



# Seasonal Affective Disorder

*From the* **NATIONAL INSTITUTE of MENTAL HEALTH**

## What is seasonal affective disorder?

Many people go through short periods when they feel sad or unlike their usual selves. Sometimes, these mood changes begin and end when the seasons change. Many people feel “down” or have the “winter blues” when the days get shorter in the fall and winter and feel better in the spring when longer daylight hours return.

Sometimes, these mood changes are more serious and can affect how a person feels, thinks, and behaves. If you have noticed significant changes in your mood and behavior when the seasons change, you may be experiencing seasonal affective disorder (SAD).

In most cases, SAD symptoms start in the late fall or early winter and go away during the spring and summer, known as winter-pattern SAD or winter depression. Other people experience depressive symptoms during the spring and summer months, known as summer-pattern SAD or summer depression. Summer-pattern SAD is less common.

## What are the signs and symptoms of SAD?

SAD is a type of depression characterized by a recurrent seasonal pattern, with symptoms lasting about 4–5 months out of the year. The signs and symptoms of SAD include those associated with depression as well as disorder-specific symptoms that differ for winter-pattern versus summer-pattern SAD.

Not every person with SAD experiences all the symptoms listed below. Learn more about signs and symptoms of depression at [www.nimh.nih.gov/depression](http://www.nimh.nih.gov/depression).

Symptoms of depression can include:

- Persistent sad, anxious, or “empty” mood most of the day, nearly every day, for at least 2 weeks
- Feelings of hopelessness or pessimism
- Feelings of irritability, frustration, or restlessness
- Feelings of guilt, worthlessness, or helplessness
- Loss of interest or pleasure in hobbies and activities
- Decreased energy, fatigue, or feeling slowed down

- Difficulty concentrating, remembering, or making decisions
- Changes in sleep or appetite or unplanned weight changes
- Physical aches or pains, headaches, cramps, or digestive problems that do not have a clear physical cause and do not go away with treatment
- Thoughts of death or suicide or suicide attempts

For winter-pattern SAD, additional symptoms can include:

- Oversleeping (hypersomnia)
- Overeating, particularly with a craving for carbohydrates, leading to weight gain
- Social withdrawal (feeling like “hibernating”)

For summer-pattern SAD, additional symptoms can include:

- Trouble sleeping (insomnia)
- Poor appetite, leading to weight loss
- Restlessness and agitation
- Anxiety
- Violent or aggressive behavior

Winter-pattern SAD should not be confused with “holiday blues”—feelings of sadness or anxiety brought on by stresses at certain times of the year. The depression associated with SAD is related to changes in daylight hours, not the calendar, so stresses associated with the holidays or predictable seasonal changes in work or school schedules, family visits, and so forth are not the same as SAD.

The National Institute of Mental Health (NIMH) has information on ways to get help and find a health care provider or access treatment at [www.nimh.nih.gov/findhelp](http://www.nimh.nih.gov/findhelp).

If you or someone you know is struggling or having thoughts of suicide, call or text the 988 Suicide and Crisis Lifeline at **988** or chat at [988lifeline.org](http://988lifeline.org). In life-threatening situations, call **911**.

The Substance Abuse and Mental Health Services Administration has an online tool to help you find mental health services in your area at <https://findtreatment.gov>.



## How is SAD diagnosed?

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If you or someone you know is showing symptoms of SAD, talk to a health care provider or a mental health specialist about your concerns. They may have you fill out a questionnaire to determine if your symptoms meet the criteria for SAD.

To be diagnosed with SAD, a person must meet the following criteria:

- They have the symptoms of depression or the more specific symptoms of winter- or summer-pattern SAD listed above.
- Their depressive episodes occur during specific seasons (winter or summer) for at least 2 consecutive years. However, not all people with SAD experience symptoms every year.
- Their depressive episodes during the specific season are more frequent than depressive episodes experienced at other times of the year.

## Who develops SAD?

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It is estimated that millions of Americans experience SAD, although many may not know they have this common disorder. In most cases, SAD begins in young adulthood.

