this post is to help use recognize how it can impact us and our patients. Below I have outlined some sleep Hygiene recommendations that are helpful to provide to our patients to help change their sleep habits and help promote better environment for healing and long term health.

Sleep Hygiene

Darkness: 1 hour before bed start to dim the lights in your house to allow your body to start preparing for sleep. This also helps our body release melatonin which helps us fall asleep.

Regularity: Our circadium rhythm regulates when we feel awake and when we feel tired despite what the sun is telling us. This is why you feel awake in the middle of the night when you travel to another country. Going to bed and waking up at the same time helps our patients to regulate their circadium rhythm and helps them fall and stay asleep.

Walk it out: One tip we can give our patients is if they are laying in bed and unable to fall asleep they should get up and do something else until they fall asleep. This is because our brain will start to associate the bed as a place where you don't sleep.

Caffeine and Alcohol : Caffeine has a half life of 5 hours so we should suggest that our patients limit their caffeine intake in the afternoon. Alcohol although it is a suppressant, when it is consumed in large quantities will prevent our body from falling into the deep stages of sleep where the most rest and recovery happens.

Temperature: In order for our body to get into deep sleep we need to drop our body temperature. Studies have shown that the ideal temperature is around 65 degrees. This is also why taking a shower before bed can help you fall asleep.

Night time routine: Many of us have a morning routine. But we expect ourselves to be able to immediately drop everything at the end of our busy day and fall right to sleep. If we can develop a nighttime routine for ourselves and for our patients that consistent of these sleep hygiene techniques then we have a better chance at impacting our patients sleep and helping them heal.

When implementing these habit changes in our patients it is important to pick 1 or 2 of these 6 tips to focus on to not overwhelm them and to help them be more successful at incorporating this into their lives.

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