



Sleep Deprivation

How Sleep Deprivation Affects Work Performance



Table of content

- Introduction
- The Physical, Cognitive & Emotional Effects
- The Impact on Productivity
- Causes of Sleep Deprivation
- Addressing Sleep Deprivation in the Workplace
- Overcoming Sleep Deprivation
- Conclusion

Introduction



Introduction to Sleep Deprivation

- Sleep deprivation is a condition that occurs if you don't get enough sleep
- There are two kinds of sleep deprivation:
 - Acute sleep deprivation
 - Chronic sleep deprivation
- Sleep deprivation is a common problem in modern society
- Very common in the workplace





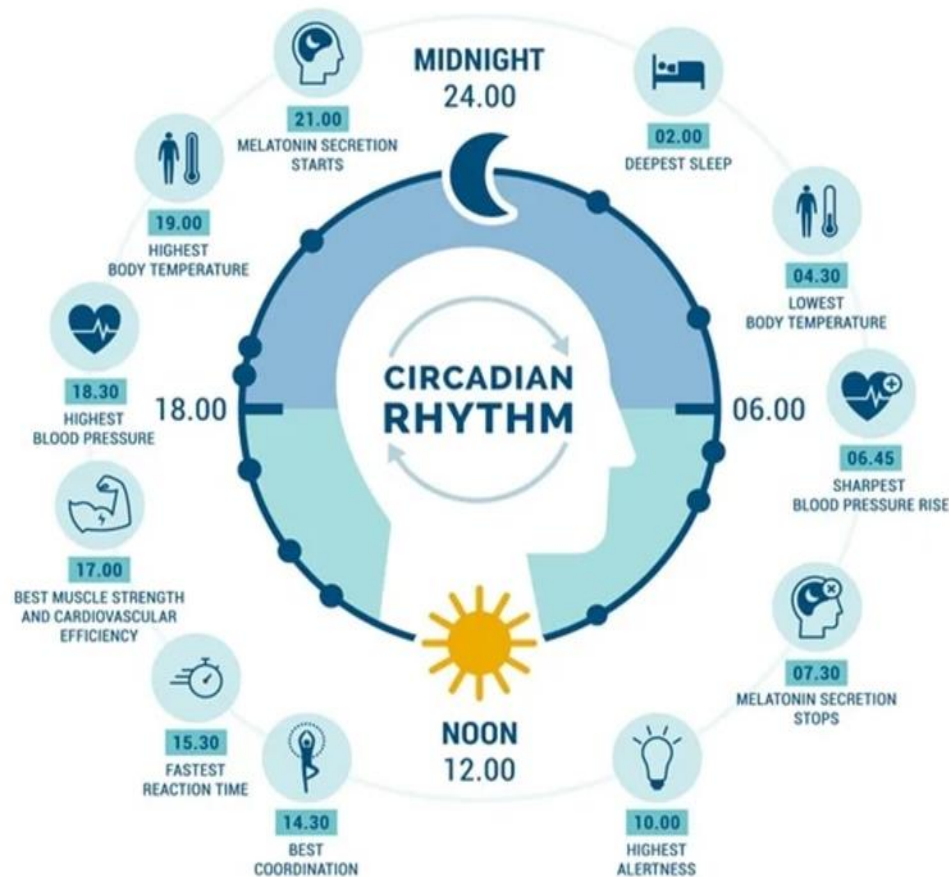
Sleep

- Sleeping is a basic human need, like eating, drinking, and breathing.
- Adult needs an average of 8 hours sleep daily to function properly.
- People spend 1/3 of their life sleeping (25 – 30 years).
- Sleep is essential for the body to effectively grow & repair itself.