SAD occurs much more often in women than in men. Winter-pattern SAD also occurs more often than summer-pattern SAD. Therefore, SAD is more common in people living farther north, where there are shorter daylight hours in the winter. For example, people in Alaska or New England are more likely to develop SAD than people in Texas or Florida.

SAD is more common in people with depression or bipolar disorder, especially bipolar II disorder, which involves repeated depressive episodes and hypomanic episodes (less severe than the typical manic episodes of bipolar I disorder). Additionally, people with SAD tend to have other mental disorders, such as attention-deficit/hyperactivity disorder, eating disorder, anxiety disorder, or panic disorder. Learn more about these disorders at [www.nimh.nih.gov/health](http://www.nimh.nih.gov/health).

SAD sometimes runs in families and may be more common in people who have relatives with other mental illnesses, such as depression or schizophrenia.

## What causes SAD?

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Researchers are still determining what causes SAD. Most research to date has investigated potential causes of winter-pattern SAD because it is more common and easier to study. As a result, less is known about summer-pattern SAD, and more research is needed.

Studies indicate that people with SAD, especially winter-pattern SAD, have reduced levels of the brain chemical serotonin, which helps regulate mood. Research also suggests that sunlight affects levels of molecules that help maintain normal serotonin levels. Shorter daylight hours may prevent these molecules from functioning properly, contributing to decreased serotonin levels in the winter.

Vitamin D deficiency may exacerbate these problems in people with winter-pattern SAD because vitamin D is believed to promote serotonin activity. In addition to vitamin D consumed in food, the body produces vitamin D when exposed to sunlight on the skin. With less daylight in the winter, people with SAD may have lower vitamin D levels, further reducing serotonin activity.

Other studies suggest that both forms of SAD relate to altered levels of melatonin—a hormone important for maintaining the normal sleep–wake cycle. People with winter-pattern SAD produce too much melatonin, which can increase sleepiness and lead to oversleeping.

In contrast, people with summer-pattern SAD may have reduced melatonin levels, consistent with long, hot days worsening sleep quality and leading to depression symptoms. Longer daylight hours, shorter nights, and high temperatures can also cause sleep disruptions. However, these theories have not been systematically tested.

Both serotonin and melatonin help maintain the body's daily rhythm tied to the seasonal night–day cycle. In people with SAD, changes in serotonin and melatonin disrupt normal daily rhythms. As a result, they can no longer adjust to seasonal changes in day length, leading to sleep, mood, and behavior changes.

Negative thoughts and feelings about the winter or summer and its associated limitations and stresses are also common among people with SAD (as well as others). It is unclear, however, whether these thoughts are causes or effects of the mood disorder, but they can be a useful focus of treatment.



## How is SAD treated?

Treatments are available to help people with SAD. They fall into four main categories that can be used alone or in combination:

- Light therapy
- Psychotherapy
- Antidepressant medication
- Vitamin D

Light therapy and vitamin D are treatments for winter-pattern SAD, whereas psychotherapy and antidepressants are used to treat depression in general, including winter- and summer-pattern SAD. There are no treatments specific to summer-pattern SAD.

Talk to a health care provider about the potential benefits and risks of different treatment options and which treatment is best for you. NIMH has tips for talking with a health care provider at [www.nimh.nih.gov/talkingtips](http://www.nimh.nih.gov/talkingtips).



### Light therapy

Since the 1980s, light therapy has been a mainstay for treating winter-pattern SAD. It aims to expose people with SAD to a bright light to make up for the diminished natural sunlight in darker months.

For this treatment, the person sits in front of a very bright light box (10,000 lux) every day for about 30–45 minutes, usually first thing in the morning, from fall to spring. The light box, which is about 20 times brighter than ordinary indoor light, filters out the potentially damaging UV light, making this a safe treatment for most. However, people with certain eye diseases or people taking certain medications that increase sensitivity to sunlight may need to use alternative treatments or use light therapy under medical supervision.

### Psychotherapy

Psychotherapy (also called talk therapy or counseling) can help people with SAD by teaching them new ways of thinking and behaving and changing habits that contribute to depression.

