

### What are anxiety disorders?

Anxiety disorders are a group of mental illnesses that cause people to feel excessively frightened, distressed, or uneasy during situations in which most other people would not experience these same feelings. When they are not treated, anxiety disorders can be severely impairing and can negatively affect a person's personal relationships or ability to work or study and can make even regular and daily activities such as shopping, cooking or going outside incredibly difficult.

Anxiety disorders are the most common mental illnesses in America: they affect around 20 percent of the population at any given time. Fortunately there are many good treatments for anxiety disorders. Unfortunately, some people do not seek treatment for their illness because they do not realize how severe their symptoms are or are too ashamed to seek help.

### What are the most common anxiety disorders?

- **Panic Disorder** – Characterized by “panic attacks,” panic disorder results in sudden feelings of terror that can strike repeatedly and sometimes without warning. Physical symptoms of a panic attack include chest pain, heart palpitations, upset stomach, feelings of being disconnected, and fear of dying.
- **Obsessive-compulsive Disorder (OCD)** – OCD is characterized by repetitive, intrusive, irrational and unwanted thoughts (obsessions) and/or rituals that seem impossible to control (compulsions). Some people with OCD have specific compulsions (e.g., counting, arranging, cleaning) that they “must perform” multiple times each day in order to momentarily release their anxiety that something bad might happen to themselves or to someone they love.
- **Posttraumatic Stress Disorder (PTSD)** – When people experience or witness a traumatic event such as abuse, a natural disaster, or extreme violence, it is normal to be distressed and to feel “on edge” for some time after this experience. Some people who experience traumatic events have severe symptoms such as nightmares, flashbacks, being very easily startled or scared, or feeling numb/angry/irritable, that last for weeks or even months after the event and are so severe that they make it difficult for a person to work, have loving relationships, or “return to normal.”
- **Phobias** – A phobia is a disabling and irrational fear of something that really poses little or no actual danger for most people. This fear can be very disabling when it leads to avoidance of objects or situations that may cause extreme feelings of terror, dread and panic.
- **Generalized Anxiety Disorder (GAD)** – A severe, chronic, exaggerated worrying about everyday events is the most common symptom in people with GAD. This is a worrying

that lasts for at least six months, makes it difficult to concentrate and to carry out routine activities, and happens for many hours each day in some people.

- **Social Anxiety Disorder** – An intense fear of social situations that leads to difficulties with personal relationships and at the workplace or in school is most common in people with social anxiety disorder. Individuals with social anxiety disorder often have an irrational fear of being humiliated in public for “saying something stupid,” or “not knowing what to say.”

People with anxiety disorders are more likely to use or abuse alcohol and other drugs including benzodiazepines, opiates (e.g., pain-killers, heroin) or cigarettes. This is known as self-medication. Some people use drugs and alcohol to try and reduce their anxiety. This is very dangerous because even though some drugs make people feel less anxious when they are high, anxiety becomes even worse when the drugs wear off.

### **Are there any known causes of anxiety disorders?**

Although studies suggest that people are more likely to have an anxiety disorder if their parents have anxiety disorders, it has not been shown whether biology or environment plays the greater role in the development of these disorders. Some anxiety disorders have a very clear genetic link (e.g., OCD) that is being studied by scientists to help discover new treatments to target specific parts of the brain. Some anxiety disorders can also be caused by medical illnesses. Other anxiety disorders can be caused by brain injury.

### **What treatments are available for anxiety disorders?**

Effective treatments for anxiety disorders include medications and psychotherapy. Psychotherapy techniques such as cognitive behavioral therapies are most useful in the treatment of anxiety disorders and are referred to as “first-line treatments.”

In most cases, a combination of psychotherapy and medications is most beneficial for people with severe anxiety disorders. Some commonly used medications for anxiety disorders are antidepressant medications called selective serotonin reuptake inhibitors (SSRIs).

The importance of having a good diet and getting enough sleep are known to decrease symptoms in people with anxiety disorders. Regular exercise has also been scientifically proven to be effective.

*Reviewed by Ken Duckworth M.D., and Jacob L. Freedman M.D., April 2012*



# Anxiety Disorders

National Institute of Mental Health

National Institute of Mental Health  
**Anxiety Disorders**

**Anxiety Disorders** affect about 40 million American adults age 18 years and older (about 18%) in a given year,<sup>1</sup> causing them to be filled with fearfulness and uncertainty. Unlike the relatively mild, brief anxiety caused by a stressful event (such as speaking in public or a first date), anxiety disorders last at least 6 months and can get worse if they are not treated. Anxiety disorders commonly occur along with other mental or physical illnesses, including alcohol or substance abuse, which may mask anxiety symptoms or make them worse. In some cases, these other illnesses need to be treated before a person will respond to treatment for the anxiety disorder.

Effective therapies for anxiety disorders are available, and research is uncovering new treatments that can help most people with anxiety disorders lead productive, fulfilling lives. If you think you have an anxiety disorder, you should seek information and treatment right away.