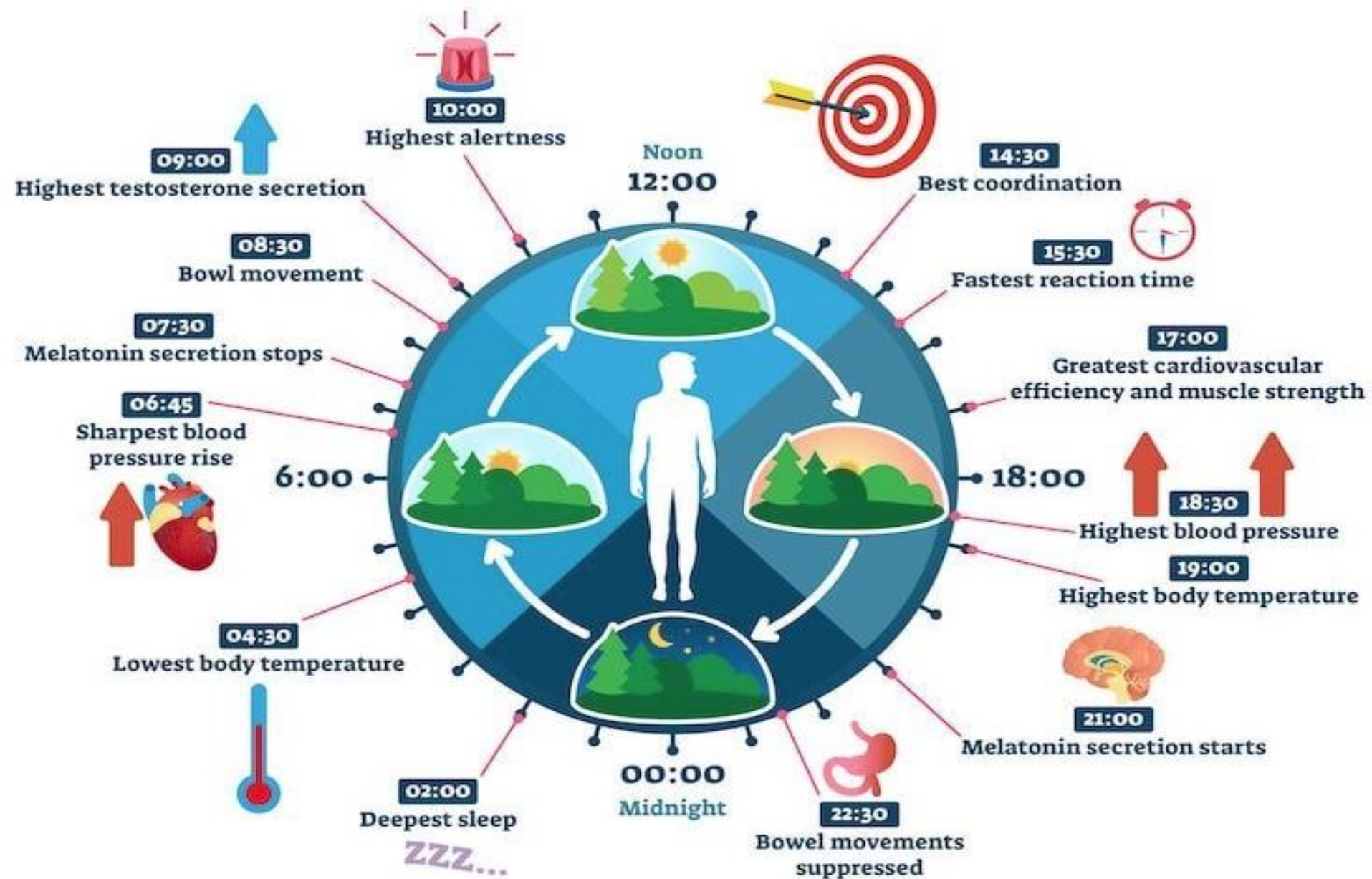


Circadian Rhythm

Circadian rhythms are 24-hour cycles that are part of the body's internal clock, running in the background to carry out essential functions and processes. One of the most important and well-known circadian rhythms is the sleep-wake cycle & its response to light.



