

## Background

Sleep plays a vital role in physical recovery, cognitive function, and overall performance, making it especially essential for athletes. While the recommended 7-9 hours of sleep per night supports optimal functioning for the everyday person, athletes often face challenges in doing this due to competition schedules, travel, and stress (National Sleep Foundation, 2020). As such inadequate sleep amongst athletes can impair reaction times, concentration, and endurance, which are crucial components for their athletic success. As a result, many athletes turn to naps as a strategy to compensate for lost sleep. However, limited research has explored the specific impact of pre-game naps on athletic performance, especially in environmental and behavioral factors, making this an important focus for investigation.

Inadequate sleep can have immensely negative effects on both physical and mental performance. Sleep deprivation has been shown to impair cognitive function, slow reaction times, and reduce attention and focus (Fullgar et al, 2015). Athletes who get poor sleep often show decreased endurance, strength, and accuracy, which can significantly impact their performance during a competition (Pilcher, Huffcut., 1996). Furthermore, sleep deprivation increases the risk of injury, as tired muscles and delayed reaction times can lead to poor decision-making and therefore, their physical performance (Lastella et al., 2014). The combined effects of sleep deprivation in athletes, particularly during high-intensity training or competition, can lead to a big decline in overall performance, proving the importance of a sufficient amount of sleep.

To negate the adverse effects of deficient sleep, sleep extension has been increasingly and more commonly used as a solution to improve performance. Sleep extension involves encouraging athletes to increase their sleep duration beyond the typical 7-9 hours, by ensuring longer periods of sleep during the night. Studies have demonstrated that extending sleep can

lead to improvements in various performance metrics. For example, Mah et al. (2011) extended the sleep duration of collegiate basketball players, resulting in significant improvements in sprint times, shooting accuracy, and overall performance. By allowing athletes to sleep longer, the body is given more time to repair and re-energize leading to improved physical and cognitive performance. This then supports previous research data that provide evidence that sleep extensions are particularly effective in sports requiring high levels of concentration and physical endurance, where even small improvements can make a substantial difference.

While sleep extension is a solution, not all athletes can afford to increase the amount of undisturbed sleep hours due to travel, training, or competition schedules. As such, naps have become a common tactic to compensate for lost sleep and subsequently, improve performance. Additionally, napping has been shown to affect mood, alertness, and cognitive function, particularly in athletes who experience sleep deficits (Waterhouse et al., 2007). Research by Chtourou and Souissi (2012) demonstrated that short naps, ranging from 10 to 30 minutes, can improve endurance performance by enhancing reaction times and reducing fatigue. Naps also provide a chance for muscle recovery, helping athletes maintain peak physical performance even when their nighttime sleep is disrupted. However, the success of naps can be affected by factors such as nap duration, timing, and the sleep environment, which makes it important to consider these variables when implementing naps into athletic recovery routines.

Regardless of the benefits of napping, there have been very studies that researched the effects of pre-game naps on athletic performance. One study that was conducted was a study conducted by Teece et al. (2020), which investigated the impact of pre-game naps on rugby players. The study found that players who napped for 20-30 minutes before their matches felt that they performed much better during a match than players who did not take a nap. This highlights a positive correlation between match results and pre-game naps. Although the study

was focused on rugby, its findings provide evidence that pre-game naps could be equally beneficial in other sports that demand both mental focus and physical stamina.

Research on pre-game naps in athletes is limited, despite the need for strategies to improve performance and address sleep losses. Tennis, which requires physical stamina and mental focus, is an ideal context to study these effects. This study aims to examine how pre-game naps, influenced by environmental and behavioral factors, can enhance athletes' pre-competition routines and overall success.