



## Seasonal Affective Disorder

Seasonal Affective Disorder (SAD) is a recurrent major depressive disorder with seasonal patterns. Most commonly occurring when the days are the shortest, SAD typically begins in the fall and continues through the winter months. SAD can be caused by the following chemical changes within the body:

### Low Vitamin-D

Insufficient dietary intake and low exposure to sunlight can attribute to low Vitamin-D levels.

### Low Serotonin

Known as the neurotransmitter that contributes to happiness, individuals with SAD often have difficulty regulating serotonin levels when sunlight exposure is reduced.

### Increased Melatonin

A hormone that causes sleepiness, melatonin can be over-produced in response to increased darkness.

### Irregular Circadian Rhythms

The body's 24-hour internal clock is synchronized to respond to the daily rhythmic light-dark changes. These changes tell us when to wake, eat, and sleep. The combined decreased serotonin and increased melatonin can impact the body's circadian rhythm.

### Common Symptoms:

- Sadness
- Lacking energy
- Irritability
- Frequent crying
- Tiredness
- Difficulty concentrating
- Sleeping more than normal
- Withdrawal from social interactions
- Sugar and carbohydrates craving
- Weight gain from overeating

### Individuals Commonly Affected:

- Have a family history of depression.
- Women. Women are 4 times as likely to be affected than men.
- Live farther away from the equator. Likelihood increases living north of Louisiana, USA (>33° N of the equator) and south of Cordoba, Chile (<30° S of the equator)

### Helpful Treatment Options If You've Been Diagnosed with SAD:

- Exercise 30 minutes per day, 3 times per week.
- Maintain your routine year-round. Don't change your hobbies or your social life.
- Eat a well-balanced diet including fiber & protein to combat sugar cravings associated with depression.
- Open your curtains to let the natural light in and spend time outdoors - even if it's cloudy!
- Book a trip to a sunny destination that you can look forward to.
- Practice relaxation techniques.
- Begin using a 10,000 Lux, Light Therapy Box early in the fall. To prevent insomnia, preferred use is in the morning for 20-60 minutes; Sit 2-3 feet away while reading or having breakfast.
- Monitor your Vitamin-D levels and follow your doctor's recommendations:  
Optimal levels are >30 ng/mL  
Insufficient levels <30 ng/mL  
Deficient levels < 20 ng/mL  
Toxic levels are >150 ng/mL
- Seek cognitive behavioral therapy with a skilled therapist.
- Consider SSRI antidepressants, use as prescribed.