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Sleep Health

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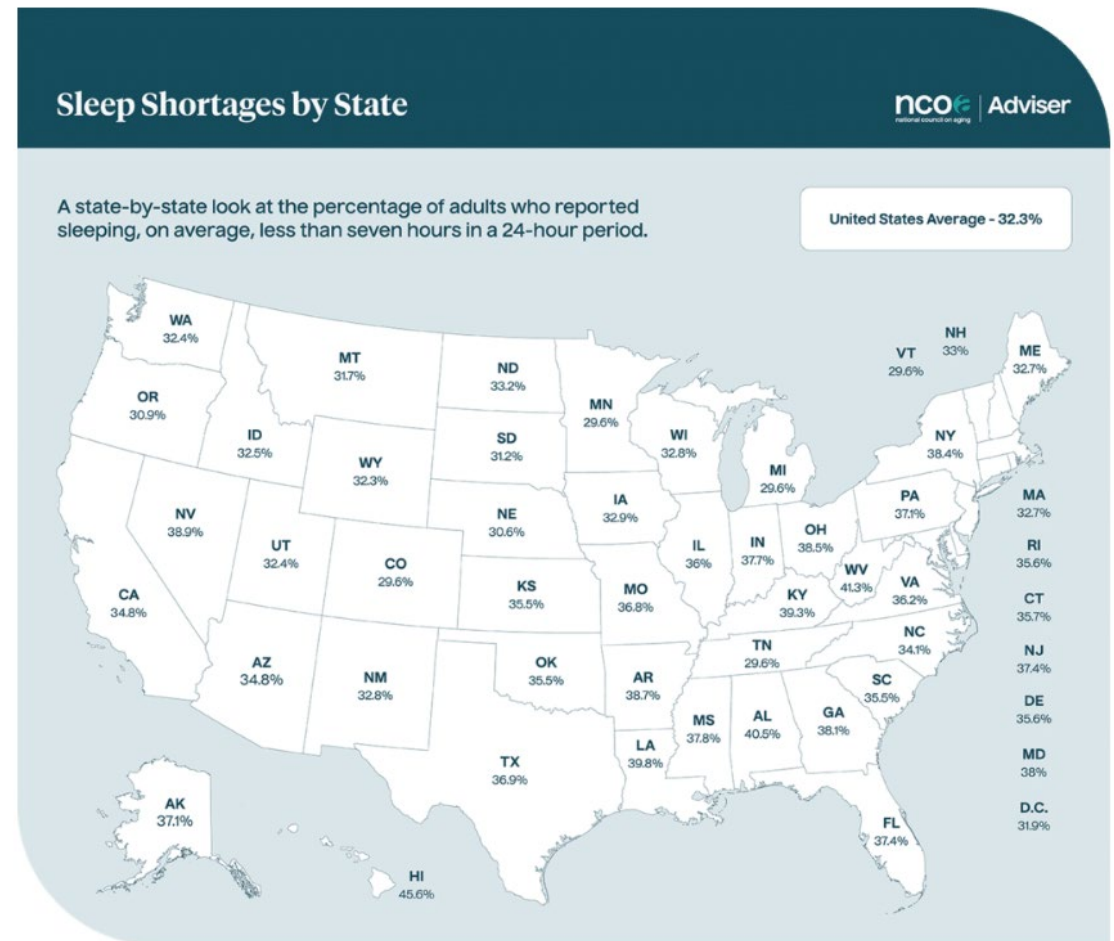
Learning Objectives

After participating today's session, attendees should be able to:

- **Describe the three functions of sleep**
- **Identify factors that affect sleep**
- **Explain multiple ways to improve sleep hygiene**

