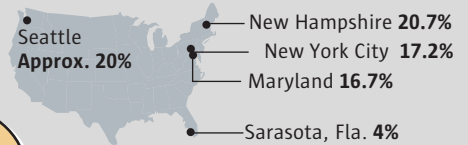


# How light therapy helps cure winter depression

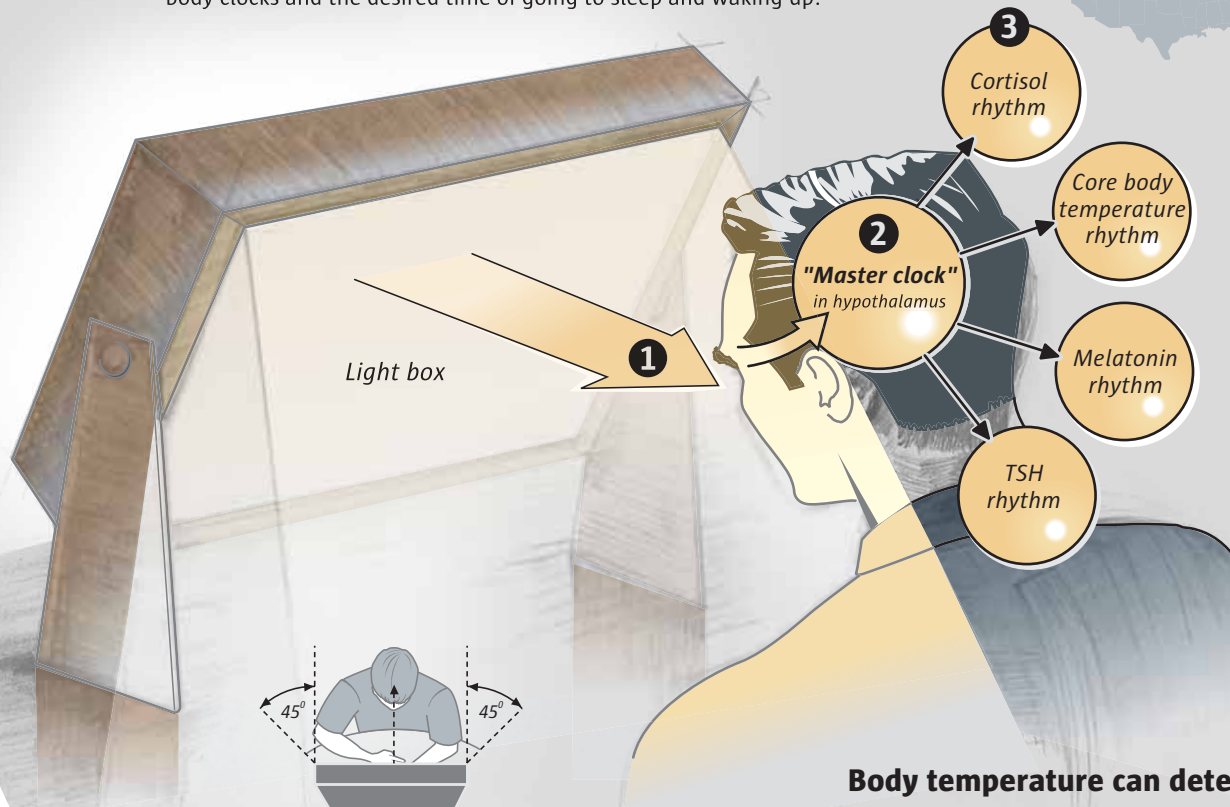
As days grow shorter, and the sun is lower in the sky, many people develop Seasonal Affective Disorder (SAD). According to the prevailing theory, SAD results when a person's sleep-wake cycle is out of sync with other body "clocks." Researchers believe light is crucial to regulating a series of the body's internal clocks. Some regulate the release of chemicals at appropriate times during the sleep-wake cycle, among them TSH (thyroid-stimulating hormone); melatonin, which promotes sleep; cortisol, which aids alertness; and others that control fluctuations in core body temperature. Research has shown that proper use of a light box improves the synchronization between the body clocks and the desired time of going to sleep and waking up.

## Percentage of people experiencing winter blues at different locales



## What light does

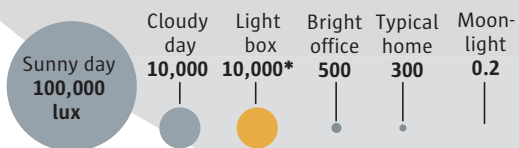
- 1 Light enters through the eyes, stimulating neurons in the retina. The neurons send pulses to the brain's hypothalamus.
- 2 The pulses cause the "master clock" within the hypothalamus to coordinate over 100 internal clocks.
- 3 The master clock determines the timing of the 24-hour rhythms of cortisol, temperature, melatonin and TSH.



Experts recommend facing the light box and positioning it no more than 45 degrees from your line of vision.

## Light boxes vs. natural sources

Measured in lux, a metric measure of illuminance

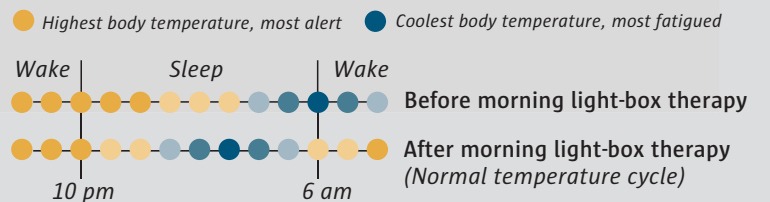


\*The most effective light boxes range from 5,000 to 10,000 lux.

Source: University of Washington, Walter Reed Army Institute of Research

## Body temperature can determine alertness

Usually, SAD patients have difficulty waking in the morning and experience daytime fatigue. If so, the person's body temperature rhythm may be off, meaning his coolest temperature, or the point at which he is most fatigued, is occurring later in the sleep cycle. Exposure to morning bright light resets the timing of the temperature rhythm so the person is more alert when he wakes.



KRISTOPHER LEE/THE SEATTLE TIMES