CIRCADIAN RHYTHM





Sleep Phases and Stages

- Light sleep stage (NREM)
 - Stage 1. This stage is the transition between wakefulness and sleep.
 - Stage 2. You are asleep in this stage.
- Deep Sleep stage
 - Stage 3. (DELTA Wave) Slow-wave sleep, after a particular pattern that appears in measurements of brain activity. You usually spend more time in this stage early in the night.
 - Stage 4. (REM) or (Dream) Your eyes twitch and your brain is active. Brain activity measured during this stage is similar to your brain's activity during waking hours.

The 4 Stages of Sleep



NREM Stage 1

- transition period between wakefulness and sleep
- lasts around 5 to 10 minutes



NREM Stage 3

- muscles relax
- blood pressure and breathing rate drop
- deepest sleep occurs



NREM Stage 2

- body temperature drops and heart rate begins to slow
- brain begins to produce sleep spindles
- lasts approximately 20 minutes



REM Sleep

- brain becomes more active
- body becomes relaxed and immobilized
- dreams occur
- eyes move rapidly

Brain Wave Frequencies

Type and Range

What it Does

Gamma Waves

Higher than 30 Hz



While concentrating, focusing, and learning

Beta Waves

13 - 30 Hz



During most activities while awake

Alpha Waves

8 - 12.99 Hz



While relaxed or sleepy

Theta Waves

4 - 7.99 Hz



During stage 1 and 2 (light) sleep

Delta Waves

1 - 3.99 Hz



During stage 3 (deep) sleep

Sleep Disorders

- Insomnia
- Narcolepsy
- Jet Lag
- Shift work disorder





Insomnia

insomnia



Obstructive Sleep Apnea (OSA)

- Sleep apnea is a condition in which your breathing repeatedly pauses while you sleep. When this happens, your body wakes you up to resume breathing. Each time your breathing restarts, you might let out a loud snore that wakes both you and your bed partner. These multiple sleep interruptions prevent you from sleeping well, leaving you feeling extra tired during the day.

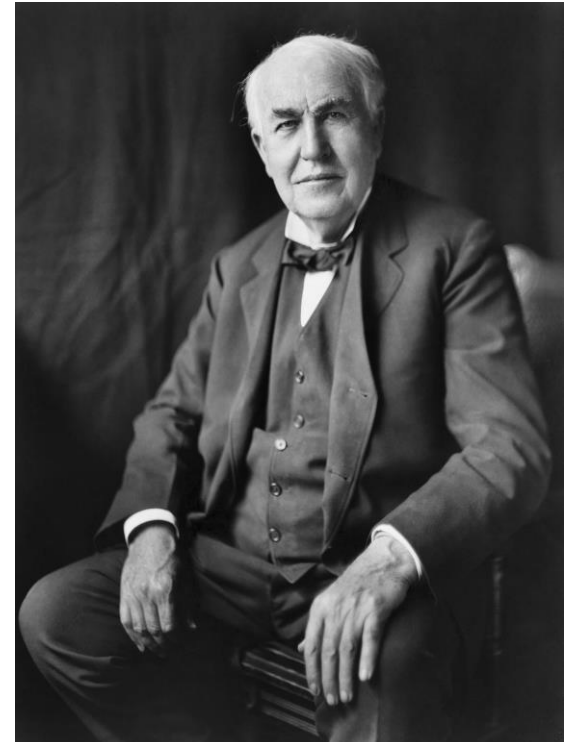




History

Our ancestors used to sleep from sunset to sunrise which give them 9 to 10 hour sleep to perform at peak to hunt, protect themselves & survive.

- “Genius is one percent inspiration and ninety-nine percent perspiration.”
- American inventor & businessman
- Lived in the 19th century
- Invention of electricity (light bulb), phonograph & motion picture camera
- Thomas Alva Edison



Effects of Sleep Deprivation

The Physical Effects

- Physical fatigue
- Obesity
- Diabetes
- Heart diseases
- Impaired or reduced immune function

The Cognitive & Emotional Effects

- Decreased accuracy & attention to details



- Reduced memory



- Affect decision-making skills



- Difficult to learn & process complex task



The Cognitive & Emotional Effects (Cont.)

- Decrease situational awareness
- Slower reaction times
- Decreased ability to cope with stress and regulate emotions





The Cognitive & Emotional Effects (Cont.)