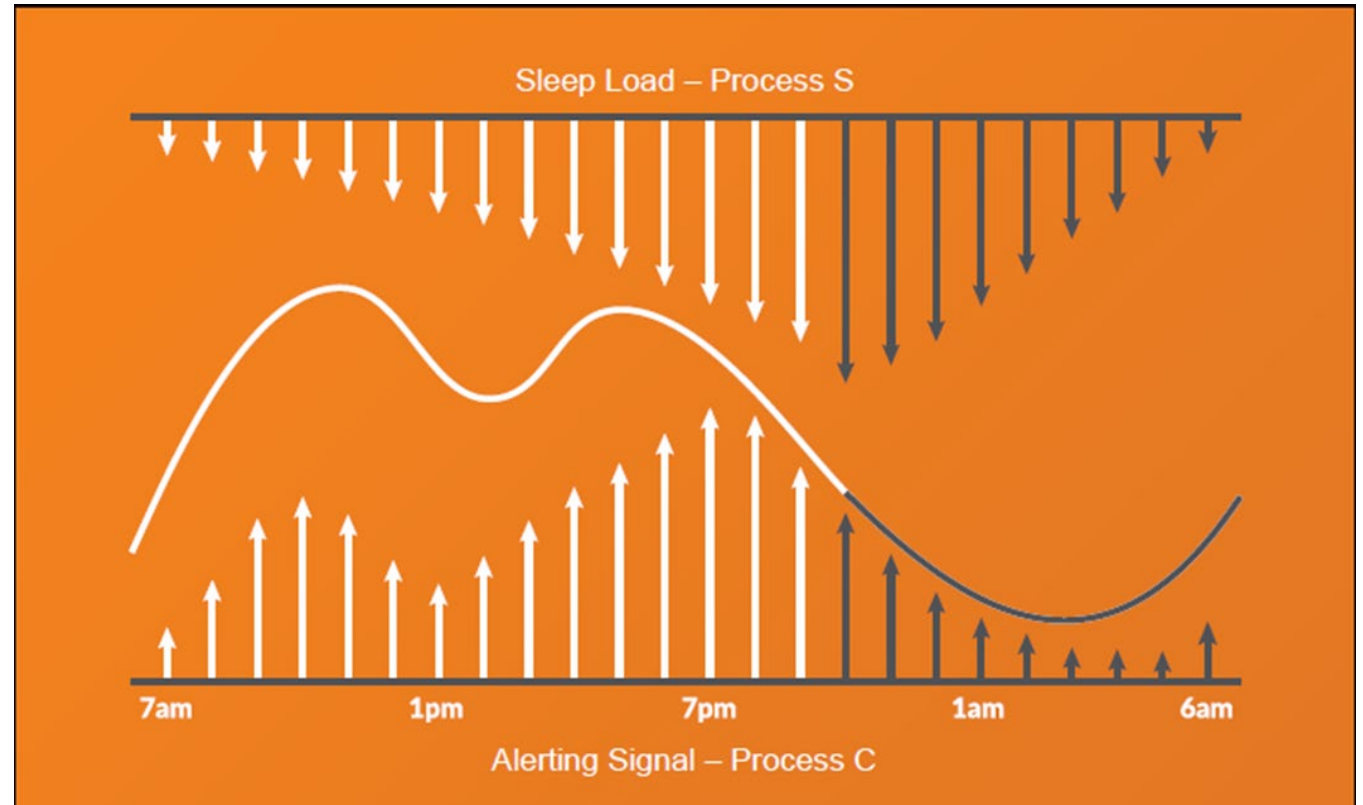
This presentation is for educational purposes only. The information shared should not replace the care and directions of your health care provider.

