

NIH News in Health

National Institutes of Health · Department of Health and Human Services · newsinhealth.nih.gov

Inside News: 3 Radon Risk... 4 Trust Rises With Age... Salivary Gland Gene Therapy... Parenting and Drug Abuse

Beat the Winter Blues Shedding Light on Seasonal Sadness

As the days get shorter, many people find themselves feeling sad. You might feel blue around the winter holidays, or get into a slump after the fun and festivities have ended. Some people have more serious mood changes year after year, lasting throughout the fall and winter when there's less natural sunlight. What is it about the darkening days that can leave us down in the dumps? And what can we do about it?

NIH-funded researchers have been studying the "winter blues" and a more severe type of depression called seasonal affective disorder, or SAD, for more than 3 decades. They've learned about possible causes and found treatments that seem to help most people. Still, much remains unknown about these winter-related shifts in mood.

"Winter blues is a general term, not a medical diagnosis. It's fairly common, and it's more mild than serious. It usually clears up on its own in a fairly short amount of time," says Dr. Matthew Rudorfer, a mental health expert at NIH. The so-called winter blues are often linked to something specific, such as stressful holidays or reminders of absent loved ones.

"Seasonal affective disorder, though, is different. It's a well-defined clinical diagnosis that's related to the shortening of daylight hours," says Rudorfer. "It interferes with daily functioning over a significant period of time." A key feature of SAD is that it follows a regular pattern. It appears each year as the seasons change, and it

goes away several months later, usually during spring and summer.

SAD is more common in northern than in southern parts of the United States, where winter days last longer. "In Florida only about 1% of the population is likely to suffer from SAD. But in the northernmost parts of the U.S., about 10% of people in Alaska may be affected," says Rudorfer.

As with other forms of depression, SAD can lead to a gloomy outlook and make people feel hopeless, worthless and irritable. They may lose interest in activities they used to enjoy, such as hobbies and spending time with friends.

"Some people say that SAD can look like a kind of hibernation," says Rudorfer. "People with SAD tend to be withdrawn, have low energy, oversleep and put on weight. They might crave carbohydrates," such as cakes, candies and cookies. Without treatment, these symptoms generally last until the days start getting longer.

Shorter days seem to be a main trigger for SAD. Reduced sunlight in fall and winter can disrupt your body's internal clock, or circadian rhythm. This 24-hour "master clock" responds to cues in your surroundings, especially light and darkness. During the day, your brain sends



signals to other parts of the body to help keep you awake and ready for action. At night, a tiny gland in the brain produces a chemical called melatonin, which helps you sleep. Shortened daylight hours in winter can alter this natural rhythm and lead to SAD in certain people.

NIH researchers first recognized the link between light and seasonal depression back in the early 1980s. These scientists pioneered the use of light therapy, which has since become a standard treatment for SAD. "Light therapy is meant to replace the missing daylight hours with an artificial substitute," says Rudorfer.

continued on page 2

Subscribe @

newsinhealth.nih.gov

continued from page 1

In light therapy, patients generally sit in front of a light box every morning for 30 minutes or more, depending on the doctor's recommendation. The box shines light much brighter than ordinary indoor lighting.

Studies have shown that light therapy relieves SAD symptoms for



Wise Choices Lift Your Mood

These "self-care" tips might help with seasonal depression. See a mental health professional if sadness doesn't go away or interferes with your daily life:

- Go to a movie, take a walk, go ice-skating or do other activities you normally enjoy.
- Get out in the sunlight or brightly lit spaces, especially early in the day.
- Try to spend time with other people and confide in a trusted friend or relative.
- Eat nutritious foods, and avoid overloading on carbohydrates like cookies and candies.
- Be patient. You won't suddenly "snap out of" depression. Your mood will improve gradually.
- If you have thoughts of suicide, get help right away. Call the toll-free National Suicide Prevention Lifeline at 1-800-273-TALK (8255).

as much as 70% of patients after a few weeks of treatment. Some improvement can be detected even sooner. "Our research has found that patients report an improvement in depression scores after even the first administration of light," says Dr. Teodor Postolache, who treats anxiety and mood disorders at the University of Maryland School of Medicine. "Still, a sizable proportion of patients improve but do not fully respond to light treatment alone."

Once started, light therapy should continue every day well into spring. "Sitting 30 minutes or more in front of a light box every day can put a strain on some schedules," says Postolache. So some people tend to stop using the light boxes after a while. Other options have been tested, such as light-emitting visors that allow patients to move around during therapy. "But results with visors for treating SAD haven't been as promising as hoped," Postolache says.

