

# NIH News in Health

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## Worried Sick Living with Anxiety Disorders

Anxiety is an uneasy feeling that something may harm you or a loved one. This feeling can be normal and sometimes even helpful. If you're starting a new job or taking a test, it might make you more alert and ready for action. But sometimes anxiety can linger or become overwhelming. When it gets in the way of good health and peace of mind, it's called an anxiety disorder.

If you have an anxiety disorder, you're not alone. Each year, tens of millions of Americans of all ages suffer from long-term anxiety. Among children, anxiety disorders are the most common form of mental illness—one they may carry into adulthood.

"Everybody has anxiety," says Dr. Daniel Pine, an NIH neuroscientist and psychiatrist. "The tricky part is how to tell the difference between normal and abnormal anxiety."

For those with anxiety disorders, fears, worries and anxieties can cause so much distress that they interfere with daily life. The anxiety grows out of proportion to the stressful situation or occurs when there is no real danger.

Anxiety activates the body's stress response. Nearly all the cells, tissues and organs in your body go on high-alert. This stress response

can wear your body down over time. People with chronic (long-term) anxiety have a higher risk of both physical and mental health problems. Some people visit their doctors because of headaches, racing heart or other physical complaints without realizing that these symptoms may be connected to how anxious they feel.

NIH-funded researchers are working to learn more about anxiety disorders. They have discovered that these conditions are caused by some combination of your **genes** and your environment. However, the precise events that lead to anxiety disorders are still unknown. Scientists are also searching for better ways to diagnose, prevent and treat these conditions.

There are several kinds of anxiety disorders. The major types include:

**Phobias.** Intense, irrational fears triggered by things that pose little or no real danger, such as heights, dogs or spiders. Among the anxiety disorders, specific phobias are the most common.

**Social anxiety disorder.** Leads to extreme anxiety and self-consciousness in everyday social situations. Also known as social phobia.



### **Post-traumatic stress disorder.**

Caused by trauma. This condition leads to flashbacks, nightmares and insomnia. Often accompanied by depression or substance abuse, post-traumatic stress disorder can occur at any age, including childhood.

### **Generalized anxiety disorder.**

Excessive worry about a variety of everyday problems.

**Panic disorder.** Sudden attacks of terror accompanied by physical symptoms that may include heart palpitations, shortness of breath, dizziness, or abdominal distress.

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## Definitions

### Genes

Stretches of DNA, a substance you inherit from your parents, that define characteristics such as eye color and your risk for disease.

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Panic disorder is one of the most treatable of anxiety disorders.

**Obsessive-compulsive disorder.** Persistent, upsetting thoughts (obsessions) and repetitive rituals (compulsions), like hand washing, counting, checking or cleaning. These behaviors are done in the hope of preventing the thoughts or making them go away.

Treatment for anxiety disorders usually includes both medication and cognitive behavioral therapy (CBT). CBT is a form of talk therapy. It helps people change both the thinking patterns that support their fears and the way they react to anxiety-provoking situations. Current treatments can be highly effective for most people.



### Wise Choices Suspect an Anxiety Disorder?

- The first person to see is your family doctor or nurse practitioner.
- The next step may be talking to a mental health professional. Consider finding someone trained in cognitive-behavioral therapy who is also open to using medication if needed.
- Consider joining a self-help or support group to share problems and achievements with others. Stress management techniques and meditation can also help.

Dr. Denise Chavira, a psychologist at the University of California, San Diego, works with anxious youth in underserved, rural areas. Her team is studying ways to make CBT more accessible to these children, who may have trouble getting to therapy sessions. To help make up for the lack of in-person contact, the researchers are examining telephone and self-help approaches that focus on teaching parents how to use CBT skills with their children.

In one study, the scientists are comparing CBT training delivered to parents by phone versus in-person CBT provided to anxious youth and their parents. With a therapist's help, parents and kids create lists of anxiety-producing situations. They learn how to face their fears gradually while using CBT coping skills. Both methods encourage parents to model brave behaviors for kids, and to let kids learn how to be independent. "Some parents do this naturally, but others need some practice" says Chavira. "The phone is a less intense form of treatment, given that it only involves the parents and sessions are shorter. But even that mode can be really effective," Chavira says.