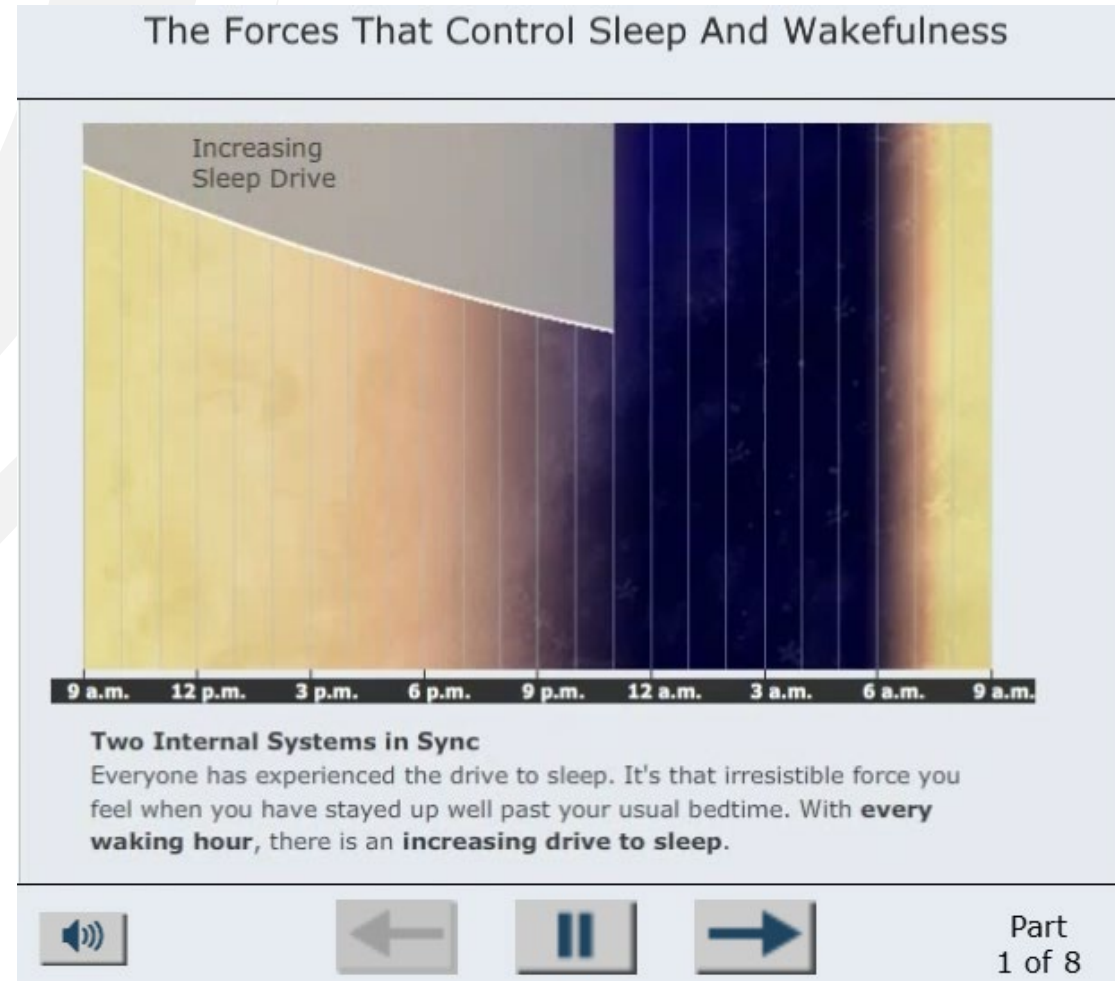
- More that 30% of all US adults report sleeping for less that seven hours per night on average
- The US is constantly among the most sleep deprived countries in the world
- On average, humans sleep 1/3 of their life
- Around 75% of adults with depression suffer from insomnia
- 57% of teens who use technology in the bedroom, such as television or smartphone, suffer from sleep problems



Sleep Needs

- **Homeostatic sleep drive:** The drive to sleep that accumulates during prolonged wakefulness, and lessens during sleep. Sleep homeostasis is one of the primary modulators of sleep in human
- **Sleep load-** the drive to sleep
- **Alerting signal-** drive to be awake





<https://sleep.hms.harvard.edu/forces-control-sleep-and-wakefulness>

Sleep Recommendations

- Most healthy adults need a minimum of seven hours of sleep each night
- Infants, young children, and teenagers should get more sleep to support growth and development

Sleep guidelines by age

- **Birth to 3 months:** 14 to 17 hours
- **4 to 11 months:** 12 to 16 hours
- **1 to 2 years:** 11 to 14 hours
- **3 to 5 years:** 10 to 13 hours
- **6 to 12 years:** 9 to 12 hours
- **13 to 18 years:** 8 to 10 hours
- **18 to 64 years:** 7 to 9 hours
- **65 years and older:** 7 to 8 hours

Do I really
need that
much sleep?