**This booklet will:**

- describe the symptoms of anxiety disorders,
- explain the role of research in understanding the causes of these conditions,
- describe effective treatments,
- help you learn how to obtain treatment and work with a doctor or therapist, and
- suggest ways to make treatment more effective.

**The following anxiety disorders are discussed in this brochure:**

- panic disorder,
- obsessive-compulsive disorder (OCD),
- post-traumatic stress disorder (PTSD),
- social phobia (or social anxiety disorder),
- specific phobias, and
- generalized anxiety disorder (GAD).

Each anxiety disorder has different symptoms, but all the symptoms cluster around excessive, irrational fear and dread.

# Panic Disorder

---

**“For me, a panic attack is almost a violent experience. I feel disconnected from reality. I feel like I'm losing control in a very extreme way. My heart pounds really hard, I feel like I can't get my breath, and there's an overwhelming feeling that things are crashing in on me.”**

**“It started 10 years ago, when I had just graduated from college and started a new job. I was sitting in a business seminar in a hotel and this thing came out of the blue. I felt like I was dying.”**

**“In between attacks, there is this dread and anxiety that it's going to happen again. I'm afraid to go back to places where I've had an attack. Unless I get help, there soon won't be anyplace where I can go and feel safe from panic.”**

**Panic disorder** is a real illness that can be successfully treated. It is characterized by sudden attacks of terror, usually accompanied by a pounding heart, sweatiness, weakness, faintness, or dizziness. During these attacks, people with panic disorder may flush or feel chilled; their hands may tingle or feel numb; and they may experience nausea, chest pain, or smothering sensations. Panic attacks usually produce a sense of unreality, a fear of impending doom, or a fear of losing control.

A fear of one's own unexplained physical symptoms is also a symptom of panic disorder. People having panic attacks sometimes believe they are having heart attacks, losing their minds, or on the verge of death. They can't predict when or where an attack will occur, and between episodes many worry intensely and dread the next attack.

Panic attacks can occur at any time, even during sleep. An attack usually peaks within 10 minutes, but some symptoms may last much longer.

Panic disorder affects about 6 million American adults<sup>1</sup> and is twice as common in women as men.<sup>2</sup> Panic attacks often begin in late adolescence or early adulthood,<sup>2</sup> but not everyone who experiences panic attacks will develop panic disorder. Many people have just one attack and never have another. The tendency to develop panic attacks appears to be inherited.<sup>3</sup>

People who have full-blown, repeated panic attacks can become very disabled by their condition and should seek treatment before they start to avoid places or situations where panic attacks have occurred. For example, if a panic attack happened in an elevator, someone with panic disorder may develop a fear of elevators that could affect the choice of a job or an apartment, and restrict where that person can seek medical attention or enjoy entertainment.

Some people's lives become so restricted that they avoid normal activities, such as grocery shopping or driving. About one-third become housebound or are able to confront a feared situation only when accompanied by a spouse or other trusted person.<sup>2</sup> When the condition progresses this far, it is called *agoraphobia*, or fear of open spaces.

Early treatment can often prevent agoraphobia, but people with panic disorder may sometimes go from doctor to doctor for years and visit the emergency room repeatedly before someone correctly diagnoses their condition. This is unfortunate, because **panic disorder is one of the most treatable of all the anxiety disorders, responding in most cases to certain kinds of medication or certain kinds of cognitive psychotherapy, which help change thinking patterns that lead to fear and anxiety.**

Panic disorder is often accompanied by other serious problems, such as depression, drug abuse, or alcoholism.<sup>4,5</sup> These conditions need to be treated separately. Symptoms of depression include feelings of sadness or hopelessness, changes in appetite or sleep patterns, low energy, and difficulty concentrating. Most people with depression can be effectively treated with antidepressant medications, certain types of psychotherapy, or a combination of the two.

# Obsessive-Compulsive Disorder (OCD)

**“I couldn’t do anything without rituals. They invaded every aspect of my life. Counting really bogged me down. I would wash my hair three times as opposed to once because three was a good luck number and one wasn’t. It took me longer to read because I’d count the lines in a paragraph. When I set my alarm at night, I had to set it to a number that wouldn’t add up to a ‘bad’ number.”**

**“I knew the rituals didn’t make sense, and I was deeply ashamed of them, but I couldn’t seem to overcome them until I had therapy.”**

**“Getting dressed in the morning was tough, because I had a routine, and if I didn’t follow the routine, I’d get anxious and would have to get dressed again. I always worried that if I didn’t do something, my parents were going to die. I’d have these terrible thoughts of harming my parents. That was completely irrational, but the thoughts triggered more anxiety and more senseless behavior. Because of the time I spent on rituals, I was unable to do a lot of things that were important to me.”**

**People with obsessive-compulsive disorder (OCD)** have persistent, upsetting thoughts (obsessions) and use rituals (compulsions) to control the anxiety these thoughts produce. Most of the time, the rituals end up controlling them.

