Sleep - Quality Z's for Quality Sleep

Sleep is the single best recovery strategy available to anyone. Period.

Forget about ice baths, forget about hot cold, forget about wading in the bay. Sleep trumps all else.

Sleep is so important that in the last 10 years alone there has been a 4000% (I'm not overexaggerating) increase in scientific research on sleep science. This increase likely stems from approximately 52% of team sport athletes reporting sleeping difficulties over the course of a season.

Less than 8 hours of sleep per night was associated with almost twice the risk of injury than more than 8 hours of sleep over a 21-month period. Unbelievably almost 60% of team sport athletes report NOT using any strategy to alter the negative effects of lost sleep.

If you wanted a significant advantage over the competition, you just found it!

So how do alterations in sleep effect athletes? Scientific research has identified multiple changes in performance, including:

- Decreased jump power (and therefore jump height)
- Reduction in exercise capacity (being unable to run as long – or having to work harder to complete the same amount of "work")
- Reductions in ability to adapt to training stimulus
    - Decreased ability to build muscle and cardiovascular fitness
    - Decreased ability to develop skills (like shooting technique / accuracy)
- Reductions in reaction time, decision making and memory
- Slowed recovery from injury
- Reductions in academic performance

Simply, it reduces physical and mental performance.

Research (and common sense) suggests that athletes are exposed to multiple factors that affect sleep.

1. Travel (even as little as 1-3 hours can negatively influence sleep)
2. Exercise late in the day (particularly after 8pm)
3. Repeated exercise exposure (multiple games / trainings / tryouts / school sports days / double headers etc, in short proximity to each other)

These all tend to increase body and brain demands of the athlete. Adding the stresses of winning and losing, an individual's performance, external life and social stresses and many other stresses, you have overload that limits one's ability to gain quality Z's.

But before we dive into how to improve sleep, we should know the basics.

Sleep occurs in stages. These are called NREM (stages 1-4), and REM (stage 5).

As you sleep you progress through each of these stages (called a sleep cycle), with different brain and bodily functions occurring as you go. Each cycle last around 90-120mins. During these cycles your body undergoes recovery, maintenance and adaptation, with each stage of sleep focussing on different bodily qualities. As a product of this, if you don't complete several sleep cycles during your bedtime you will miss a key opportunity for your body to recover, adapt and improve from your training the day before.

Now onto the good stuff! How do we improve our sleep?

There are three key components of sleep that are changeable, these should be your focus if you plan on improving your sleep:

1. Sleep Duration – Total time asleep (not pillow time with eyes open)
2. Sleep Quality – The effectiveness of your sleep
3. Sleep Phase – Your actual bed time and associated sleep routine

Any strategy to improve sleep should be target at one or more of these components.

General Sleep Rules

Classically 6-8 hours of sleep is recommended. Increasing this up to 10 hours per night for basketballers has shown performance improvements in sprint speed and shooting accuracy. If you're increasing physical demands on your body then you'll need a longer recovery period!

If you know a tough schedule is coming you should be prepared. Make sure everything you can manage while awake is in place, including adequate hydration and food intake pre and post-game as well as your sleep routine (more on this later). This is particularly important if you know you're going to be on the road or staying up past your normal bedtime.

Specific Intervention #1 - Sleep Hygiene

The definition of "hygiene" = a practise conducive to the preservation of health. Sleep hygiene is by far the easiest and best way to make improvements in sleep quality. Develop a consistent routine for bed and structure your bedroom environment "cleanliness" for optimal sleep is what sleep hygiene is all about.

The environment of your bedroom should:

- Be cool (19-21^0), dark (blinds / curtains closed) and quiet.
- Technology should be removed (it creates heat and light – blue light is particularly bad).
- Be fitted out for the sole purpose of sleep, so avoid creating other stimuli within the bedroom environment.
    - Absolutely no working / studying in bed or watching stimulating visuals (including TV) in bed!

Your sleep routine should:

- Include approximately 30mins of wind down time where:
    - You avoid exposure to bright lights – particularly TV, Smartphones, Computers or any other blue lights
    - You complete any remaining physical hygiene – eg. cleaning you teeth
- A consistent bed and wake time – 10pm to 8am is classically recommended

Other considerations:

- Using relaxation techniques are recommended if you are alert or aroused prior to bedtime
- Avoid sugar and caffeine drinks later in the day
- Avoid watching the clock – particularly if it is brightly lit
- Organise as much of your next day as possible before bed.
- If unable to sleep after 20-30mins, get out of bed, go and do something boring or calming (avoiding bright lights – including smartphones, TV's and computers), before returning to bed to try again.

Specific Intervention #2 Napping

Midday napping is useful paying back sleep debt and improving short term performance. 30mins after lunch is currently recommended, particularly if participating in evening matches or training. Be careful though, don't let napping throw your day to day sleep hygiene out of order. If it will effect your evening sleep then aim to improve other areas of sleep hygiene.

Specific Intervention #3 Sleeping Extension

Sleeping longer to make up for sleep debt is commonly used in short term bouts when athletes feel tired. However, when it comes to improved performance and sleep, one off increases in sleep have limited benefit. Scientific evidence currently recommends 1-2 hours more at most. This is most beneficial if you can do it ongoing for a couple of weeks.

Sleep is an often-overlooked sporting performance enhancing tool for the aspiring athlete. Hopefully the above helps you on your journey to athletic supremacy.

References

1. Sleep and recovery in team sport – current sleep related issues facing in professional team sport athletes (Fulgar, Duffield, Skorski, Coutts, Julian & Meyer – 2015)
2. The effects of sleep extension on the athletic performance of collegiate basketball players (Mah, Mah & Kezirian – 2011)
3. Chronic lack of sleep is associated with increased sports injuries in adolescent athletes (Milewski Skaggs, Bishop, Pace, Ibrahim, Wren & Barzdukas – 2014)
4. Clinical Sports Medicine 5th edition Vol 1. (Brukner & Kahn – 2017)