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Dark days of seasonal disorder: SAD has been recognized since the 1980s, but medical experts still haven't figured out the cause

Margaret Williams could do with a visit to the hairdresser. Her chipped nails could stand some attention too. But Williams doesn't care. She doesn't even want to get into the shower.

This bright doctor of English literature, instructor, and writer has lived with herself long enough to recognize a red flag. She knows that when she doesn't want a shower, she is perched at the start of a downward spiral. If she isn't careful, she'll be sucked into a dark, miserable vortex where the world loses its colours and everything makes her weep.

"Better get more light, Margaret," she thinks to herself.

Williams has seasonal affective disorder, or SAD, a mental illness that sparks the scenario described above every fall as the hours of daylight dwindle. She is pretty good at monitoring herself now, but still, sometimes she won't notice the early warning signs. As backup, she has always confided in one colleague at work so she can be given the heads up if she starts acting differently.

"I have to trust the person," she says. "If they mentioned something, then I would know I needed to take more light or up my pills."

But there was a strange reluctance to do what was needed, she says.

"I didn't feel like I wanted to be bothered. It's hard. You are already miserable and everything you are inclined to do will make you more miserable. But once I dealt with it rationally, I was fine."

Left untreated, SAD will drive her inside, and she will withdraw from everything she loves. The fall and winter months become dark days indeed, not just outside but inside her malfunctioning brain as well.

"The time change is like a hammer coming down," she says, noting the shorter daylight hours play havoc with her biological clock. "It is so hard to deal with."

Williams lives Campbell River, where rain falls almost half of the days (173) in an average year and where almost everyone gets a bit of the winter blahs.

But SAD is much more than that. It's a clinically diagnosed depression that usually knocks people flat in the fall and clears on its own each spring. Although typically associated with the winter months, a summertime variant has also been identified.

Treatment requires more than a daily walk in the park during the winter months. Being told to buck up doesn't do the trick either. Exercise, which can release happy-making endorphins, is recommended. But telling someone to get exercise when all they want to do is climb under the covers is unlikely to meet with much compliance, says Dr. Raymond Lam, director of the Mood Disorders Clinic at the University of B.C., who studies SAD.

Williams spent two full years seeking treatment. She saw a psychiatrist who tried counselling her and prescribed medications. Every month for 10 months, she tried a new drug. One made her talk to herself out loud, another made her clench her teeth to the point of chipping one. On some drugs, she gained weight. On some, she lost interest in sex.

One day, she mentioned that as a student, she used to crave the lights in the suntan parlours and the lightbulb went on for the psychiatrist. She prescribed two hours of bright light every morning under special bright lights, combined with 10 mg of an SSRI anti-depressant.

Luckily, Williams had an extended medical plan that paid for two years of psychiatric therapy. What about people who don't?, she asks. Depression is very serious.

Like others who are depressed, people with SAD lose the ability to concentrate, lose interest in their normal activities and cry at inopportune times. They contemplate suicide.

Unlike most people with depression, who can't sleep and lose their appetites, people with SAD crave carbohydrates, eat voraciously and sleep a lot, yet never feel refreshed. The depression is just as deep as other forms, but it clears on its own when the days get longer.

While there are still some skeptics about SAD, the disorder has been recognized by psychiatry since the early 1980s. But 25 years later, they still haven't figured out the cause. They just know how to treat it.

Give them light. Bright light for half an hour every morning. After seven days, they will feel better.

"It's a remarkable thing to see," Lam says. "You can have quite severe symptoms and after one week in front of the light box you feel substantially better."

Compare that to antidepressants which can take up to eight weeks to become fully effective and which, a study by Lam found, are no more effective.

The light therapy was based on the idea that people with SAD were less evolved than others, more like animals whose biological clock responds strongly to the number of daylight hours in a day.

"Just by turning on an ordinary lightbulb, you can fool an animal into thinking it's summer," he says noting they secrete less melatonin with the light on.

It is still a major working hypothesis for the cause of the disorder, though it has evolved to recognize that all humans respond to light, not just SAD patients. Humans just need a much brighter light.

Once scientists figured that out, light therapy was born. Two-thirds to three-quarters of SAD patients respond well to light therapy alone.

They need light that is at least 2,500 lux or five times as bright as the brightest indoor office light to shift their biological clock. And they are better served by one with 10,000 lux, which is 20 times brighter.

For context, a sunny day emits 50,000 lux and a cloudy day puts out 5,000 lux.

But since the biological clock disorder is connected to the day's length, not the day's brightness, most people with SAD can't just take the light at any time. They have to do it at dawn. Williams gets up at 5:30 a.m. to sit by the light. She learned to do water colours while there. She found she needs a low dose of an antidepressant as well to keep her equilibrium. But by using the light, she keeps the medication dose and its side-effects in check.

Light therapy has evolved over time too, from huge stationary 2,500 lux light boxes emitting white light, to hand-held LED "Lite books" which at about \$180 are cheaper and use less energy because they use blue light, a spectrum of light found to be more effective.

Light therapy definitely works, but scientists are still perplexed about why.

The problem with the biological clock theory is that it's almost impossible to prove.

