

# NIH News in Health

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## Major Ups and Downs Bipolar Disorder Brings Extreme Mood Swings

Most people feel happy and energized on some days and less so on others. But if these mood changes last for a week or more and are severe—making it hard for you to sleep, stay focused or go to work—it may be a sign of bipolar disorder. Not only can bipolar disorder damage relationships, affect your grades and make it hard to keep a job; it can also be dangerous.

People with bipolar disorder—also called manic-depressive illness—go through extreme changes in mood, energy and behavior. These “mood episodes” can continue for a week or 2, and sometimes longer, with symptoms lasting every day for most of the day.

Sometimes people with bipolar disorder become very sad and much less active. They have trouble concentrating, forget things and lose interest in fun activities. They may try to hurt or even kill themselves. This is called depression.

People with bipolar disorder also go through periods of feeling unusually happy. They become more energetic and active than usual. They become impulsive and take great risks. They might do things that make them lose their jobs, their spouse or all their money. This is called mania. “They don’t see the consequences of their behaviors,” explains Dr. Carlos A. Zarate of NIH’s National Institute of Mental Health (NIMH). “Or they do see it but they don’t care.”

Bipolar disorder is fairly common, but it’s difficult to tell exactly how widespread it is. “There are a variety of illnesses that are similar to bipolar disorder, but with less severe

upswings,” says NIMH’s Dr. Francis J. McMahon. Researchers estimate that bipolar disorder affects nearly 6 million American adults in a given year.

Children and teens

can also have bipolar disorder.

NIMH’s Dr. Ellen Leibenluft, whose work focuses on children, explains that a recent upsurge in diagnoses has led to controversy

about whether children with severe irritability, but without clear episodes of mania, are being misdiagnosed as having bipolar disorder. “There really isn’t debate about whether there is bipolar disorder in children,” Leibenluft says. “What’s debated is how common it is.” But the bottom line is that any child diagnosed with bipolar disorder needs help.

Researchers are gaining new insights into what goes awry in the brains of people with bipolar disorder. For example, people with the disorder seem to have different ways of perceiving emotions in others’ faces.



One area that seems to play a role in bipolar disorder is deep inside your brain: the amygdala. “The amygdala tells us what in our environment is emotionally important,” Leibenluft says. “It seems to be acting differently in bipolar disorder, in both adults and children. We see an increased activity in the amygdala in response to emotional triggers in the environment.”

Scientists have also been finding clues in **genes**. “We’ve known for at least 50 years that the majority of bipolar disorder is caused by genes,” McMahon says, “but those genes have been remarkably difficult to pin down.”

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### Definitions

#### Genes

Stretches of DNA, a substance you inherit from your parents, that define characteristics such as how likely you are to get certain diseases.

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Scientists know that bipolar disorder is largely genetic because of twin studies. When an identical twin has bipolar disorder, their twin, who has the same inherited **DNA**, also has bipolar disorder 60-80% of the time. Non-identical twins, who share only about half their DNA, tend to share bipolar disorder only about 20% of the time. "That tells us that about two-thirds of the risk for bipolar disorder can be explained by genes," McMahon says.

McMahon and his colleagues have been comparing the **genomes** of people with and without bipolar disorder, searching for genetic variations—small genetic differences—that appear more often in people with the disorder.

"We've found 3 or 4 genes that are consistently associated with bipolar disorder," McMahon says. But the genes that researchers have found thus far collectively increase the risk of bipolar disorder by only about 10-20%. McMahon says that many other genes must be involved as well.

If scientists could identify the genetic changes that lead to bipolar



## Web Links

For more about bipolar disorder, see our links online:

<http://newsinhealth.nih.gov/2010/May/feature1.htm>

disorder, they might eventually be able to design a more accurate test or better treatments for the disorder.

Research may also uncover ways to lower your risk for bipolar disorder. "Even in identical twins, who have identical genes," McMahon says, "a third escape the illness for reasons we don't understand. Life experiences or other non-genetic factors may be involved. But we have a poor understanding of what those might be."