Light therapy is usually considered a first line treatment for SAD, but it doesn't work for everyone. Studies show that certain antidepressant drugs can be effective in many cases of SAD. The antidepressant bupropion (Wellbutrin) has been approved by the U.S. Food and Drug Administration for treating SAD and for preventing winter depression. Doctors sometimes prescribe other antidepressants as well.

Growing evidence suggests that cognitive behavioral therapy (CBT)—a type of talk therapy—can also help patients who have SAD. "For the



Web Links

For more about seasonal affective disorder, click the "Links" tab at:

<http://newsinhealth.nih.gov/issue/Jan2013/Feature1>

'cognitive' part of CBT, we work with patients to identify negative self-defeating thoughts they have," says Dr. Kelly Rohan, a SAD specialist at the University of Vermont. "We try to look objectively at the thought and then reframe it into something that's more accurate, less negative, and maybe even a little more positive. The 'behavioral' part of CBT tries to teach people new behaviors to engage in when they're feeling depressed, to help them feel better."

Behavioral changes might include having lunch with friends, going out for a walk or volunteering in the community. "We try to identify activities that are engaging and pleasurable, and we work with patients to try to schedule them into their daily routine," says Rohan.

A preliminary study by Rohan and colleagues compared CBT to light therapy. Both were found effective at relieving SAD symptoms over 6 weeks in the winter. "We also found that people treated with CBT have less depression and less return of SAD the following winter compared to people who were treated with light therapy," Rohan says. A larger NIH-funded study is now under way to compare CBT to light therapy over 2 years of follow up.

If you're feeling blue this winter, and if the feelings last for several weeks, talk to a health care provider. "It's true that SAD goes away on its own, but that could take 5 months or more. Five months of every year is a long time to be impaired and suffering," says Rudorfer. "SAD is generally quite treatable, and the treatment options keep increasing and improving." ■

NIH News in Health (ISSN 1556-3898)

National Institutes of Health

Office of Communications
& Public Liaison
Building 31, Room 5B64
Bethesda, MD 20892-2094
nihnewsinhealth@od.nih.gov
Tel: 301-435-7489 Fax: 301-496-0019

Attention Editors Reprint our articles and illustrations in your own publication. Our material is not copyrighted. Please acknowledge *NIH News in Health* as the source and send us a copy.

Managing Editor Harrison Wein, Ph.D.

Editor Vicki Contie

Contributors Vicki Contie, Alan Defibaugh (illustrations), Meghan Mott and Harrison Wein

newsinhealth.nih.gov

For more health information from NIH, visit

<http://health.nih.gov>



Radon Risk

Its Perils Can be Prevented

If you're buying a new home, the house may need to be tested for radon, depending on local laws. Although the tests aren't required everywhere, you should insist on it. You might not be able to see or smell radon, but it can still harm you—slowly, and in ways that you can't detect.

Radon is a colorless, odorless, radioactive gas. It comes from the natural decay of the radioactive chemical elements uranium or thorium. These elements are found in nearly all soils. Radon gas typically moves up through the ground and comes into homes through cracks in floors, walls and foundations. Sometimes it enters the home through well water. Certain building materials can give off radon, too. However, building materials rarely cause radon problems by themselves. Whatever the source, your home can trap radon inside, where it can build up.

Surveys show that radon levels vary widely across the country. But high levels can occur in any area, and any home may have a radon problem. This means new and old homes, well-sealed and drafty homes, and homes with or without basements. Nearly 1 out of every

15 homes in the United States is estimated to have elevated radon levels. Elevated levels have been found in homes in every state.

Radon gas breaks down quickly, giving off tiny radioactive particles that can get trapped in your lungs when you breathe. As they break down further, these particles release small bursts of energy. This can damage lung tissue and raise your risk of developing lung cancer.

Radon exposure is thought to be the second leading cause of lung cancer after active smoking—and the leading cause among people who have never smoked. Scientists estimate that 15,000 to 22,000 lung cancer deaths nationwide each year are related to radon.

Scientists believe that there are no safe levels of radon in the home. The effects of being exposed accumulate over time so that it may take many years for disease to appear. NIH-funded scientists have been working to better understand the relationship between radon exposure and cancer risk.

The good news is that many radon-related lung cancer deaths can be prevented. But testing is the only way to know if you and your family are at risk. The Environmental Protection Agency (EPA) and the U.S. Surgeon General recommend testing all homes below the third floor for radon. Testing is inexpensive and easy. It should only take a few minutes. You can purchase radon test kits by calling the EPA-supported National Radon Hotline at 1-800-SOS-RADON (1-800-767-7236).

