A PRACTICAL GUIDE TO RESTORATIVE SLEEP

Sleep Better Guide

Align your daily routine with your body clock
for deeper, more restorative sleep.



RICKY BROWN HEALTH

Sleep · Circadian health · Performance

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> *The best bridge between despair and hope is a good night's sleep.*
>
> E. JOSEPH CROSSMAN

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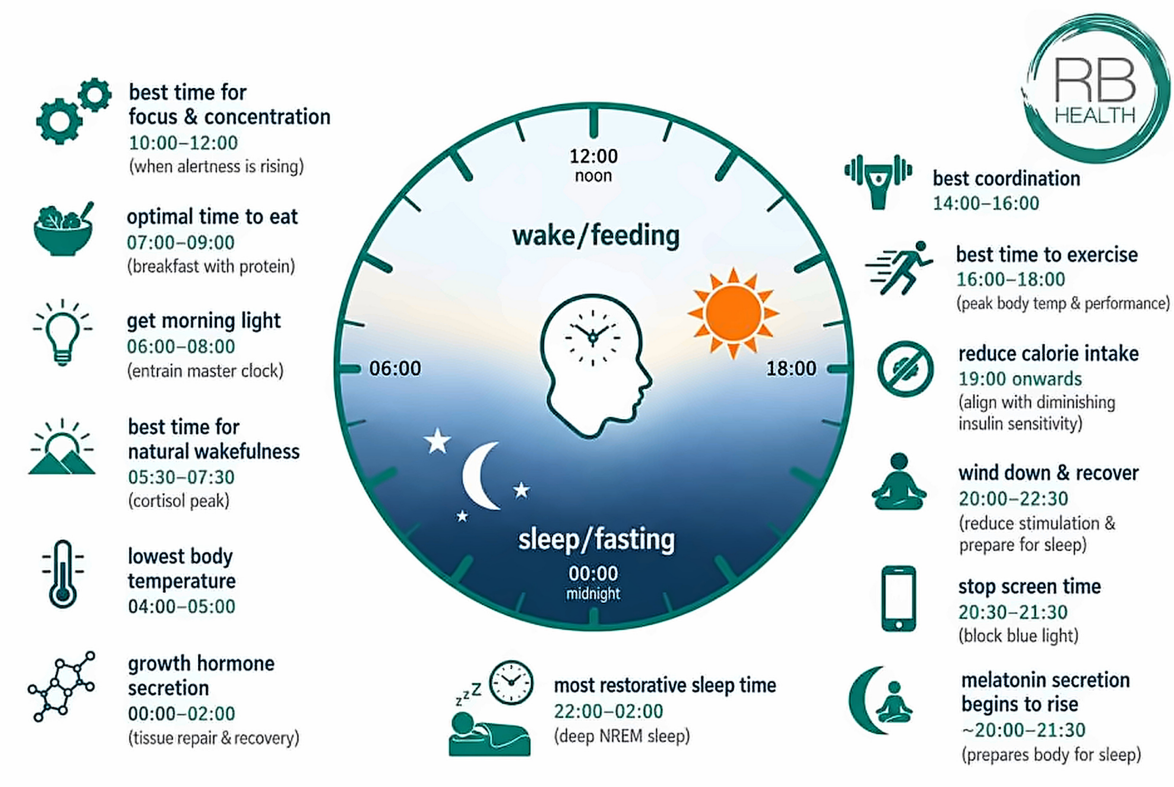
01

Your body clock

Every cell in the human body contains an internal clock that works on an approximate 24-hour expression of physiology and behaviour, known as a circadian rhythm (*circa* meaning approximately or around the, and *diem* or *dies* meaning day).

The clock in each cell is coordinated by a 'master' pacemaker in the base of the brain. This pacemaker is called the suprachiasmatic nuclei, and is sensitive to the light and dark changes we experience through vision. Our growth, repair, immune function, body temperature, blood pressure, sleep, metabolism, and hormonal balance are just a few of the processes that are regulated by our internal circadian rhythm.

Our internal clockwork has evolved to help us achieve peak performance during the day and prepare us for sleep, growth, repair and memory consolidation during the night.



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02

Are you a Morning Lark or a Night Owl?

People possess different genetically influenced predispositions towards morning or evening.