While there's no cure for bipolar disorder, treatment can help prevent episodes and control their symptoms. Different types of medication can help. So can talk therapy.

If you think you or a family member has bipolar disorder, call your doctor to get assessed. "Getting help sooner rather than later is really important," McMahon says. "You don't have to go first to a psychiatrist. Your primary care doctor can get you started."

If you're diagnosed with bipolar disorder, Zarate says, learn as much as you can about it. "You as the patient can take responsibility for your own illness and should do everything in your power to stay well," he says. He suggests mood charting—tracking what brings about episodes and how well the medications are working. Mood charts can help you and your doctor design a more effective treatment plan.



## Wise Choices Dealing with Bipolar Disorder

If you have bipolar disorder, get treatment and stick with it. Here are some tips:

- Talk to your doctor about your treatment.
- Stay on your medication.
- Keep a routine for eating and sleeping.
- Get enough sleep.
- Learn to recognize your mood swings.
- Ask a friend or relative to help you stick with your treatment.
- Be patient. Improvement takes time.
- Chart your moods to help figure out what triggers episodes and how medications are working.
- If you're thinking about hurting yourself, call a doctor, 911 or go to the emergency room. You can also call a toll-free suicide hotline. The National Suicide Prevention Lifeline is 1-800-273-TALK (8255); the TTY number is 1-800-799-4TTY (4889). If you're with someone in crisis, don't leave them alone.



## Definitions

### DNA

A substance you inherit from your parents. Identical twins have identical DNA; non-identical twins, like any siblings, share only about half their DNA.

### Genome

The full set of all your genes.

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"It's important to have a good support system of friends and family," Zarate adds. They can help by learning to spot the signs of an episode and what to do when they see the warning signs.

Be patient. "People sometimes get frustrated," Zarate says. "These kinds of medications don't work overnight." It can take several weeks to control your symptoms—and several months to really stabilize the disorder. So stick to your plan and keep in touch with your doctor.

Don't be shy about getting help. With treatment, you can lead a successful life. ■

# Strike Out Stroke

## Quick Action Can Keep Damage at Bay

It can happen any time and any place. A **stroke** can come on suddenly, and its effects can be devastating. Stroke ranks as the third leading cause of death in the U.S. It's the most common cause of adult disability. The good news is that you can halt the brain damage caused by a stroke if you act quickly. That's why it's important to know the warning signs of stroke, and to get help right away if you see them.

A stroke occurs when normal blood flow to the brain fails, usually because of a blocked blood vessel. If blood can't bring nutrients and oxygen to brain cells, they stop functioning and then die.

"Stroke can be very disabling. It can rob you of your very essence, because the brain makes us who we are," says Dr. Walter Koroshetz, deputy director of NIH's National Institute of Neurological Disorders and Stroke.

Researchers have made great strides in improving the diagnosis, treatment and prevention of stroke. Today, with prompt treatment, many people who've had a stroke end up with few disabilities, or none at all.

"It's important to know that you can do something about it," Koroshetz says. "You can dramatically reduce your risk for stroke by adopting a healthy lifestyle. That means exercising, having a healthy weight, keeping your blood pressure in check and not smoking."

There are 2 main types of stroke. About 4 in 5 strokes arise when blood vessels are blocked, usually by a blood clot. These are called ischemic strokes. The other type,

called hemorrhagic stroke—is caused by a broken or leaking blood vessel in the brain. "The treatments for each type are almost exactly opposite," Koroshetz says.

Signs of ischemic stroke include sudden weakness on one side of your body and trouble talking, walking, seeing or thinking.

About 15 years ago, NIH-funded scientists showed that brain damage from blood clots can be halted if patients are treated with a clot-busting drug within a few hours after symptoms begin. The drug, called tissue plasminogen activator (tPA), was the first proven treatment for stroke.

Unfortunately, only about 2% of people with ischemic stroke actually get treated with tPA because they don't get help quickly enough. When tPA is given more than 3 or 4 hours after stroke symptoms begin, it can actually cause more damage. "That's why it's important to act fast when you see the warning signs," Koroshetz says.

