

New Treatment Options for Seasonal Affective Disorder

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The most common form of seasonal affective disorder arrives in the fall, tends to worsen in January and February, and then subsides in the spring. The *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) classifies seasonal affective disorder as a subtype or "specifier" of either major depression or bipolar disorder, in which depressive symptoms recur on a seasonal basis. As many as one in five patients with seasonal depressive symptoms actually has bipolar disorder.

About half a million Americans—women more often than men—meet diagnostic criteria for seasonal affective disorder, while many others experience milder symptoms. Symptoms may include loss of pleasure and energy, feelings of worthlessness, inability to concentrate, and an uncontrollable urge to eat sugar and high-carbohydrate foods.

Bright white light therapy has been used to treat seasonal affective disorder since the mid-1980s. Although it remains a mainstay of treatment, in the past few years researchers have investigated ways to improve and refine light therapy.

Traditional light therapy

Fluorescent light boxes are most often used to deliver traditional bright light therapy. Patients usually expose themselves to 30 minutes of light, at an intensity of 10,000 lux (a measure of illumination), upon arising—although individual instructions vary. (By way of comparison, indoor light is about 100 lux, while a bright sunny day is 50,000 lux or more.) Bright white light acts on cells in the retina that connect to the hypothalamus, a part of the brain that helps control circadian rhythms, which are somehow disrupted in seasonal affective disorder.

Two reviews of multiple studies on light therapy, which included only randomized controlled trials, concluded that bright light therapy was as effective at treating seasonal affective disorder as antidepressant therapy, and in some cases more effective.

But investigators have sought to improve on traditional light therapy for three reasons. First, it doesn't work for everyone. Different studies have reported that 50 percent to 80 percent of patients achieve complete relief from depressive symptoms after bright light therapy—and remission may depend upon carefully individualized timing of light.

Second, Dr. Janis Anderson, a psychologist who is director of Seasonal Affective Disorders Clinical Services at Brigham and Women's Hospital, says that dosing remains a major question. Dose depends on the strength of the light source, the patient's distance from the light box, light wavelength, and duration of exposure. The recommendation for 30 minutes of daily exposure to 10,000 lux is based on average response to white light; some patients may not need that much exposure to benefit, or may experience adverse side effects from that amount. Others—such as parents of toddlers—may not be able to sit in front of a device for 30 minutes each morning.

Finally, side effects of bright light therapy, while mild for many patients, may be more of a concern for others. For example, bright light therapy may trigger hypomania or mania in patients with bipolar disorder, which is why mood-stabilizing medications are often recommended at the same time. And while the risk of retinal damage from light therapy is small over all, some medications and medical conditions increase the risk for some patients (see "Retina risk").

Retina riskThe following medications or conditions raise the risk of retinal damage from bright light therapy:

- First-generation antipsychotics
- Lithium
- Melatonin
- St. John's wort
- Diabetes
- Retinopathies

Enhancing light therapy

Investigations are under way to see if changing the timing of light therapy, or using particular

wavelengths of light, might improve response or reduce risk of side effects like mania or retinal damage.

Better timing. Researchers from Columbia University reported that remission from seasonal affective disorder was twice as likely if light therapy was precisely calibrated to melatonin rhythms. They found that 80 percent of patients achieved remission if light therapy began 7.5 to 9.5 hours after an evening melatonin surge, compared with 38 percent of patients whose light therapy began 9.5 to 11 hours afterward.

Individual melatonin shifts may vary by five to six hours, which partially explains why some people are morning "larks" while others are natural "night owls." It's not easy to measure melatonin, but the nonprofit Center for Environmental Therapeutics offers a free online Morningness-Eveningness Questionnaire (MEQ) test that may help clinicians and patients better gauge the timing of therapy. The test is available at www.cet.org.

Dawn simulation. In this variation of light therapy, a preset light device turns on before a patient awakens. Light intensity increases gradually from 0.001 lux (equivalent to starlight) to 250 or 300 lux (similar to sunrise) over a period of 90 minutes.

Although the studies so far have been small, they have also been promising. Dr. Anderson thinks dawn simulation may be worth trying.

Blue light. Traditional devices use white light, a mixture of all the colors (such as blue, green, and red) in the visible light spectrum. The use of light-emitting diode (LED) technology has made it possible to create smaller and more portable devices and test specific wavelengths of light.

Studies have found that ganglion cells in the retina are particularly sensitive to blue light, suggesting that this wavelength may powerfully affect circadian rhythms. Researchers are investigating whether blue light might provide the same benefit as white light but with less exposure time—which might reduce risk of side effects in vulnerable patients.

Blue light includes wavelengths of 455 to 492 nanometers (nm). Some experts caution against exposing patients to wavelengths shorter than 450 nm (where blue turns violet), however, because this may cause retinal damage.

Current guidance

Dr. Anderson and other experts recommend that patients with seasonal affective disorder first try traditional bright white light therapy after awakening. If it does not help or creates bothersome side effects, it may be worth trying antidepressants or one of the alternatives under investigation.

The FDA does not test, approve, or regulate light box devices, so patients considering buying any device should ask about the wavelengths it emits and check to see if it has been used in any reputable research facilities.

More information is available through the Society for Light Treatment and Biological Rhythms, www.sltrb.org/pubinfo.htm.

Sources:

- Lam RW, et al. Canadian Consensus Guidelines for the Treatment of Seasonal Affective Disorder (Clinical and Academic Publishing, 1999).
- Westrin A, et al. "Seasonal Affective Disorder: A Clinical Update," *Annals of Clinical Psychiatry* (Oct.–Dec. 2007): Vol. 19, No. 4, pp. 239–46.
- For more references and a short patient education video, please see www.health.harvard.edu/mentalextra.

More on SAD on MSN Health & Fitness:

- [Symptoms of Seasonal Affective Disorder](#)
- [7 Alternative Depression Treatments](#)
- [Reality Check: SAD](#)

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