While we know the human biological clock is strongly affected by light, sleep and activity also affect it. So in order to do these studies, you have to find ways to control for all the other things that affect the clock, says Lam.

"The best way to do that is to isolate people in a cave so the clock runs free without any influences. Those studies are very difficult to do," he says. "It's hard to find volunteers willing to spend three weeks in an isolation tank."

The other problem is that people whose clocks seem to be off-kilter, don't always get better with light and the people who do get better don't always show a change in their clock.

Now another theory is shedding some light on the issue.

Researchers have noticed that people with disorders such as attention deficit hyperactivity disorder or bulimia -- disorders associated with disturbances in neurotransmitters serotonin and dopamine -- have seasonal fluctuations in the severity of their symptoms.

"We've done a number of studies showing how common seasonal patterns are with bulimia," says Lam. "With bulimia, 30 per cent of them worsen in their bulimia in the wintertime, so we think there may be a connection in terms of some of these neurotransmitters."

Maybe the overeating associated with SAD causes the binges in people with bulimia.

Lam and his colleagues also tested the dopamine connection. They depleted levels of dopamine in nine SAD patients and found it made the patients depressed, even though it was summer and not the time of year when they usually got depressed. When they gave the patients a placebo, it did not achieve the same effect.

In terms of attention deficit hyperactivity disorder, Dr. Robert Levitan, an associate professor of psychiatry at the University of Toronto and his associates found that women who have ADHD may be even more at risk of SAD than women in general.

For about eight years, while running a SAD clinic, Levitan noted that a number of his SAD patients also had ADHD. He suspected there might be some connection between the two disorders and joined forces with colleagues at an adult ADHD clinic to do a study to see whether he could confirm his suspicion.

They gave a questionnaire to 130 ADHD patients at the clinic to determine whether they might also have SAD. Indeed, the incidence of SAD in this group turned out to be four times higher than one would expect in the general population, suggesting that SAD may have a link with ADHD.

Other studies have shown beneficial effects of light therapy on women suffering from pre-menstrual syndrome. These studies bolster the neurotransmitter theory, but Lam says they don't disprove the biological clock hypothesis. "They are not mutually exclusive," he says.

The way the clock acts in terms of controlling sleep and eating patterns and mood is likely through these neurotransmitters, he explains, noting there is a bit of a chicken and egg effect going on.

"Is it really a disturbance of the clock that is affecting the neurotransmitters or is it the neurotransmitters are affected and the clock is trying to compensate? It could be both. There may be different reasons why people get these symptoms."

Lam doubts the all the answers will emerge in the near future, but he says advances in light technology and in understanding of the disease are making a difference for people like Margaret Williams.

She has learned how to manage her symptoms and still have a career.

That's pretty good, she says.

SAD SYMPTOMS: Facts about SAD from the Mood Disorders Clinic at UBC. More information is on their website at www.psychiatry.ubc.ca/mood/sad

Seasonal Affective Disorder is not bipolar disease nor just a case of the winter blues or cabin fever. It is a clinically diagnosed depression that some people experience in the dark days of fall and winter.

Symptoms include over-sleeping, extreme fatigue, increased appetite with carbohydrate cravings, overeating and weight gain. With more severe episodes, people may have suicidal thoughts.

Experts estimate that up to 120,000 people in B.C. may have difficulties in the winter due to significant clinical depression. Another 15 per cent of people have the "winter blues" or "winter blahs" -- winter symptoms similar to SAD, but not to the point of clinical depression.

Research has shown that many patients with SAD improve with exposure to bright artificial light, called light therapy, or phototherapy. As little as 30 minutes a day of sitting under a special light box results in significant improvement in 60 to 70 per cent of SAD patients.

Medications commonly prescribed for depression, including antidepressant medications, such as selective serotonin reuptake inhibitors, or SSRIs, are also effective for patients with SAD. Counselling may also help. People with milder symptoms of the "winter blahs" may be helped by simply spending more time outdoors and taking a daily noon-hour walk.

There are no known long-term harmful effects of light therapy, but some people may experience nausea, headaches, eye strain, or feeling "edgy" when they first start using the light box. These effects usually get better with time or reducing the light exposure.

TEN WAYS TO BEAT THE WINTER BLAHS

1. Stop wearing sunglasses, except in extremely bright conditions, to allow more light into your eyes.
2. Try to get daily exercise outdoors during daylight hours. If it is too cold outside, exercise indoors near a south-facing window.
3. When it's not too cold outside, allow natural, unobstructed light inside through open doors and windows.
4. Ask to sit near a window in restaurants or classrooms.
5. Set up bright lights in your workplace.
6. Stay on a regular schedule by waking up and going to sleep at the same time every day. SAD sufferers with regular schedules are less fatigued than those with irregular schedules.
7. Use a high-intensity "light box" or "light book" for half an hour a day to increase your exposure to light.
8. Put lights in your bedroom on a timer to switch on half an hour before you wake up.
9. If you can, try to schedule a winter vacation in a tropical, sunny climate.
10. If you suffer from severe depression in the winter, consult your physician.

Compiled by Karen Gram
kgram@png.canwest.com

TODAY: About 120,000 British Columbians suffer a clinical depression called Seasonal Affective Disorder.