Functions of Sleep

Cleansing- the glial cells act to cleanse the brain tissue of toxin, amyloids, and waste products



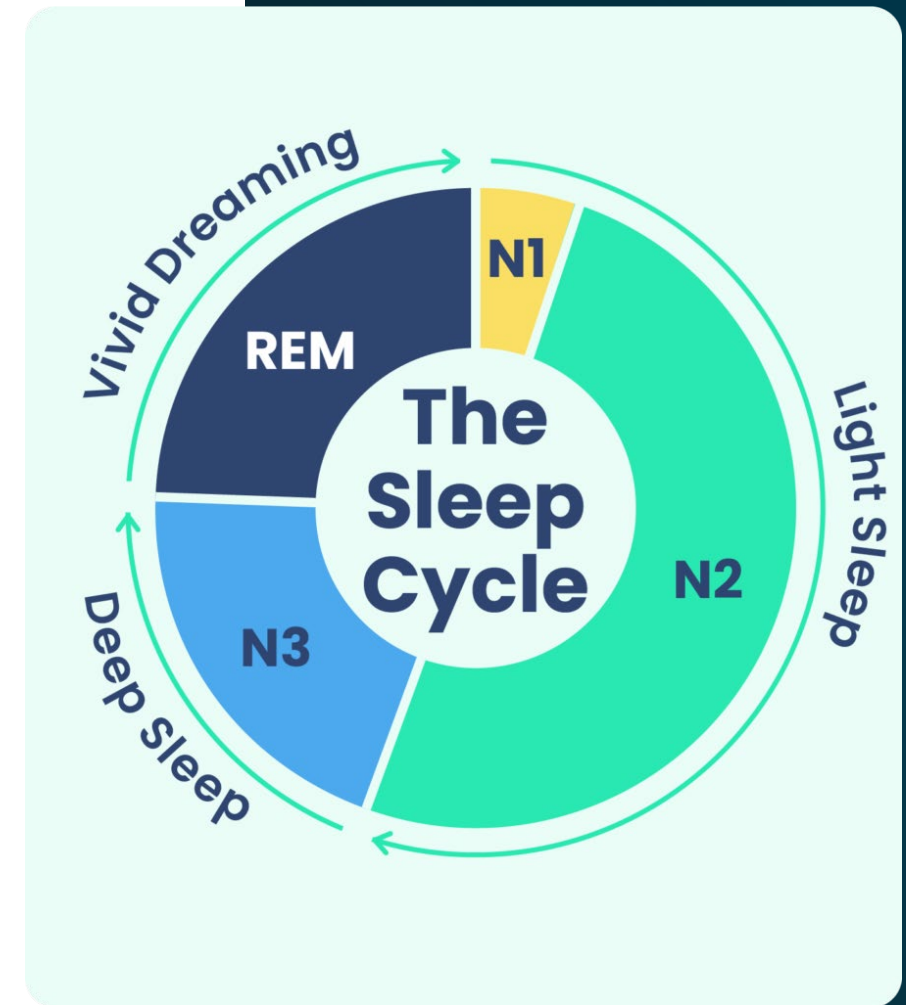
Consolidation- the process in which the brain takes newly acquired leaning and gradually converts it from short-term to long term memory



Restorative- allow the body time to repair and rejuvenate what it has lost through the day

Sleep Cycle

- **Stage One (N1)** - Lightest of sleep. Last about 1-7 minutes.
- **Stage Two (N2)** - Light sleep. Muscles are beginning to relax, heart rate slows, body temperature decreases, and your body prepares to enter deep sleep. 10-25 minutes.
- **Stage Three (N3)** - Deep sleep. Very slow brain waves, no eye movement or muscle activity. If woken up, you feel groggy. Lasts about 20-40 minutes.
- **Stage Four (N4)** - Brain activity increases again. Major muscles can't move. Breathing becomes faster and irregular. Most dreaming occurs during this stage. Initial cycle, last about 1-5 minutes- increases throughout the night, 10-60 minutes.



