# The Science of Sleep & Why It Matters

## Sleep Is Non-Negotiable for Optimal Health!

**Optimizing your sleep is one of the most powerful actions** you can take to improve your health, energy, immune system, and even mental performance. Sleep is deeply tied to hormone balance, brain function, metabolic health, and cellular repair.

## Circadian Rhythm: Your Internal Clock

- Your circadian rhythm is a 24-hour cycle influenced by light and darkness - so it is governed by the rising and setting of the sun.
- Sunlight triggers cortisol release (wakes you up), while darkness stimulates melatonin production (helps you sleep).
- Morning sun exposure boosts mitochondrial function and serotonin, which later converts into melatonin at night. Therefore, your sleep optimization routine should actually start in the morning!
- Artificial light (especially blue light from screens) disrupts this rhythm, reducing melatonin and quality sleep. Blue light tricks your body into thinking it is still daytime, and the sun is still out.

## Hormones & Sleep

- **Melatonin:** Rises between 7–10 pm, stays elevated until approx. 4 am. Melatonin is not only important for sleep, but it is also an immensely powerful antioxidant, essential for immune health and cellular repair.
- **Growth hormone:** Promotes tissue repair and brain detoxification. Peaks around 11pm–3 am.
- **Cortisol:** Starts rising around 3am, and peaks 30-45 minutes after waking.

## Brain Health & Memory

- Glymphatic System: Your brain's "janitorial system" flushes out toxins during deep sleep.
- Deep sleep helps convert short-term memory into long-term memory.
    - ➢ Lack of sleep may increase the risk of cognitive decline or dementia.

## Sleep & Metabolism

- Poor sleep causes hormonal imbalance: more ghrelin (hunger hormone), less leptin (makes you feel full).
- **Sleep-deprived people crave sugar and refined carbs more often!**
    - ➢ Increases risk for insulin resistance, inflammation, and fat storage.

***"Just one night of poor sleep can lower insulin sensitivity and metabolic rate."***

# Sleep Optimization Habits

**1. Adopt a Routine**

- Aim for 7–8 hours of sleep; ideally asleep by 9–10pm.
- Go to bed and wake up at the same time daily.

**2. Daytime Habits That Boost Nighttime Sleep**

- Stay active as much as possible throughout the day.
    - Movement promotes deeper sleep and lymphatic drainage.
- Avoid exercise 1.5–3 hours before bed.
- Get sunlight in the morning to regulate circadian rhythm.

**3. Create a Sleep-Friendly Environment**

- Cool room (60 - 68°F), quiet, and dark
- Use amber lights or salt lamps in the evening.
- Wear blue light blocking glasses after sunset.
- Avoid screens 1–2 hours before bed.

**4. Mind-Body Practices**

- Use bed only for sleep or sex.
- Practice meditation, stretching, or gentle yoga before bed.
- Try journaling or deep breathing.
- Resources: Insight Timer, The Mindful Movement, Gaia, HeartMath.org.

**5. Food, Hydration & Supplements**

- Eat fiber-rich foods and fermented vegetables to optimize your gut microbiome.
    - Dysbiosis (imbalance of intestinal microbes) can also disrupt your sleep.
- Stop eating at least 3 hrs before bed.
- Avoid caffeinated beverages after 12–2pm.
- Limit fluids 3–4 hrs before bed.
- Dehydration also disrupts sleep.
    - Drink approx. half your body weight (lbs) in oz of water/day. (Example: 120 lbs = 60 oz water/day)
- Avoid alcohol at least 3-4 hrs before bedtime as alcohol prevents you from reaching the deeper stages of sleep.

**6. Supplements & Teas to Consider**

- Magnesium glycinate, L-theanine, melatonin (Herbatonin by *Symphony Natural Health* is the world's first plant-based melatonin for natural, restorative sleep.) ***Always consult your provider***
- Herbal Tea: ashwagandha, chamomile, valerian (use caution)

**7. Medications (Best if Used Only Short-Term with Supervision)**

- Limit Benadryl. (linked to cognitive issues with long-term use)
- Benzodiazepines carry dementia risks with chronic use.