If you're not comfortable doing the testing yourself, you can have a professional do it. Many states



require radon professionals to be licensed, certified or registered. To find your state's resources, go to www.epa.gov/radon/wherelive.html.

If it turns out you do have high radon levels in your home, you can take steps to lower those levels—a process called radon mitigation. Some radon reduction systems can reduce radon levels in your home by up to 99%. Even very high levels can be reduced to acceptable levels. Find out more about fixing radon problems at www.epa.gov/radon/pubs/consguid.html. Or call the National Radon Fix-It Line at: 1-800-644-6999.

Make sure you've had your home tested. It's easy, it's inexpensive and it could save lives. ■



Wise Choices Fighting Radon

- Start by testing your home. You can do it yourself or hire a professional.
- If you find a radon problem in your home, take steps to fix it.
- If you smoke, stop. Smoking is an especially serious health risk when combined with radon.
- Get help for your radon questions at this national hotline: 1-800-55RADON (557-2366).



Web Links

For more information about radon, click the "Links" tab at:

<http://newsinhealth.nih.gov/issue/Jan2013/Feature2>

Health Capsules

For links to more information, see these stories online:
<http://newsinhealth.nih.gov/issue/Jan2013/Capsule1>

Trust Rises With Age

Older adults are more likely than younger ones to perceive dishonest faces as trustworthy. The new findings help explain why older people are more likely to fall victim to fraud.

Up to 80% of scam victims are over 65, according to the U.S. Federal Trade Commission. Some experts suspect that older people are more vulnerable to fraud because they are more trusting than younger adults.

A team led by Dr. Shelley Taylor at the University of California, Los Angeles, set out to explore whether older adults judge trustworthiness differently from younger adults. Photographs of faces selected to look trustworthy, neutral or untrustworthy

were shown to 119 older adults (ages 55 to 84) and 24 younger adults (ages 20 to 42). The participants were asked to rate each face based on how trustworthy or approachable it seemed. The scientists also used functional MRI to look at brain activity.

Neutral faces and faces high in trust cues were rated similarly by both groups. However, older adults were significantly more likely than younger ones to rate untrustworthy faces as trustworthy.

The brain scans also revealed significant differences between the age groups. An area associated with "gut feelings" became more active in the younger people at the sight of an

untrustworthy face. But older subjects showed little to no activation in this area. More study will be needed to understand why.

Misplaced trust can have dire consequences, especially when it comes to financial fraud. "Older adults seem to be particularly vulnerable to interpersonal solicitations, and their reduced sensitivity to cues related to trust may partially underlie this vulnerability," Taylor says. ■

Salivary Gland Gene Therapy Shows Promise

An experimental trial showed that gene therapy can be performed safely in the human salivary gland. The accomplishment may lead to treatments to help head and neck cancer survivors who battle with chronic dry mouth.

People with head and neck cancer often receive radiation therapy to shrink their tumors. The radiation can damage salivary glands, which make saliva in the mouth. Saliva is needed for taste, swallowing and speech. It also helps prevent infection and tooth decay. Salivary glands don't always recover after radiation therapy.

NIH researcher Dr. Bruce Baum and colleagues launched a small clinical trial to test a gene therapy treatment that had worked to restore saliva

production in animals. The scientists used a disabled virus to transfer a specific gene to 11 volunteers who'd survived head and neck cancer. The gene makes a protein that creates tiny tunnels that help move fluid. In this case, it helps salivary gland cells secrete saliva into the mouth.

The scientists found that 6 of the 11 treated patients had increased saliva secretion. Five also reported a renewed sense of moisture and lubrication in their mouths over the initial 42-day study period. There were no serious side effects.

For safety, the researchers used a virus that causes only short-term gene expression. Scientists will now work to develop longer term expression in salivary glands. ■



Featured Website

Family Checkup: Positive Parenting Prevents Drug Abuse

<http://www.drugabuse.gov/family-checkup>

Parents have a new online resource to help keep their children drug-free. Questions guide you toward better communication skills to catch problems early, support positive behavior, and stay aware of what is happening in your children's lives. Videos show examples of how to use the strategies outlined on the website.



How to get NIH News in Health

Read it online.

Visit newsinhealth.nih.gov

Subscribe

Get it by email.

Click the "Subscribe" button on our home page to sign up for email updates when new issues are posted online.

Get it in print.

Contact us (see page 2) to get free print copies for display in offices, libraries or clinics within the U.S.

NIH... Turning Discovery Into Health