

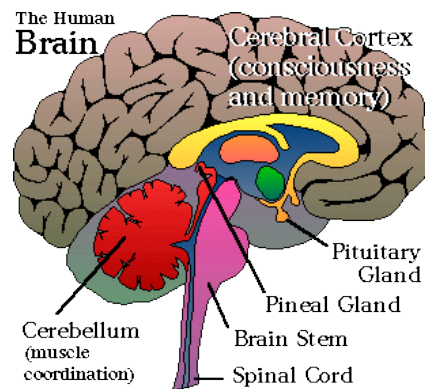
Melancholy Babe

Seasonal Affective Disorder (SAD): More than just a bummer.



Here we are in the depths of Winter. When we go to work it's dark and when we leave work it's dark...and in between it's often cold and rainy or snowy. For thousands of people, Winter is a time to dread because they suffer from Seasonal Affective Disorder. The symptoms of SAD are depression, fatigue, irritability, feeling withdrawn, a tendency to overeat, sleep excessively, and decreased sex drive.¹ In the Summer, these same people feel happy, energetic, and active.¹

What goes wrong? If you think you have SAD, this is a clear case where it's definitely not "all in your head". Your body's internal clock, the circadian system, is regulated by the pineal gland. The pineal gland is located at the base of the brain and has been called the Third Eye since ancient times. This gland is controlled by the presence or absence of external light. Melatonin is secreted at night by the pineal gland to set and maintain the internal clock. Short days, irregular or long work hours, and travel between time zones upset the synchronization of this gland and coordination of the body's natural rhythms and functions.¹



Depression and inflammation. Besides being very difficult to tolerate, depression is linked to increased risk of heart disease, type-2 diabetes mellitus, osteoporosis, certain cancers, periodontal disease, arthritis, Crohn's disease, Alzheimer's disease, frailty, and aging.^{3,4,5}

Recently, several studies have found that even moderate depression results in a prolonged elevation of interleukin-6 (IL-6), the key element in the body's response to disease or injury.^{7,8,9} Certain cells are stimulated to produce the molecule IL-6 which attaches to white blood cells. This encourages an immune response, causing the white blood cells to produce antibodies and proteins, and triggering inflammation. Inflammation is one of the body's immune responses. What the studies have found is that people with mild to severe depression exhibit significantly elevated levels of IL-6 over a prolonged period which in turn causes a long-term inflammatory response. Chronic inflammation is the likely source of the many health problems associated with depression. And chronic inflammation is a serious problem if you are suffering from Repetitive Strain Injury (RSI).

Treatment. If you are feeling the symptoms of SAD, it behooves you to remedy your blues, especially if you have inflammation due to RSI or if you are predisposed to one of the many conditions exacerbated by depression. You truly are hurting yourself by feeling melancholy. Thankfully, there are some simple things that can change this.

- *Full spectrum light.* Increasing your exposure to full spectrum lighting can probably do more than anything else. Either replace bulbs in your current fixtures with full spectrum bulbs or purchase a special light box that mimics sunlight.^{1,2} Sit about 18" from the light keeping your head and eyes toward the light while reading or doing other tasks. Early morning sessions from 15 minutes to 2 hours can bring improvement within a week.^{1,2} Another option is to exercise outdoors in the middle of the day and face the sky every now and then.²
- *Supplements.*
 - *St. John's Wort (Hypericum perforatum).* Use of this herb has long been used in folk medicine to treat depression. It has now been shown through clinical trials to be a useful antidepressant.^{1,2,14} Hypericum treatments lower the amount of light necessary to obtain a therapeutic effect, making normal daylight as effective as intensive light therapy when incorporated with St. John's Wort treatments. A typical dose is 250-300 mg 2-3 times daily.¹⁹ Since the active ingredient in St. John's Wort is not known, standardized extracts are not necessary.¹⁹ Adverse effects of St. John's Wort have been reported as sensitivity to sunlight. Cows and sheep, which may eat large amounts of the plant have become sick or died from hypersensitivity to the sun. It may be that sheep process St. John's Wort differently than humans, or that they are consuming such massive quantities that they have an adverse reaction. Humans taking a normal dose of St. John's Wort have rarely reported such problems.¹⁹ If someone is taking other drugs that increase sensitivity to UV light or sunlight such as sulfa drugs or Feldene, or if you are receiving UV treatments, do not consume St. John's wort.¹⁹ Do not take St. John's Wort if you are taking prescription anti-depressants.¹⁹
 - *Melatonin.* Some people respond well to melatonin supplements if well-timed, that is about 14 hours after wake time.⁶
 - *Brain serotonin* is used in the production of melatonin by the body. Support of serotonin via nutrients can elevate mood, reduce aggression, increase pain threshold, reduce anxiety, and relieve insomnia.¹ Serotonin is synthesized by the body in a 2-step process from the amino acid tryptophan.¹⁶ Serotonin is more sensitive to diet than any other neurotransmitter in the brain.¹⁶ Carbohydrates can increase the levels of tryptophan in the body and they trigger the release of insulin which causes the body to absorb all amino acids except tryptophan.¹⁶ As a result, tryptophan remains in the bloodstream until it crosses into the brain (the blood-brain barrier) where it is converted to serotonin.¹⁶

