

Our sleep patterns are affected by an internal circadian clock or rhythm.

This circadian rhythm is reset by the sun. Sunlight causes the brain to stop producing the sleep-inducing hormone melatonin. As the sun goes down, melatonin production rises, helping us to unwind and sleep. The brain's production of the 'good-mood hormone' serotonin is also stimulated by sunlight.

Disruptions to our circadian rhythm can be caused by:

- changing of the seasons
- shift work
- time zone changes
- pregnancy
- age
- stress
- medication
- changes in routine.

Upsets in circadian rhythm can cause sleep disorders such as:

- **Seasonal affective disorder** (SAD)
- depression or disturbances in sleep patterns when the seasons change from summer to winter.
- **Non 24-hour sleep wake disorder** - if a person's circadian clock is unable to adjust to a 24-hour day their sleep pattern drifts a little later each day.
- **Delayed sleep phase disorder** (DSPD)
- trouble getting to sleep at night and waking up in the morning. Teenagers are particularly susceptible to DSPD.
- **Advanced sleep phase disorder** (ASPD) - feeling sleepy early in the evening and waking early.



There are a variety of treatment options for sleep disorders caused by circadian rhythm disturbances.

Light therapy

This has become the preferred treatment for disturbances to a person's circadian rhythm. The principle behind this is to help keep people's circadian clocks well adjusted to the 24-hour day.

Exercise and relaxation

Often techniques at night can be enough to counter sleep pattern problems.

Melatonin

For short-term sleep disturbances like jet lag, melatonin supplements are sometimes used. These act like sunlight and can help a person adjust to a new time zone.

Avoid stimulants

Coffee, tea, colas and energy drinks contain stimulants like caffeine. They stay in the system for up to 14 hours and counter the effects of melatonin.

Sleep disorders have long term implications for the health and safety of people who live with them. Shift workers, for example, have an increased risk of digestive disturbances, heart problems, emotional and mental health problems. In addition, industrial accidents are most common on the night shift.

If a circadian rhythm disturbance is causing you ongoing sleep problems, see your doctor for advice and treatment.



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