- Anxiety
- Depression
- Bad temper







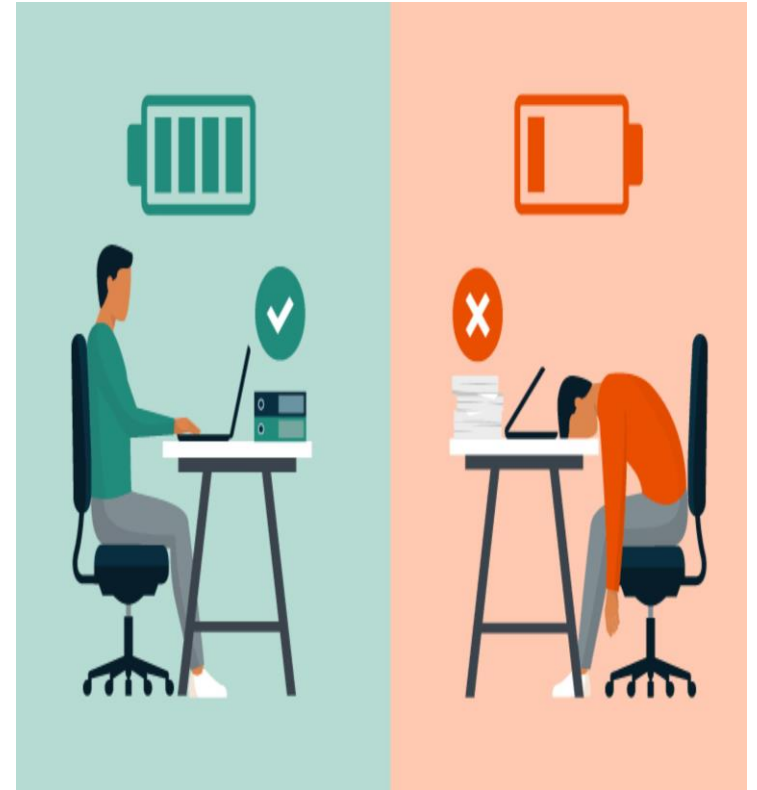
Recap

The Impact on Productivity



The Impact on Productivity

- Take longer to complete tasks
- Missing deadlines
- Increase stress level
- Decreased job satisfaction



Sleep related road accident (RTA)

- 20% road accidents
- 16% near crashes
- 1000 road deaths annually
- Sleep Related Collisions (SRC) = Teenagers
- Not sleeping for 17 – 19 hours is equivalent to BAC of 0.05%



لا تقد المركبة وأنت نعسان

انتبه للنعاس، فالأمر هنا لا يتعلق بمقاومة النوم، بل بالخطر الوشيك الذي يقترب منك، الحادث المروري لا يحتاج سوى إني نأول لكي يحدث، لذا إن شعرت بالنعاس، توقف على جانب الطريق في منطقة آمنة لتحصل على قسط من الراحة.

Don't drive sleep – deprived

Sleepiness is not a matter of willpower, but a biological need. If you become drowsy, pull off the road in a safe area and get some rest.



Causes of Sleep Deprivation

Causes of Sleep Deprivation

- Lifestyle choices
- Medical conditions
- Work schedules
- Stress and anxiety

It is important to identify the causes of sleep deprivation in order to develop effective strategies for addressing this issue.





Addressing Sleep Deprivation in the Workplace



Addressing Sleep Deprivation in the Workplace

- Flexible work schedules
- Providing opportunities for napping or rest breaks (Siesta)
- Promoting healthy sleep habits through education and awareness campaigns

By prioritizing employee sleep and well-being, employers can not only improve productivity and safety but also create a more positive and supportive work environment overall.



Overcoming Sleep Deprivation

Healthy Sleeping habits

- Maximum 90 Min napping
- Over-the-counter (OTC) medicines
- Prescription sleeping pills
- Breathing device (CPAP) to help with sleep apnea
- 30 min physical activity
- Avoid electronic screens before bed





Healthy Sleeping habits (Cont.)

