

"A sad tale's best for winter" - Shakespeare

"In the dark time of the year the soul's sap quivers" - TS Eliot

Like all animals, human beings react to the changing season with changes in mood and behaviour. Most people seem to eat and sleep slightly more in winter and dislike the dark mornings and short days. For some, however, who suffer from SAD, they experience such severe symptoms that their lives are disrupted and they suffer considerable distress.

Symptoms:

- Sleep is not restorative;
- Overeating: carbohydrate craving is common
- Lethargy
- Depression

These symptoms tend to start from around September each year, lasting until April but are at their worst in the darkest months. SAD symptoms usually disappear in spring, either suddenly with a short period (up to 4 weeks) of hyperactivity (or hypomania), or gradually, depending on the intensity of sunlight in the spring and early summer.

SAD is thought to severely affect about 2% of people in Northern Europe with a further 10% experiencing milder symptoms (sub-syndromal SAD: or 'the winter blues'). The further from the Equator, the higher the incidence, except where there is snow persistently on the ground, when incidence is lower.

More women than men have SAD. Children and adolescents may also suffer from it.

SAD seems to stem from a lack of bright light during the winter months. It is known that nerve centres in the brain control daily rhythms and moods, being stimulated by the amount of light entering the eyes. During the night, the pineal gland makes melatonin, which makes us drowsy. At daybreak, this production ceases, but on dull days, the intensity of the daylight may be insufficient to bring this about.

The neurotransmitter serotonin, which is linked to mood, is a precursor of melatonin.

A study in 1994 ([\[1\]](#)) showed that there is deficient serotonin transmission in SAD, which leads to the receptors for the neurotransmitter becoming supersensitive; light appears to reverse this abnormality, perhaps by increasing serotonin transmission.

In 1997, Penev et al ([\[2\]](#)) noted:

"Here we report new data ... which raise the possibility that light can significantly modify the processing of serotonergic signals by the mammalian brain. ... Suggests new mechanisms that may underlie the beneficial effects of artificial light therapy in circadian timing and mood disorders ... - changes which could have important implications for the use of light as a 'drug' to alter neurochemical activity in the brain."

Treatment centres on replacing the absent bright light. The preferred level is about as bright as a clear spring morning, which necessitates sitting next to a light box for between 15 and 45 minutes a day; (not looking at the light, so reading or doing other tasks).

[\[1\]](#) Rosenthal, NE et al Psychiatry Res 1994 May; 52(2): 181-197 Abnormal Behavioural and Hormonal Responses to m-CPP in SAD

[\[2\]](#) Penev, PD Zee, PC Turek, FW NATURE, 9 January 1997 v385 p123 Serotonin in the Spotlight (letter)