"These warning signs must be checked out right away," says Koroshetz. If not treated quickly, mini-strokes, also known as transient ischemic attacks, increase your chances of having a major stroke within a few hours or days.

About 1 in 5 strokes is caused by bleeding in the brain. A common symptom in some types of hemorrhagic stroke is a very sudden and extremely painful headache. Emergency surgery may be needed to



repair a ruptured blood vessel.

Because stroke attacks the brain, a person who's having a stroke may not be able to call 911. The stroke victim's best chance is if someone nearby recognizes the signs and seeks medical help. Immediate treatment could save someone's life and improve the chance for successful recovery. ■



### Definitions

#### Stroke

When normal blood flow to the brain fails. Often caused by blocked or ruptured blood vessels.



### Web Links

For more about stroke, see our links online:

<http://newsinhealth.nih.gov/2010/May/feature2.htm>



### Wise Choices Signs of Stroke

If you see or have one or more of these symptoms, call 911 right away:

- Sudden numbness or weakness of the face, arm or leg, especially on one side of the body
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness or loss of balance or coordination
- Sudden severe headache with no known cause



# Health Capsules

For links to more information, see these stories online:  
<http://newsinhealth.nih.gov/2010/May/capsules.htm>

## Extra Vitamin C & E Don't Reduce Pregnancy Blood Pressure Risks

Vitamin C and E supplements don't lower the chance of developing high blood pressure problems related to pregnancy, according to a new study.

High blood pressure can be dangerous during pregnancy. It can harm the mother's kidneys and other organs, and it can cause low birth weight and early delivery of the baby. In the most serious cases, the mother can develop a condition called preeclampsia that can threaten the lives of both the mother and her unborn child.

Some small studies had suggested

that vitamins C and E might reduce these risks. To take a closer look, NIH-funded researchers conducted a large-scale study that enrolled over 10,000 generally healthy pregnant women. The women received either a sugar pill or daily supplements of vitamins C and E with about 10 times the amount in typical prenatal vitamins. The women continued with any pregnancy vitamins they were already taking.

The researchers found that the supplements failed to reduce the

risk of pregnancy-related high blood pressure, or hypertension. In addition, the vitamins seemed to have no effect on preeclampsia or other hypertension-related problems, including stress on the kidneys, miscarriage, an underweight baby or preterm delivery.

"The study results effectively rule out vitamin C and E supplements as a means to prevent the hypertensive disorders seen in pregnancy," says Dr. Alan E. Guttmacher, acting director of NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development. ■

## Diabetes and Risk for Heart Disease and Stroke

Having type 2 diabetes increases the risk of **cardiovascular** events, like stroke or heart attack. For nearly a decade, NIH has supported a large clinical trial called the ACCORD study. It aimed to find ways to reduce the likelihood of cardiovascular events in adults with type 2 diabetes who are at especially high risk because of a previous heart attack, stroke or other reason.

One ACCORD trial involved more than 4,700 people who had diabetes and high blood pressure. They were asked to control their blood pressure with medications. Some were asked to target a standard blood pressure

level, while others aimed for a lower level that's considered normal in healthy people.

Lowering blood pressure to normal levels didn't significantly reduce the risk of cardiovascular events overall. However, it did appear to reduce the likelihood of stroke.

Another report looked at 5,500 patients to evaluate a combination of 2 types of drugs that can reduce blood levels of fatty molecules called lipids. A statin medication alone proved as beneficial as a combination of a statin and a fibrate medication.

"Although our analysis suggests that certain patients may benefit from combination therapy, this study provides important information that should spare many people with diabetes unneeded therapy with fibrates," says Dr. Henry Ginsberg of Columbia University, who led ACCORD's lipid trial. ■

### Definitions

#### Cardiovascular

The system of heart and vessels that circulates blood through the body.

### Featured Web Site Advances in Medical Imaging

[www.nih.gov/science/imaging](http://www.nih.gov/science/imaging)

New imaging techniques are transforming medical care. This colorful and easy-to-read website shows how advanced types of MRI and other tools can improve brain surgery, cancer screening, and diagnosis of stroke and heart attack.



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