- Ideal sleeping room setup
- Comfortable mattress and pillows
- Consistent sleep schedule
- White noise





Healthy Sleeping habits (Cont.)

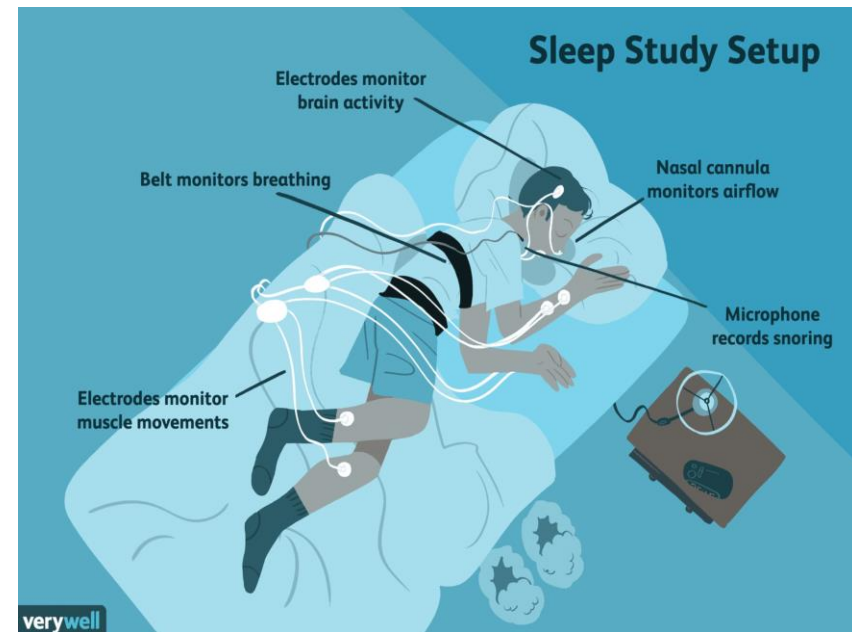
- Create bedtime routine:
 - Warm bath
 - Meditating
 - Reading
- Avoid eating:
 - Heavy meals
 - Fatty or fried foods
 - Spicy meals
 - Acidic foods
 - Carbonated drinks
 - Caffeine & alcohol



**NO FOOD
OR DRINK**

Sleep Studies

- Sleep studies, also called **polysomnography**, are painless tests that measure how well you sleep and how your body responds to sleep problems. They are also used to help your doctor diagnose sleep disorders.
- The most common type of sleep studies records brain waves and monitor your heart rate, breathing, and the oxygen level in your blood during a full night of sleep.



Napping Tips

- 1. Keep it short:
 - 10 to 20 minute power naps.
 - 90 minute naps.
- 2. Set an alarm.
- 3. Plan 12:00 – 15:00
- 4. Pick a comfortable environment.