Symptoms of Sleep Deprivation

Sleep Deprivation

Common symptoms include:



Daytime sleepiness.



Fatigue.



Irritability.



Trouble thinking, focusing and remembering.



Headaches.



Slowed reaction times.

Severe symptoms include:



Microsleeps.



Uncontrollable eye movements.



Trouble speaking clearly.



Drooping eyelids.



Hand tremors.



Visual and tactile hallucinations.



Impaired judgment.

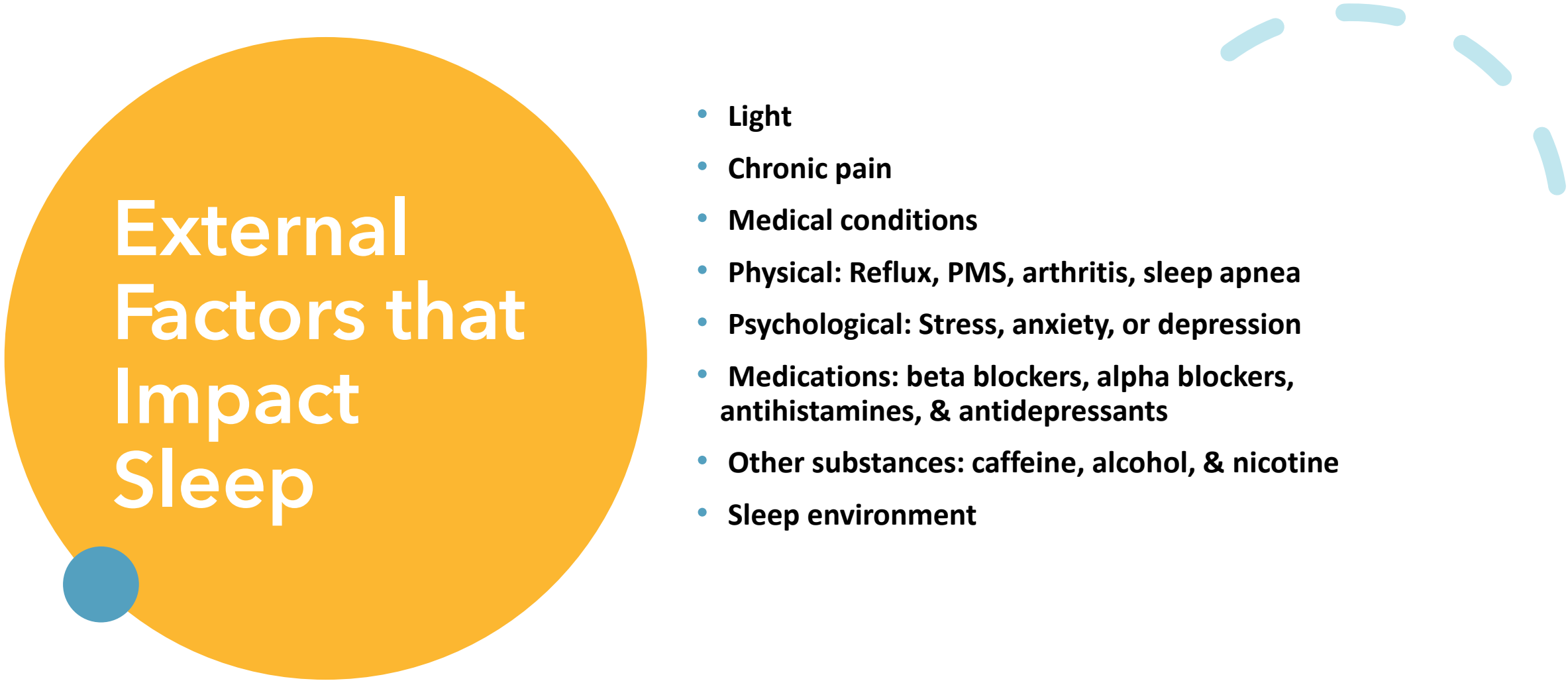


Impulsive (or even reckless) behavior.