NIH-funded researchers are also using advanced imaging tools to pinpoint the areas in the brain that underlie anxiety disorders. Still in its very early stages, this approach represents a major shift from how doctors usually diagnose mental illness, which is by looking at symptoms and behaviors. Using an imaging technique called functional MRI (fMRI), scientists are scanning



### Web Links

For more information about anxiety disorders, see our links online:  
<http://newsinhealth.nih.gov/issue/Nov2011/Feature1>

the brain in action—as it thinks, remembers, feels emotion and regulates the body's reactions to things that cause anxiety. By measuring changes in blood flow related to brain activity, fMRI scans produce full-color images of trouble spots in real time.

Dr. Sonia Bishop of the University of California-Berkeley uses fMRI to study people at high risk for anxiety disorders. Her team hopes to prevent anxiety disorders before patients enter a downward spiral. The researchers are working to develop a new type of CBT-related treatment that helps to retrain how patients regulate their emotions and attention.

Scientists are especially curious about brain regions called the amygdala and the hippocampus. The amygdala plays an important role in fear and anxiety by alerting the brain to danger. The hippocampus translates threatening events into memories. Once scientists discover if and how these areas contribute to illness, they might be able to develop better treatments.

"These disorders put a huge burden on the individual, the family and society," Bishop says. "Anxiety disorders are one of the most common reasons that people visit their primary health care provider."

If you are troubled by anxiety, the first person to see is your family doctor or nurse practitioner. He or she can check for any underlying physical illness or a related condition. You may be referred to a mental health specialist, who might help to identify the specific type of anxiety disorder and the appropriate treatment. With proper care, most people with anxiety disorders can lead normal, fulfilling lives. ■

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# Looking at Lupus

## An Attack from Within

Lupus is a complex and mysterious disorder. It arises when the cells that are supposed to protect your body from disease mistakenly assault your own healthy cells and tissues. This attack from within can damage your joints, skin and most other parts of your body. NIH-funded scientists are working to uncover the causes of lupus and find better ways to diagnose and treat the disease.

"Just about anyone can get lupus, but it mostly affects young women. It can rob them of the prime years of their lives," says NIH's Dr. Mark Gourley, an expert on lupus and related disorders. The disease often strikes between the ages of 15 and 44. Lupus afflicts about 9 times more women than men. For unknown reasons, African American women are at especially high risk.

No one knows what causes lupus. But researchers suspect that a combination of genes and the environment is to blame.



### Wise Choices Recognizing Lupus

Lupus symptoms can vary widely, but here are some common ones:

- Pain or swelling in joints
- Muscle pain
- Fever with no known cause
- Red rashes, often on the face
- Chest pain when taking a deep breath
- Hair loss
- Pale or purple fingers or toes
- Sensitivity to the sun
- Swelling in legs or around eyes
- Mouth ulcers
- Swollen glands
- Feeling very tired

Lupus comes in different forms. The most common and serious type is called systemic lupus erythematosus. It can cause severe problems throughout the body. Other types can cause temporary skin sores after sun exposure or long-term rashes that may lead to scarring.

Lupus can be difficult to diagnose because its symptoms vary so widely. People with mild lupus may have just a few symptoms, such as skin rashes or achy joints. In other cases, lupus can harm essential organs, including the kidneys and brain.

"Diagnosis is one of the biggest challenges patients can face," says Gourley. "The most frequent and common symptom is overwhelming fatigue." But extreme tiredness could be mistaken for many other disorders, including sleep problems. Because of the variable symptoms, some patients can go for months or years without an accurate diagnosis.

No single test can identify lupus, either. Your doctor might perform some tests to rule out other possible causes of your symptoms. Blood tests can also determine if you have certain **immune system** proteins called antibodies that might be a sign of lupus. These tests also detect inflammation, an internal irritation and swelling that can be caused by your immune system mistakenly attacking your own healthy cells.