Cognitive behavioral therapy (CBT) is a type of psychotherapy aimed at helping people learn to challenge and change unhelpful thoughts and behaviors to improve their depressive and anxious feelings. CBT has been adapted for people with SAD (known as CBT-SAD). CBT-SAD is typically conducted in two weekly group sessions for 6 weeks that focus on replacing negative thoughts related to the season, such as thoughts

about the darkness of winter or the heat of summer, with more positive thoughts. CBT-SAD also uses a process called behavioral activation, which helps people identify and schedule pleasant, engaging indoor or outdoor activities to offset the loss of interest they typically experience in the winter or summer.

When researchers directly compared CBT-SAD with light therapy, both treatments were equally effective in improving SAD symptoms—although some symptoms got better slightly faster with light therapy than CBT. However, a long-term study that followed SAD patients for two winters found that the positive effects of CBT seemed to last longer.

Learn more about psychotherapy at [www.nimh.nih.gov/psychotherapies](http://www.nimh.nih.gov/psychotherapies).

### Antidepressant medication

Medications used to treat depression (antidepressants) can be effective for SAD when used alone or in combination with talk therapy. Antidepressants work by changing how the brain produces or uses certain chemicals involved in mood or stress.

Antidepressants take time—usually 4–8 weeks—to work. Problems with sleep, appetite, and concentration often improve before mood lifts. It is important to give a medication a chance to work before deciding whether it is right for you. You may need to try several medications to find the one that works best.

Because SAD, like other types of depression, is associated with disturbances in serotonin activity, antidepressant medications called selective serotonin reuptake inhibitors are sometimes used to treat symptoms. These medications can significantly enhance a person's mood.

The U.S. Food and Drug Administration (FDA) has approved an antidepressant called bupropion in an extended-release form designed to last longer in the body. For many people, bupropion can prevent the recurrence of seasonal depressive episodes when taken daily from the fall through early spring.

All medications can have side effects. Talk to a health care provider before starting or stopping any medication. Learn more about antidepressants at [www.nimh.nih.gov/medications](http://www.nimh.nih.gov/medications). You can also learn about specific medications like bupropion, including the latest approvals, side effects, warnings, and patient information, on the FDA website at [www.fda.gov/drugsatfda](http://www.fda.gov/drugsatfda).

### Vitamin D

Because many people with winter-pattern SAD have vitamin D deficiency, vitamin D supplements may help improve symptoms. However, studies testing vitamin D as a treatment for SAD have produced mixed results, with some studies indicating that it is as effective as light therapy and other studies finding no effect.

Talk to a health care provider about any dietary supplements and prescription or over-the-counter medications you are taking. Vitamin D can interact with some medications.

## Can SAD be prevented?

Because the onset of SAD is so predictable, people with a history of the disorder might benefit from starting the treatments mentioned above before the fall (for winter-pattern SAD) or spring (for summer-pattern SAD) to help prevent or reduce depression symptoms. To date, few studies have investigated whether SAD can be prevented.

It is helpful to discuss a personalized treatment plan with a health care provider. A provider can help you decide not only the best treatment option but the best timing to help prevent SAD depressive episodes.

## What are clinical trials and why are they important?

Clinical trials are research studies that look at new ways to prevent, detect, or treat diseases and conditions. These studies help researchers determine if a new treatment is safe and effective in people. The main purpose of a clinical trial is to gain new scientific knowledge so that others may be better helped in the future.

People volunteer for clinical trials for many reasons. Some people join clinical trials to help doctors and researchers learn more about a disease and improve health care. Other people, such as those with health conditions, join to try new or advanced treatments that aren't widely available.

NIMH supports clinical trials at the National Institutes of Health campus in Bethesda, Maryland, and across the United States. Talk to a health care provider about clinical trials, their benefits and risks, and whether one is right for you. For more information, visit [www.nimh.nih.gov/clinicaltrials](http://www.nimh.nih.gov/clinicaltrials).



### For more information

**MedlinePlus (National Library of Medicine)**

<https://medlineplus.gov>

<https://medlineplus.gov/spanish>

(en español)

**ClinicalTrials.gov**

[www.clinicaltrials.gov](http://www.clinicaltrials.gov)

<https://salud.nih.gov/investigacion-clinica> (en español)

**National Institute of Mental Health**

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