Larks

People who have early sleep/wake cycles and function better earlier in the day.

Owls

People who prefer to function later in the day.

This tendency to be either a morning or a night person has strong influence over our physical and psychological performance.

The light and dark cycle is considered to be our major time cue, or zeitgeber, that influences our circadian rhythm. Other cues that influence our circadian biology are:

- Timing of food intake
- Physical activity
- Social contact

Sleep-related disorders such as insomnia are common in adult life and become more prevalent in the older populations. Individuals with sleep disorders are more likely to develop high blood pressure, depression, heart disease and suffer from a stroke. Conversely people suffering with these conditions have a higher risk of sleep problems.

Common signs of poor sleep

- Low mood
- Fatigue
- Forgetfulness
- Poor concentration
- Lack of motivation
- Reduced sex drive
- Regular waking throughout night
- Difficulty getting to sleep (longer than 30 mins)
- Increased appetite and craving for refined carbohydrates

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How much sleep do you need?

The infographic below is taken from the National Sleep Foundation.org and displays how much sleep is recommended for various age groups.



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Habits that harm our sleep

HABIT 01

Blue light

Blue light is part of the spectrum of light, visible to the human eye, which produces a high amount of energy. Over time, too much exposure to blue light (especially in the evenings) can cause eye problems, contribute to a number of diseases and also disrupt our natural sleep and wake cycles. In the right amount and at the right time of day, blue light is beneficial to our health. Exposure to blue light can improve memory, mood, alertness and brain function. In addition, timely exposure can help regulate the body's natural sleep/wake cycles.

Blue light is everywhere. It comes from the sun and makes the sky look blue. Artificial sources of blue light include artificial lighting and the digital screens of televisions, smartphones, computers and gaming systems. Bedtime use of technology in youngsters is associated with a reduction in both sleep quality and duration. Reading on electronic devices in the hours before bedtime has been shown to suppress the release of our major sleep hormone melatonin, make it harder to get to sleep and increase sleepiness in the morning. A reduction in melatonin production is associated with a number of diseases and disorders including Alzheimer's disease, Fibromyalgia, Migraine, Type 2 Diabetes and Depression.

HABIT 02

Alcohol

Drinking alcohol may help promote deep sleep at the beginning of the sleep cycle but decreases the overall quality and duration of sleep. Alcohol also increases the prevalence of sleep apnea and night time awakenings.

HABIT 03

Caffeine

Caffeine can both reduce feelings of tiredness and contribute to it. People who report taking higher levels of caffeine are more likely to be tired in the morning.

Caffeine is quickly absorbed and is at its maximum level within the blood stream in approximately 30 minutes. The time it takes for the effects of caffeine to wear off varies between people and can be anywhere between 2–10 hours, with an average of 5–6 hours. Even the expectancy of caffeine can stimulate us! Research suggests that caffeine can reduce sleep by more than one hour when consumed 6 hours before bed.

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HABIT 04

Stress

The increased activity of the nervous system as a result of stress, elevates the release of stress hormones and increases alertness. The stress response differs depending on the type of stress experienced and can lead to insomnia. Stress-related insomnia normally lasts for just a few days, however this can become chronic in the presence of ongoing stress.

05

How to protect and enhance your sleep

1 Stick to a sleep schedule

Try to go to bed and wake up at approximately the same time each day, even on the weekend. Social jetlag describes the mismatch between our genetically driven, natural sleep preferences and our actual sleep schedules. Many people sleep in on weekends as a way of trying to compensate for a lack of sleep during the week, however this doesn't make up for a lack of sleep during the week, and is associated with poorer health, low mood and increased tiredness.

2 Expose yourself to natural light early in the day

A good night's sleep starts at the beginning of the day. Exposure to morning daylight helps to regulate our sleep patterns. Being exposed to daylight earlier in the day results in an earlier sleep onset, while being exposed to less daylight and additional artificial light in the evenings is linked to a reduction in sleep duration and quality.

Interestingly, office workers who are exposed to natural light via windows, sleep longer than those working in offices without windows.