Lupus has no cure. But medicines and lifestyle changes can help control it. Patients with joint or chest pain might use anti-inflammation drugs, such as ibuprofen or naproxen. Corticosteroids are stronger drugs that can suppress inflammation, but long-term use may lead to severe



side effects. Other drugs can block production or stop the function of immune cells.

In March 2011, a new medication called belimumab was approved by the U.S. Food and Drug Administration. "It's the first new therapy to be approved for lupus in over 50 years," says Gourley. The drug is expensive, and it doesn't work for everyone. Still, it's led the way for several promising new therapies now being tested in clinical trials.

You can take other steps to lessen or prevent lupus symptoms. "Follow your typical mom's advice," says Gourley. "Get plenty of sleep. Eat right. Take good care of your body and exercise. Wear sunscreen. And if you're on medications, take them as your doctor recommends. That's the best thing you can do for lupus." ■



### Web Links

For more about lupus, see our links online:  
<http://newsinhealth.nih.gov/issue/Nov2011/Feature2>



### Definitions

#### Immune System

The system that protects your body from invading viruses, bacteria and other microscopic threats.

# Health Capsules

For links to more information, see these stories online:  
<http://newsinhealth.nih.gov/issue/Nov2011/Capsule1>

## Gene Affects Response to Asthma Drugs

Some people with asthma don't respond well to inhaled corticosteroids, a widely prescribed medicine for asthma control. Scientists have now identified a gene that may help explain why.

Asthma is a complex disease that narrows the airways in the lungs. It leads to wheezing, coughing, chest tightness and trouble breathing.

Since a poor response to inhaled corticosteroids often runs in families, scientists suspected that genes play a role. To learn more, researchers ran a genome-wide scan of more than 100 children with asthma and their parents. Variation in a gene called *GLCC11* seemed to be linked to a poor response to inhaled corticosteroids.

To double-check the finding,

the scientists looked for variant *GLCC11* genes in over 900 additional children and adults with asthma. About 1 in 6 of these patients had 2 copies of the variant gene. Those with 2 variants were more than twice as likely to respond poorly to inhaled corticosteroids than patients with 2 regular copies of the gene.

"This finding helps to explain the genetic basis for the long-standing observation that some people don't respond well to what is a common asthma treatment," says Dr. Susan Shurin, acting director of NIH's National Heart, Lung and Blood Institute. Understanding variant genes might eventually lead to personalized asthma therapy that's based on each patient's genetic makeup. ■

## Get an Eye Exam During Diabetes Month

If you haven't had a dilated eye exam lately, November is an ideal time to make an appointment for one. It's American Diabetes Month, and eye disease is one of the most common and debilitating complications of diabetes. NIH especially encourages people with diabetes to take steps to avoid vision loss by having the exam each year.

Diabetes is the leading cause of blindness in adults nationwide. An eye disorder known as diabetic retinopathy arises in about 40% of U.S. adults with diabetes. It occurs when blood vessels of the **retina** swell and leak fluid. In some cases, blood vessels become blocked and rupture, or new vessels grow on the retina, leading to permanent vision loss.

People with diabetes are also at risk for cataracts, which cause clouding of the eye lens, and glaucoma, which damages the optic nerve.

Comprehensive, dilated eye exams allow eye care professionals to monitor the eye, including the retina, for

signs of disease. Diabetic retinopathy usually has no symptoms until vision loss occurs, but annual dilated eye exams can identify signs of it. In fact, about 90% of diabetes-related blindness is preventable through early detection, timely treatment and appropriate follow-up care.

To learn more about diabetic eye disease, visit <http://www.nei.nih.gov/diabetes/>. Or send a friend or family member a free e-card, in English or Spanish, by going to [www.nei.nih.gov/diabetes/ecards/english/](http://www.nei.nih.gov/diabetes/ecards/english/). ■



### Featured Website Go4Life

[www.nia.nih.gov/Go4Life](http://www.nia.nih.gov/Go4Life)

Staying active has many rewards, no matter what your age. This interactive website offers tips and free resources to help older adults start exercising and keep going. Get an exercise guide and video, available in English and Spanish, and share your own success story to help motivate others.



### Definitions

#### Retina

Light-sensing layer of tissue in the back of the eye.

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