Vitamin B6 also influences the rate at which serotonin is produced.¹⁶ An optimal dietary intake of 1.3 to 1.7 mg of Vitamin B6 is advised (the lower level for younger people, the higher level for men over 50) with no evidence that higher levels are beneficial.¹⁸ Good sources of Vitamin B6 are nutritional and brewer's yeast, sunflower seeds, wheat germ, soybeans, walnuts, lentils, lima beans, sunflower seeds, buckwheat flour, bananas, and avocados.¹⁸

A high blood concentration of large neutral amino acids (LNAA) interferes with the availability of tryptophan in the brain, so it is the ratio of tryptophan/LNAA that makes the difference.¹⁷ Meals that offer a high ratio of tryptophan to LNAA improve mood and sleep.¹⁷ Foods with a high tryptophan/LNAA ratio must be eaten alone or with lots of carbohydrates in order for the tryptophan to be transported to the brain.¹⁶ Foods with a high ratio of tryptophan/LNAA are: milk, sunflower seeds, eggs, raw soybeans, Parmesan cheese, cheddar cheese, pasta, pork chops, caribou, potato chips, and sweet potatoes.¹⁶

- *Folic acid, B12, and other B vitamins* are not fully understood, but are responsible for anti-depressive effects. Low levels of B vitamins in general are associated with depression and behavioral changes, so a multivitamin containing high dose of all B vitamins should be considered.

- *Vitamin D.* One small study found that Vitamin D was more effective than light therapy in reducing depression.¹³ Subjects received 1,000 I.U. of Vitamin D for one month and depression scores were significantly reduced. Since Vitamin D is produced when the skin is exposed to sunlight, it follows that this may be a factor in reducing depression in SAD patients.
- *Other Factors.*
 - *Unbalanced diet.* Avoid simple carbohydrates like white rice, white bread, sugar, and honey that can cause spikes and drops in insulin levels and associated mood swings.¹⁵ Substitute the good carbs found in veggies, fruit, and beans for sweets and refined starches.¹⁵ Keep healthy snacks on hand such as fruit, veggies, cheese, nuts, deli meats, peanut butter, and popcorn. Avoid caffeine or consume it moderately only after eating.¹⁵
 - Research has found that an extremely high level of *fluoride* accumulates in the pineal gland, even more than in bones.¹⁰ Animals treated with high levels of fluoride were found to have lower melatonin production than animals treated with low levels of fluoride. It is not known what the interference is exactly, but use of fluoride may be problematic for people susceptible to SAD since melatonin is synthesized in the pineal gland.¹¹
- *Pharmaceuticals.*
 - *Prozac and Zoloft.* These antidepressants may be prescribed in severe cases, though they often have unpleasant side effects such as flatness of emotion, dry mouth, constipation, weight gain, and others.^{12,14} There is hope that a current study of the IL-6 receptor will lead to the development of a drug that will block the receptor and reduce the immune response. Clearly it will be a while before such a drug can be developed, tested, and marketed, but it could relieve the symptoms of SAD and the dangers of cardiovascular disease and arthritis.

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This article and all of our articles are intended for your information and education. We are not experts in the diagnosis and treatment of specific medical or mental problems. When dealing with a severe problem, please consult your healthcare or mental health professional and research the alternatives available for your particular diagnosis prior to embarking on a treatment plan. You are ultimately responsible for your health and treatment!

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RESOURCES:

Indoor Sunshine - <http://www.sunlightsciences.com/> - Light Boxes, spiral lights, tubes, etc.

Verilux - <http://www.verilux.com/full-spectrum-lightbulbs> – Light therapy fixtures and devices, light tubes, CFL's, etc.

NOSAD, The National Organization for Seasonal Affective Disorder support group for sufferers of SAD. P.O. Box 451, Vienna, VA 22180. <http://www.psychiatry.msu.edu/SADInfo1.pdf>, <http://www.psychiatry.msu.edu/SADInfo2.pdf>, and <http://www.psychiatry.msu.edu/SADInfo3.pdf>

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