



MEMBER UPDATE

ReFresh

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This week...

Chronobiology

Chronobiology is a branch of science analyzing the rhythmic and regular fluctuation of body functions during the day, called biological human rhythms (also referred to as circadian rhythms). These rhythms are a series of bodily functions that control cycles like sleep, wakefulness, body temperature, hormone secretion, and more.

Environmental cues like light exposure and eating habits can maintain or disrupt your biological rhythms; maintaining your biological rhythms is important for your overall health and wellness.

How Biological Rhythms Work

Most biological rhythms work in approximate 24-hour cycles. Depending on the time of the day, our body functions follow cyclical patterns that impact blood pressure, body

temperature, volume of substances in the blood, hormones, and cognitive performance. Circadian rhythms, together with intellectual capability and mood, help to define our typical schedules: during the day we have energy to work, while late in the evening we are sleepy and are ready to rest.

Your biological rhythms are tied to an internal clock in your brain called the suprachiasmatic nucleus (SCN), which is in the part of the brain called the hypothalamus. The SCN is responsible for releasing the main regulator of our circadian rhythms – the hormone melatonin.

Melatonin is an important ‘cog’ in our internal biological clock. It activates or inhibits release of other hormones like prolactin, serotonin, and cortisol. The SCN relies on sunlight to determine when it is time to perform certain functions. Therefore, circadian rhythms are highly affected by light. There can be other factors that influence your internal clock like exercise and medications you might be taking.

Individual Chronotypes

If your internal clock is so powerful, then why is it so hard to wake up in the morning? This is due to varying circadian patterns called your chronotype. For some, there is a biological tendency to deviate from a 24-hour cycle, and these deviations are due to people's personal chronotypes. Researchers believe them to be the cause of people being either an early bird or a night owl.

There are four distinct chronotypes: [click here](#) to see the chronotype that aligns best to you! Apparently, I am a ‘Lion’.

What Throws Off our Rhythm?

Our fast-paced life, stress, irregular eating patterns, and smart phones that keep us engaged have become the ‘norm’ for many of us. These modern-day factors make it difficult to live according to our natural biological clock. Changes to the biological clock become evident when there are sources of artificial light, when we travel across various time zones, and as we work at night.

Biological rhythms change as we get older because with age the generation of melatonin gets weaker and can cause increased tension, fatigue, and a decrease in concentration, and sleep becomes disordered.

The Importance of Maintaining and Resetting Our Rhythms

Maintaining your circadian rhythm is vital to your wellness. You may experience both short-term and long-term consequences to your health when there is a disruption to your circadian rhythm.

Long-term health conditions can appear in several parts of your body, including your:

- organs
- cardiovascular system
- metabolism
- gastrointestinal system
- skin

You may be more susceptible to diabetes, obesity, and **mental illness**.

Even short-term disruptions to your circadian rhythm may result in problems with memory or lack of energy. It takes longer to heal an injury if you don't get enough sleep, so try to ensure you set aside enough time for rest.

If you experience disruptions to your circadian rhythm, you can get it back on track. Here are some tips for promoting a healthy 24-hour schedule:

- Adhere to a daily routine.
- Spend time outdoors when it's light outside to boost your wakefulness.
- Exercise daily — generally, twenty or more minutes of aerobic exercise is recommended.
- Sleep in an environment that promotes rest with proper lighting, a comfortable temperature, and a supportive mattress.
- Avoid alcohol, caffeine, and nicotine in the evenings.
- Power down your screens well before bedtime and try engaging in something analog, such as reading a book or meditating.
- Do not nap late in the afternoon or evening.

When to Talk with a Doctor

If you experience one of these issues for a prolonged period, consider making a doctor's appointment:

- Trouble achieving adequate sleep every night
- Issues falling asleep easily

- Waking several times a night
- Failing to get regular, quality sleep
- Having trouble waking up
- Feeling extremely tired during waking hours

[Click here](#) to learn more about this interesting subject.

Your circadian rhythm is your body's natural way of operating on a healthy sleep-wake schedule. Living a healthy, active lifestyle that promotes proper rest will help you maintain this important component of your body.

Sources

WebMD | [What Are Biological Rhythms?](#)

Chronobiology | [Chronobiology: The Science of Time](#)

Healthline | [Everything to Know About Your Circadian Rhythm](#)