Understanding Circadian Rhythm and Depression

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How Are Circadian Rhythm and Depression Linked?

Your body has a natural flow and rhythm to it. This rhythm cycles through you constantly to create a sense of consistency from one day to the next.

Years, months, and hours are influenced by these rhythms. They dictate many aspects of your functioning and help you stay balanced, comfortable, and healthy.

Issues present when these functions fall out of sync. Over time, poorly regulated rhythms can lead to many ill effects on your physical, mental, and emotional health.

What Is Circadian Rhythm?

It is likely you have heard of circadian rhythms in your life. Even though they are not something you think about on a daily basis, they are a powerful force in your life.

Circadian rhythms are changes in your body that respond to the 24-hour cycle of the Earth's rotation. These changes can be physical, mental, or behavioral, and occur in most living things, including animals and even plants.

Even when people and animals are removed from natural environments, they still respond to cycles that approximate 24 hours because the patterns are so ingrained. Perhaps the best-known role of circadian rhythms is sleeping, but the influence reaches much farther. Circadian rhythms can influence:

- Hormone release
- Body temperature
- Weight
- Blood sugar levels
- Mental health and wellness

Circadian Rhythms and the Master Clock

When you start learning about circadian rhythms, you will encounter other terms like biological clock and master clock.

The biological clocks are a group of molecules in the body that control the circadian rhythm. The master clock rules all others in the body, and is made of nerve cells in a particular area of the brain called the suprachiasmatic nucleus (SCN). It is located within the hypothalamus near the center of the brain.

Researchers investigating the role of the master clock and circadian rhythms can inspect this area of the brain

and note differences. People who have normally functioning circadian rhythms will have SCNs that look one way, while the SCNs of people with dysfunctional circadian rhythms will be different.

Dysfunctional Rhythms

A person with dysfunctional circadian rhythms might present with a wide variety of issues that will vary in intensity and duration. They may have one problem or a combination of many including:

- **Poor sleep.** Sleep problems can consist of sleeping too much or too little, as well as problems falling asleep, staying asleep, and waking too early. Melatonin, a hormone regulated by the SCN, manages sleep. When circadian rhythms are imbalanced, the hormone can be released too much, too little, or at irregular times, leading to sleeping problems.
- **Weight changes.** Your clocks are built to communicate the need to eat during the day, but not at night. Dysfunction can override the normal communication ordering you to eat too often, not often enough, or at inopportune times. These differences in eating times and amounts can lead to drastic differences in your weight and appetite.
- **Activity levels.** Everyone's energy levels cycle during the day, which is partially influenced by your body clocks. During your waking hours, you could find yourself with periods of high energy, low energy, or no energy at all. Poorly functioning rhythms will provide energy when you do not need it and fuel you when you do.
- **Mental illness.** The master clock works with circadian rhythms to produce and release hormones that aid sleep, and they may work to release chemicals related to mental health. Mental health also may be affected indirectly by circadian rhythms: if your sleep is disrupted, your weight is changing, and your energy is low, depression may be a result.

Finding Your Rhythm

At points in your life, you will lose your rhythm. This can be caused by a long plane flight, a new shift at work, a crisis at home, a death in the family, and many other triggers.

To resume your rhythm, you will have to pay more attention to your zeitgebers, which are external cues that sync your rhythms. Here's how:

Light and Dark

It's important you're experiencing dark during the night and light during the day. To sync, try opening shades and blinds in the morning and enjoying the sunshine. On cloudy days, turn on lights or use light therapy to supplement the sun. As the sun goes down, draw the blinds and dim the lights to regulate your body.

Sleep

This means going to sleep and waking up at the same times each day. Erratic patterns will end with you out of sync. Set alarms and follow a schedule to be consistent with your sleeping and waking times.

Food

You can get into sync by eating similarly sized meals at the same times each day. Since foods help regulate your energy, eating at similar times will create a trend for your rhythms to follow.

Exercise

Completing some form of physical activity during the day will help you get back into sync. Exercise will consume your energy as well as provide mood-boosting chemicals to sync your clocks. Experiment with different forms of exercise at different times to study the impact.

Socialization

Having some level of social contact during the day will also help you get into sync. Being connected to others helps to regulate your circadian rhythms. Encourage yourself to be social most days to study the impact on your symptoms.

Circadian rhythms have a far-reaching impact on your physical and mental health. Understanding their power and working to maintain or regain your rhythm will help ensure that your depression is less intense and better managed.