Impact of Insufficient Sleep on the Brain

- Negative impact on short term memory
- Negative impact on long term memory
- Difficulty concentrating
- Delayed reactions
- Increased mood swings
- Impacts decision making processes and creativity
- Increased risk for hallucinations, anxiety, depression, paranoia, and suicidal thoughts





External Factors that Impact Sleep

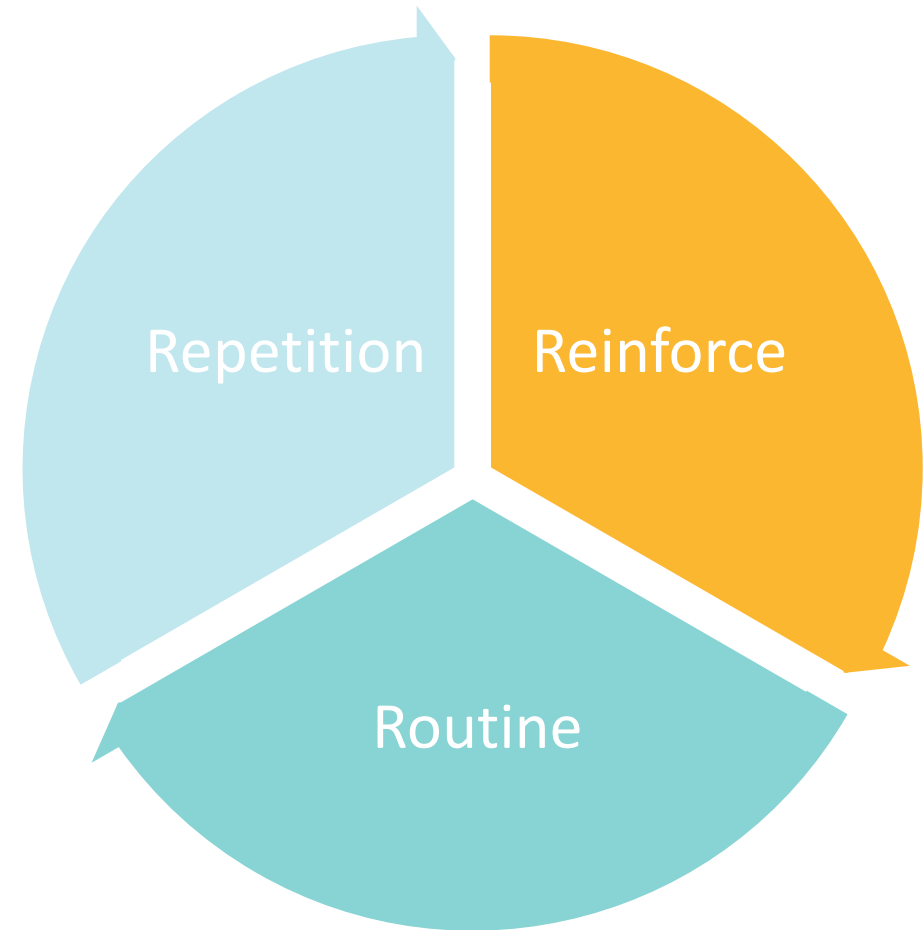
- **Light**
- **Chronic pain**
- **Medical conditions**
- **Physical: Reflux, PMS, arthritis, sleep apnea**
- **Psychological: Stress, anxiety, or depression**
- **Medications: beta blockers, alpha blockers, antihistamines, & antidepressants**
- **Other substances: caffeine, alcohol, & nicotine**
- **Sleep environment**

How Can I Improve My Sleep?