3 Exercise outside early in the day

Exercise can improve the sleep quality of people suffering with insomnia. Exercise also improves sleep duration, quality and the ability to get to sleep quicker. Both aerobic and resistance exercise have been shown to improve sleep duration and quality. Performing exercise outdoors in the morning regulates the body's master clock (suprachiasmatic nucleus) and our sleep by exposing us to natural light early in the day.

Exercising in the evening may overstimulate the nervous system and disrupt our sleep, so try to ensure you are exercising at least 2–3 hours before bedtime. Exercising late at night also reduces levels of the sleep hormone melatonin.

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4 Reduce core body temperature

In the evening, our body temperature falls prior to sleep and continues to fall until it reaches its lowest point in the early hours of the morning. A lower core temperature and a higher temperature of extremities is a good predictor of sleepiness and readiness to sleep. A lower core temperature can help improve sleep onset.

Hot baths encourage the body to expel heat from the core towards the periphery, therefore helping to reduce the time it takes to get to sleep and improve overall quality of sleep.

5 Create an environment for sleep

Try to remove anything from your bedroom that may be distracting such as bright lights, phones, noises and warm temperatures. Sleeping near a window where you are exposed to more natural light in the morning may improve sleep quality. Watching television and the use of social media before bed is associated with later sleep times and reduced sleep duration.

6 Experiment with your diet

The ratio of carbohydrate, fat and protein in the diet may affect sleep quality. Diets high in carbohydrate may reduce sleep duration and high fat diets may improve sleep quality. Higher food intake later in the day may negatively affect sleep, especially in females.

Consuming Tart Cherry juice in the morning and evening has been shown to help reduce insomnia and sleep disruption. In addition, eating 2 kiwi fruits one hour before bedtime has been shown to help improve duration of sleep.

7 If you're beyond the age of 60, supplementing with magnesium may help you sleep better.

The prevalence of insomnia in the ageing population is high, with some research suggesting that it is nearly 50% of all elderly adults. Low levels of magnesium can be caused by dietary deficiencies and bone loss. This can affect sleep, through a reduction in melatonin, and magnesium's effect on the central nervous system. Supplementing with 250 mg of magnesium 2 x per day for 8 weeks increases melatonin levels and has been shown to improve sleep. Magnesium Glycinate is a recommended supplement.

8 Limit caffeine, especially later in the day

Try to limit your caffeine intake to 300–400 mg per day, which is equivalent to 3–4 cups of coffee. Try to avoid coffee late in the afternoon, leaving around 6 hours between your last cuppa and bedtime. If you're pregnant, or have hypertension or heart problems, try to avoid caffeine as much as possible.

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9 Wear blue light blocking glasses in the evening

Exposure to room light, late in the evening both suppresses the production of melatonin and shortens the duration of melatonin release. Blue light emitted from the digital screens of devices such as TVs, phones, laptops, gaming devices and tablets, has a much stronger effect on melatonin levels and also impacts our internal clock (circadian rhythm), making us more alert and psychologically stimulated.

Blue light blocking glasses filter out the short wavelengths in the blue light spectrum, which both prevents melatonin suppression and blue light's stimulating effects. Wearing these glasses has been shown to significantly improve subjective sleep quality.

If you're working late on a digital screen, using a phone, tablet or games console late in the evening, or enjoy watching TV before bed, blue light blocking glasses are reasonably priced and will make a useful addition to your sleep hygiene routine. A selection of high quality blue light blocking glasses can be found here.

Screen settings that help

If you use iPhone or iPad, simply using the night shift setting can help to filter out blue light, or alternatively, night mode is the Android compatible version.

F.lux is a popular free app that adjusts your computer display to a more natural colour spectrum throughout the day (warmer at night and brighter during the day). It makes your computer screen look like the room you're in all the time, so be sure to dim your lights after sunset.

06

Keep learning

If you're interested in learning more about the health benefits of living more in sync with your body's natural rhythms, please check out the following resources:

BOOK + TALK

Dr. Satchin Panda

The Circadian Code: Lose weight, supercharge your energy and sleep well every night

Watch his TED Talk HERE

BOOK + TALK

Professor Matthew Walker

Why We Sleep: The New Science of Sleep and Dreams

Watch his TED Talk HERE

Visit the Sleep Foundation website: HERE



Sleep well.

Small, consistent habits add up to deeper, more restorative sleep.

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