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# Understanding Sleep

#### **Basics of Sleep & Its Stages**

**The sleep cycle**: Sleep consists of several cycles, each lasting about 90 minutes. A typical night's sleep includes multiple cycles, each containing two primary types of sleep: Rapid Eye Movement (REM) and Non-Rapid Eye Movement (NREM).

#### **Stages of Sleep**

**NREM Stage 1:** This is a light sleep stage where you can be easily awakened. It's a transition phase between wakefulness and sleep.

**NREM Stage 2:** In this stage, your body starts to relax more deeply. It's characterized by a drop in body temperature and slowed heart rate.

**NREM Stage 3:** Often referred to as deep sleep or slow-wave sleep. It's crucial for feeling refreshed and alert the next day. During this stage, the body repairs tissues, builds bone and muscle, and strengthens the immune system.

**REM Sleep**: This stage is associated with dreaming. Brain activity increases, and the body experiences temporary paralysis of limb muscles. REM sleep is important for learning, memory, and mood regulation.

# How Sleep Impacts Health & Well-Being

#### **Physical Health**

**Recovery and RepairFunction**: Sleep is essential for the repair and regeneration of muscles, joints and tissue, detoxification, and hormonal balance. As an athlete these are critical for your well being.

**Immune System**: Adequate sleep is crucial for a strong immune system. Lack of sleep can make you more susceptible to infections.

**Heart Health**: Quality sleep helps regulate blood pressure and heart rate, reducing the risk of heart disease and increasing cardiovascular health and performance

#### **Mental & Emotional Health**

**Cognitive Functions**: Sleep is vital for cognitive processes such as memory, learning, problem-solving, and making corrections for skills in practice

**Mood Regulation**: Insufficient sleep can lead to irritability, stress, self-doubt, low confidence and an increased risk of mental health issues like depression and anxiety.

**Stress and Resilience**: Good sleep can enhance your ability to handle stress and maintain emotional balance, making your training and performance a success.

#### **Long-Term Health Outcomes**

**Chronic Health Conditions**: Consistently poor sleep can contribute to long-term health issues like heart disease, diabetes, lack of performance, injury and neurological disorders.

**Lifespan:** There's evidence that both too little and too much sleep can negatively impact lifespan.

#### **Daily Functioning**

**Alertness and Safety:** Adequate sleep is essential for staying alert and reducing the risk of accidents or falls. Gymnastics can be a dangerous sport and safety is critical.

**Performance and Productivity**: Good sleep can lead to improved concentration, higher productivity, and better confidence and performance in the gym.



# Create a Bedtime Routine Activities to Promote Relaxation

Relaxation Techniques: Practices like deep breathing, meditation, or gentle yoga can calm the mind and prepare the body for sleep.



Reading: Engaging in light reading of a book or magazine can be a soothing pre-sleep activity.



Warm Bath or Shower: A warm bath or shower before bed can help lower body temperature afterward, signaling the body it's time for sleep. Use epsom salts for those sore muscles after a long, hard practice.



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#### **Limiting Stimulating Activities:**

Avoid engaging in stressful or high-energy activities before bed.



## Create a Comfortable Bedroom Environment

**Temperature:** A cool room, typically around 65°F (18°C), is considered ideal for sleep.

**Lighting**: Dim or low lighting helps signal the body that it's time to rest. Blackout curtains can be beneficial.

**Noise**: A quiet environment is essential. White noise machines or earplugs can be helpful in noisy environments.

**Comfortable Bedding:** Invest in a comfortable mattress, pillows, and bedding suitable for your sleep preferences.

**Clutter-Free Space:** A clean, uncluttered bedroom can create a more relaxing atmosphere.



#### **Electronics**

**Blue Light Exposure**: Devices like phones, tablets, and computers emit blue light, which can interfere with melatonin production and disrupt sleep cycles.

**Mental Stimulation**: Using devices can keep the brain alert and engaged, making it harder to wind down.

#### **Recommendations:**

- Turn off electronic devices at least 30 minutes to an hour before bed.
- Use features like "night mode" that reduces blue light exposure in the evening.
- Replace device use with more calming activities like reading or listening to soft music.
- Creating Boundaries: Keep electronic devices out of the bedroom to create a mental association that the bedroom is for sleep and relaxation only.