Tips for Better Sleep

- **Stick to a schedule**
 - Humans are often described as [creatures of habit¹](#) because we become conditioned to distinct [patterns of behavior²](#) through repetition of certain cues and responses. Routines can make actions nearly automatic in numerous aspects of daily life, including sleep.
- **Pay attention to what you eat and drink prior to bedtime**
 - Avoid consuming nicotine or caffeine in the hours leading to bedtime as they are stimulants
 - Limit alcohol consumption especially close to bedtime
 - Avoid being hungry or too full





Tips for Better Sleep

- **Power down devices at least 1 hour prior to bedtime. Why?**
- **Blue light and extremely low frequency vibrations have been directly linked with disrupting melatonin production**
 - Melatonin is produced as natural light diminishes through the day to signal the body to get ready to rest in alignment with your circadian rhythm
 - Blue light is emitted from phones, tablets, laptops, gaming devices, televisions
- **Always being “connected” creates stress- never powering down which leads to less sleep or poor sleep**
- **Screen addiction**



Tips for Better Sleep

- **Get comfortable!**
 - Quiet and dark
 - A cool yet comfortable temperature
 - Quality bedding to make your bed a haven for comfort and rest
 - No devices
 - Separate sleeping spaces for pets and children
- **Limit daytime naps**
 - 10 to 30 minutes tops during the mid afternoon (prior to 3pm)
 - 10–20-minute naps allow you to rest without entering slow wave sleep which may affect nighttime sleep as well as cause you to feel groggy or confused upon waking

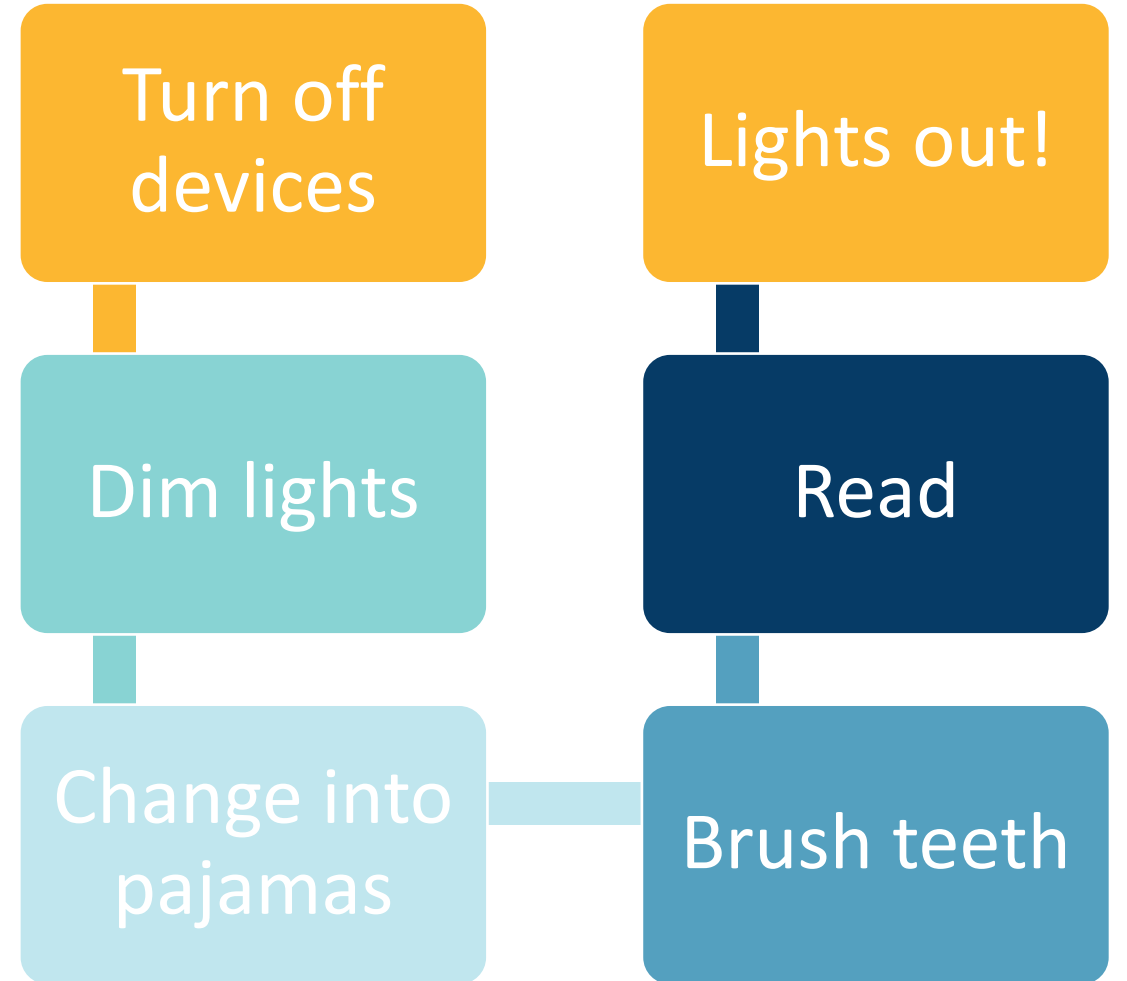
A person is running on a paved path during sunset. The person is wearing a light blue long-sleeved shirt, black leggings, and colorful running shoes. The sun is low on the horizon, creating a warm, golden glow. The background shows a blurred landscape with trees and a path leading into the distance.

