

Winter Darkness, Season Depression



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A wistful feeling comes over us in late autumn, as the last remaining leaves drop, morning frosts cover the ground, and the sun sets earlier each day. Hot cider and the warmth of a favorite old coat may be all you need to face the coming winter with good cheer, but for many people, fall melancholy deepens to winter [depression](#).

Winter [depression](#) is still a mystery to scientists who study it. Many things, including [brain](#) chemicals, ions in the air, and genetics seem to be involved. But researchers agree that people who suffer from winter [depression](#) – also known as “[seasonal affective disorder](#),” a term that produces the cute acronym SAD – have one thing in common. They’re particularly sensitive to light, or the lack of it.

Many studies have shown that people with seasonal affective disorder feel better after exposure to bright light. It seems simple enough: In higher latitudes, winter days are shorter, so you get less exposure to sunlight. Replace lost sunlight

with bright artificial light, and your mood improves. But it's actually far more complex. Alfred Lewy, MD, a seasonal affective disorder researcher at the Oregon Health & Science University, says it's not only a matter of getting light, but also getting it at the right time. "The most important time to get light is in the morning," he says.

He thinks seasonal affective disorder is due to a "phase-shift" of the circadian rhythm. The wall clock may tell you it's time to get up and at 'em, but your body's internal clock says you should be resting. Bright light in the morning resets your circadian clock.

This is relevant to the "fall back" time change, which happens in places that observe Daylight Saving Time. You might think that setting back the clock one hour would make seasonal affective disorder symptoms worse, because the sun sets one hour earlier. "Actually, I think it's the opposite," Lewy says. "The problem is waking up before dawn."

Lewy says he suspects that "true winter depressives," the people whose problem is biological and not related to other factors, might feel better after the time change. But the improvement would only be temporary, as days continue to shorten.

Arctic Winters

In Fairbanks, Alaska, in the dead of winter, less than four hours separate sunrise and sunset. With so little sunlight, it seems like no one could escape winter [depression](#); but in fact, many Alaskans fare just fine. One study found that about 9% of Fairbanks residents had seasonal affective disorder. That's about the same percentage another study found in New Hampshire.

Mark D., who lives near Fairbanks, says he doesn't suffer from

seasonal affective disorder, even though he rarely sees the sun. He pulls 12-hour shifts working in a power plant.

He stays active in winter, so “cabin fever” isn’t a problem for him, either. “If you sit around the house and do nothing all day I suppose it could eat at you,” he says. “But there is always something for me to do – snow-machine, cut firewood ... or just going into town and have a cup of coffee with friends at the cafe.

“There are people, though, that will have a ten-yard stare in a five-yard room,” he says. Some seek comfort from a bottle, too. “In lots of the smaller villages, that does happen. Drinking is a big problem.”

Seasonal affective disorder researcher Michael Terman, PhD, at the Columbia Presbyterian Medical Center in New York, offers some possible explanations for why seasonal affective disorder isn’t more common in the arctic. For one, people with seasonal affective disorder may be genetically predisposed to [clinical depression](#) and [light sensitivity](#). Most people, in any place, wouldn’t have both genetic traits. “Another way to look at it is that those are the people who are still in Alaska,” he says. People who can’t cope might not stay.

But not everyone affected by seasonal changes has full-blown seasonal affective disorder, so estimates of how many people do have it may be low. “Winter depression is a spectrum of severity,” Lewy says. You may have trouble getting up, have bouts of [fatigue](#) during the day, or feel compelled to overeat, without feeling depressed.

These symptoms can be treated with the same therapy given to seasonal affective disorder patients. Bright light – generated by a special light box that’s much brighter than a normal lamp – is the first option. It’s proven to work, but not for everyone. Also, the right time for it differs from person to person, Terman says. For a night owl, taking light therapy too

early could make seasonal affective disorder worse.

New Ideas

Tom Wehr, researcher at the National Institute of [Mental Health](#), has proposed a new explanation for seasonal affective disorder: It may stem from too much [melatonin](#). When the [brain](#)'s pineal gland starts pumping out [melatonin](#), we get sleepy. During winter, animals secrete melatonin for longer periods than they do at other times of the year. Wehr discovered that people do, too – but only those who suffer from seasonal affective disorder.

Light therapy would still work if melatonin were the main culprit, because light controls melatonin levels. Researchers are also testing a drug called propranolol, which they hope will improve seasonal affective disorder symptoms by curtailing melatonin flow in the morning hours. Lewy is studying the effects of small melatonin doses given in the afternoon, hoping that they will adjust circadian rhythms.

Raymond [Lam](#), MD, researcher at the University of British Columbia, Canada, and others are studying the role of [brain](#) chemicals like serotonin and dopamine. “We know there are interactions between the serotonin system and the circadian system,” Lam says.

Some [antidepressants](#) like [Paxil](#) and [Prozac](#) work for some seasonal affective disorder sufferers. But Lewy says he prefers light therapy to [antidepressants](#), which he says “are probably more of a Band-Aid,” because they’re not specific to winter depression.

Terman has been testing yet another new way to treat seasonal affective disorder. This therapy involves aiming a stream of negatively charged ions at a person sleeping on a special conductive bed sheet. The discovery that high-density negative

ions (not the same ions produced by home air filters) helped people with seasonal affective disorder came accidentally from a previous study. A second study, which will end later this year, has also found a beneficial effect.

The air is full of negative ions in springtime, and not in the winter. But that doesn't explain how ion therapy works. "We don't yet have an answer to that question," Terman says; nevertheless, "We're now convinced that it's real."