Adopting these habits can significantly improve the quality of your sleep, leading to better health well-being and better athletic performance as well as recovery. It's important to be patient and consistent as these habits become a natural part of your nightly routine



# Sleep Hygiene

#### What is Sleep Hygiene?

Sleep hygiene refers to a set of habits and practices that are conducive to sleeping well on a regular basis. Good sleep hygiene can help maximize the quality and duration of sleep, thereby enhancing overall health and well-being.

#### **Tips for Improving Sleep Hygiene**

- Limiting Caffeine and Alcohol Intake, Especially in the Evening (for gymnasts over 21)
  - Caffeine: As a stimulant, caffeine can disrupt your sleep cycle, making it harder to fall asleep. It's advised to avoid caffeine at least 4-6 hours before bedtime.
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  - Alcohol: While alcohol might initially make you feel drowsy, it can impair sleep quality and lead to fragmented sleep. Limit alcohol intake and avoid consuming it close to bedtime.



- 2 Physical Activity
  - Timing: Engaging in regular physical activity can promote better sleep. However, it's best to avoid vigorous exercise close to bedtime as it can be stimulating. Obviously many gymnasts train late into the evening, so do your best to use the calming strategies in this ebook to help you wind down.
  - \* Moderate-intensity activities like walking, cycling, or swimming are excellent for overall health and can improve sleep. Gentle stretching or yoga in the evening can also prepare the body for rest.

#### Tips for Improving Sleep Hygiene, Cont.



#### **Stress Management Techniques**

- **Yoga**: Gentle yoga can help calm the mind and reduce physical tension, preparing the body for sleep.
- **Meditation**: Mindfulness or guided meditation can help clear the mind from the day's stressors, promoting relaxation.
- **Breathing Exercises:** Techniques like deep breathing or the 4-7-8 method can help slow down the heart rate and induce a state of calm, facilitating the onset of sleep.



#### **Napping**

- **DO:** Keep naps short (20-30 minutes) to avoid entering deep sleep, which can lead to grogginess.
- **DO:** Early afternoon is the best time to nap, as it's less likely to interfere with nighttime sleep.
- **DON'T**: Avoid long naps or napping too late in the day, as these can disrupt your regular sleep schedule.



By incorporating these practices into your daily routine, you can significantly enhance your sleep hygiene, leading to improved sleep quality and overall health. Remember, consistency is key when it comes to good sleep hygiene.

# Nutrition for Better Sleep

#### **How does Diet Affect Sleep?**

The relationship between diet and sleep is bidirectional – what you eat affects how you sleep, and the quality of your sleep influences your dietary choices.

Certain nutrients can promote better sleep by influencing neurotransmitters and hormones that regulate sleep, while others can disrupt sleep patterns.





#### **Foods that Promote Sleep**

#### **Tryptophan-Rich Foods:**

- Tryptophan is an amino acid that the body uses to make serotonin, which in turn is converted to melatonin, the sleep-regulating hormone.
- Examples: Turkey, chicken, milk, cheese, yogurt, eggs, and nuts.





#### **Complex Carbohydrates:**

- Complex carbs help in the production of serotonin in the brain, which aids in relaxation.
- Examples: Whole grains, beans, vegetables, and fruits.



#### Magnesium-Rich Foods:

- Magnesium is a mineral that has a calming effect on the nervous system and can help prepare the body for sleep.
- Examples: Spinach, kale, almonds, walnuts, whole grains, and seeds.



#### **Foods Containing Melatonin:**

- Certain foods contain melatonin, which can help regulate the sleep-wake cycle.
- Examples: Tart cherries, grapes, walnuts, and flax seeds.







#### **Foods to Avoid Before Bedtime**

#### **Heavy or Spicy Meals:**

- Eating a large or spicy meal close to bedtime can cause discomfort and indigestion, making it difficult to fall asleep.
- It's best to have dinner at least 3 hours before bedtime.