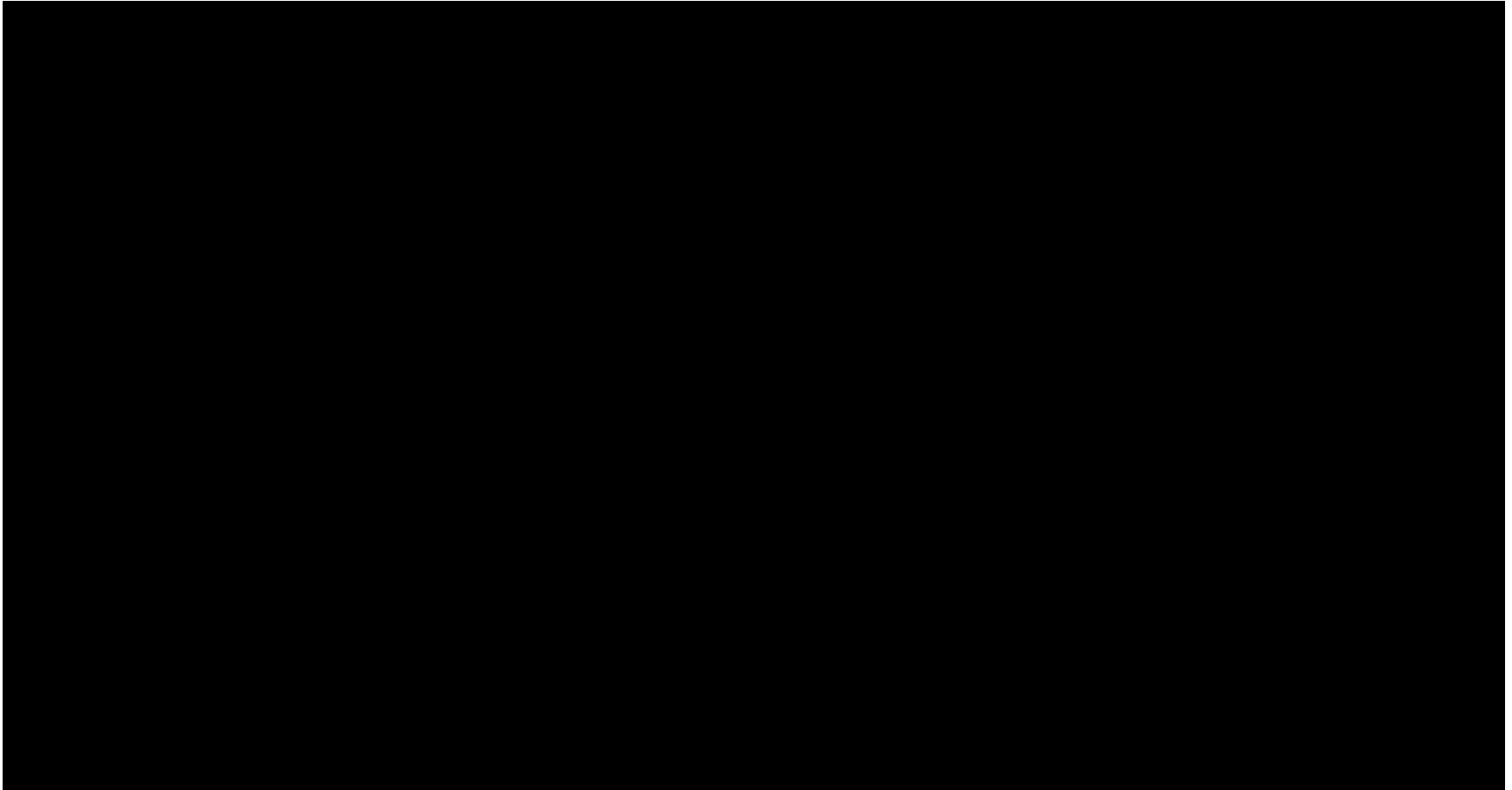


The '10-3-2-1-0 method

- 10 hours before bed: No more caffeine
- 3 hours before bed: No more food or alcohol
- 2 hours before bed: No more work
- 1 hour before bed: No more screen time (shut off all phones, TVs and computers)
- 0: The number of times you'll need to hit snooze in the AM



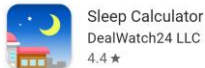
4-7-8 breathing technique (Group activity)





Sleep Calculator

- The average sleep cycle is 90 minutes long.
- A typical night of sleep includes 5 full sleep cycles.
- $90 \times 5 = 450$ minutes, or 7.5 hours.
- Starting at your wake time, work back 7.5 hours to find your bedtime.
- <https://sleepcalculator.com/>



Sleep++ 4+
Automatic Sleep Tracker
Cross Forward Consulting, LLC
★★★★★ 4.1 • 5.5K Ratings
Free · Offers In-App Purchases

Conclusion



Conclusion

- Sleep deprivation is a widespread issue that can have significant negative impacts on physical, mental, and emotional health.
- It is important to understand the causes and effects of sleep deprivation in order to develop effective strategies for overcoming this problem.
- Also it's important to seek medical attention if they are experiencing chronic sleep disturbances.
- By addressing sleep deprivation, individuals can improve their overall quality of life and reduce their risk of a range of health problems.

THANK YOU