Tips for Better Sleep

- **Include physical activity in your daily routine**
 - Activity increases your sleep drive by physically tiring out your body
 - Exercise can aid in decompressing and stabilizing your mood
 - Exercise can relieve stress and anxiety
 - Considerations for timing:
 - Exercise raises your core temperature which can put off your ability to sleep
 - Endorphins created by exercise may keep you awake
 - Depending on type of exercise, plan to do 1 to 2 hours prior to bedtime
- **Manage stress**

Create a Bedtime Routine

- Consistent cues can play a powerful psychological role in routines.
- Develop a personal relaxation plan: Being able to relax both mentally and physically is a major contributor to falling asleep easily.



Resources

- [Sleep Statistics](#) Sleep Foundation
- [How Exercise Affects Your Sleep](#) from Cleveland Clinic
- [How to Reset Your Sleep Routine](#) from the Sleep Foundation
- [Stress and Insomnia](#)
- [3 Simple Ways to Get More Restful Sleep](#) from Harvard Health
- [That Fascinating Circadian Rhythm](#) from Nutrition Facts
- [Sleep Stages](#)
- [Napping Dos and Don'ts for Healthy Adults](#) from the Mayo Clinic
- [Stress and Sleep](#) from American Psychological Association
- [The Forces that Control Sleep and Wakefulness](#) from Harvard
- [Sleep Drive and Your Body Clock](#) from Sleep Foundation

Bed Time Cheat Sheet

Wake-up time	Bedtime: 7.5 hours of sleep (5 cycles)	Bedtime: 9 hours of sleep (6 cycles)
4 a.m.	8:15 p.m.	6:45 p.m.
4:15 a.m.	8:30 p.m.	7 p.m.
4:30 a.m.	8:45 p.m.	7:15 p.m.
4:45 a.m.	9 p.m.	7:30 p.m.
5 a.m.	9:15 p.m.	7:45 p.m.
5:15 a.m.	9:30 p.m.	8 p.m.
5:30 a.m.	9:45 p.m.	8:15 p.m.
5:45 a.m.	10 p.m.	8:30 p.m.
6 a.m.	10:15 p.m.	8:45 p.m.
6:15 a.m.	10:30 p.m.	9 p.m.
6:30 a.m.	10:45 p.m.	9:15 p.m.
6:45 a.m.	11 p.m.	9:30 p.m.
7 a.m.	11:15 p.m.	9:45 p.m.
7:15 a.m.	11:30 p.m.	10 p.m.
7:30 a.m.	11:45 p.m.	10:15 p.m.
7:45 a.m.	12 p.m.	10:30 p.m.
8 a.m.	12:15 a.m.	10:45 p.m.



Thank You

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