#### **High-Sugar Foods:**

- Foods with high sugar content can lead to a spike in blood sugar, causing energy levels to fluctuate and disrupting sleep.
- Avoid sweets, sugary desserts, and soft drinks in the evening.



#### **Caffeine and Alcohol:**

- Caffeine is a stimulant that can keep you awake and should be avoided in the evening.
- Although alcohol may initially induce sleepiness, it can impair sleep quality and cause disturbances during the night.



#### **Timing of Meals**

#### **Dinner Timing:**

• Eating dinner too close to bedtime can cause discomfort and disrupt sleep. Aim to finish dinner at least 2-3 hours before going to bed. Again, do your best if your practice ends late into the evening.

#### **Bedtime Snacks:**

 If you're hungry before bed, choose a light snack that won't spike your blood sugar or cause digestive issues. Good options include a small bowl of whole-grain cereal with milk, a banana, or a handful of nuts.



By paying attention to both what you eat and when you eat, you can significantly improve your sleep quality. A well-balanced diet that includes sleep-promoting foods and avoids sleep-disrupting items can be a valuable part of a comprehensive sleep hygiene regimen.

#### **Common Sleep Supplements**

#### **Melatonin:**

- **Use**: Melatonin is a hormone that regulates the sleepwake cycle. It's commonly used to treat insomnia and other sleep disorders, especially in cases where the sleep-wake cycle is disrupted, like jet lag.
- Considerations: It's generally safe for short-term use, but long-term safety is less clear. Side effects can include headaches, dizziness, and daytime sleepiness.

#### Magnesium:



- **Use**: Magnesium plays a role in supporting deep, restorative sleep by maintaining healthy levels of GABA, a neurotransmitter that promotes sleep.
- **Considerations**: It's important to adhere to recommended dosages, as excessive intake can lead to gastrointestinal issues and other side effects.

#### **Valerian Root:**

- **Use**: Valerian root is an herbal supplement used to reduce the time it takes to fall asleep and to improve sleep quality.
- **Considerations**: The evidence for its effectiveness is mixed. Some people may experience mild side effects like headaches or stomach upset.

#### L-Theanine:

- **Use**: Found in tea leaves, L-theanine is an amino acid that may promote relaxation and better sleep.
- **Considerations**: It's generally considered safe, but it's important to consult with a healthcare provider for appropriate dosing and to ensure it doesn't interact with other medications.

#### **GABA:**

- Use: GABA stands for Gamma-Aminobutyric Acid. It's a chemical that our brains make naturally. Most people take GABA supplements in the evening or shortly before bedtime. This is because GABA is meant to help calm the brain and prepare it for sleep.
- **Considerations:** There aren't any established guidelines for the amount and timing of taking GABA supplements for sleep so check with your healthcare provider before using

## Conclusion

#### **Summary of Key Points**

**Understanding Sleep**: Sleep consists of cycles involving REM and NREM stages, each playing a crucial role in physical and mental health. Consistent, quality sleep is essential for cognitive function, emotional well-being, and overall health.

**Sleep Habits for Better Rest:** Establishing a regular sleep schedule and creating a calming bedtime routine can significantly improve sleep quality. Optimal bedroom conditions (like a cool, quiet, and dark environment) and managing electronic device usage before bedtime are also important.

**Sleep Hygiene:** Good sleep hygiene involves practices like limiting caffeine and alcohol intake, particularly in the evening, engaging in regular physical activity, and employing stress management techniques like yoga and meditation. Napping should be short and not too late in the day.

**Nutrition for Better Sleep:** Diet affects sleep quality. Foods rich in tryptophan, complex carbohydrates, magnesium, and melatonin promote better sleep, while heavy, spicy, or high-sugar foods, as well as caffeine and alcohol, should be avoided before bedtime. The timing of meals also impacts sleep.

**Supplements for Sleep**: Supplements like melatonin, magnesium, valerian root, and L-theanine can aid sleep, but should be used with consideration and under the guidance of a healthcare provider, especially if sleep issues persist or if there are underlying health conditions.

# Interested in learning more?





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