For example, if people are obsessed with germs or dirt, they may develop a compulsion to wash their hands over and over again. If they develop an obsession with intruders, they may lock and relock their doors many times before going to bed. Being afraid of social embarrassment may prompt people with OCD to comb their hair compulsively in front of a mirror—sometimes they get “caught” in the mirror and can’t move away from it. Performing such rituals is not pleasurable. At best, it produces temporary relief from the anxiety created by obsessive thoughts.

Other common rituals are a need to repeatedly check things, touch things (especially in a particular sequence), or count things. Some common obsessions include having frequent thoughts of violence and harming loved ones, persistently thinking about performing sexual acts the person dislikes, or having thoughts that are



prohibited by religious beliefs. People with OCD may also be preoccupied with order and symmetry, have difficulty throwing things out (so they accumulate), or hoard unneeded items.

Healthy people also have rituals, such as checking to see if the stove is off several times before leaving the house. The difference is that people with OCD perform their rituals even though doing so interferes with daily life and they find the repetition distressing. Although most adults with OCD recognize that what they are doing is senseless, some adults and most children may not realize that their behavior is out of the ordinary.

OCD affects about 2.2 million American adults,<sup>1</sup> and the problem can be accompanied by eating disorders,<sup>6</sup> other anxiety disorders, or depression.<sup>2,4</sup> It strikes men and women in roughly equal numbers and usually appears in childhood, adolescence, or early adulthood.<sup>2</sup> One-third of adults with OCD develop symptoms as children, and research indicates that OCD might run in families.<sup>3</sup>

The course of the disease is quite varied. Symptoms may come and go, ease over time, or get worse. If OCD becomes severe, it can keep a person from working or carrying out normal responsibilities at home. People with OCD may try to help themselves by avoiding situations that trigger their obsessions, or they may use alcohol or drugs to calm themselves.<sup>4,5</sup>

OCD usually responds well to treatment with certain medications and/or exposure-based psychotherapy, in which people face situations that cause fear or anxiety and become less sensitive (desensitized) to them. NIMH is supporting research into new treatment approaches for people whose OCD does not respond well to the usual therapies. These approaches include combination and augmentation (add-on) treatments, as well as modern techniques such as deep brain stimulation.

## Post-Traumatic Stress Disorder (PTSD)

---

**“I was raped when I was 25 years old. For a long time, I spoke about the rape as though it was something that happened to someone else. I was very aware that it had happened to me, but there was just no feeling.**

**“Then I started having flashbacks. They kind of came over me like a splash of water. I would be terrified. Suddenly I was reliving the rape. Every instant was startling. I wasn't aware of anything around me, I was in a bubble, just kind of floating. And it was scary. Having a flashback can wring you out.**

**“The rape happened the week before Thanksgiving, and I can't believe the anxiety and fear I feel every year around the anniversary date. It's as though I've seen a werewolf. I can't relax, can't sleep, don't want to be with anyone. I wonder whether I'll ever be free of this terrible problem.”**

**Post-traumatic stress disorder (PTSD)** develops after a terrifying ordeal that involved physical harm or the threat of physical harm. The person who develops PTSD may have been the one who was harmed, the harm may have happened to a loved one, or the person may have witnessed a harmful event that happened to loved ones or strangers.

PTSD was first brought to public attention in relation to war veterans, but it can result from a variety of traumatic incidents, such as mugging, rape, torture, being kidnapped or held captive, child abuse, car accidents, train wrecks, plane crashes, bombings, or natural disasters such as floods or earthquakes.

People with PTSD may startle easily, become emotionally numb (especially in relation to people with whom they used to be close), lose interest in things they used to enjoy, have trouble feeling affectionate, be irritable, become more aggressive, or even become violent. They avoid situations that remind them of the original incident, and anniversaries of the incident are often very difficult. PTSD symptoms seem to be worse if the event that triggered them was deliberately initiated by another person, as in a mugging or a kidnapping.

Most people with PTSD repeatedly relive the trauma in their thoughts during the day and in nightmares when they sleep. These are called flashbacks. Flashbacks may consist of images, sounds, smells, or feelings, and are often triggered by ordinary occurrences, such as a door slamming or a car backfiring on the street. A person having a flashback may lose touch with reality and believe that the traumatic incident is happening all over again.

Not every traumatized person develops full-blown or even minor PTSD. Symptoms usually begin within 3 months of the incident but occasionally emerge years afterward. They must last more than a month to be considered PTSD. The course of the illness varies. Some people recover within 6 months, while others have symptoms that last much longer. In some people, the condition becomes chronic.

PTSD affects about 7.7 million American adults,<sup>1</sup> but it can occur at any age, including childhood.<sup>7</sup> Women are more likely to develop PTSD than men,<sup>8</sup> and there is some evidence that susceptibility to the disorder may run in families.<sup>9</sup> PTSD is often accompanied by depression, substance abuse, or one or more of the other anxiety disorders.<sup>4</sup>

Certain kinds of medication and certain kinds of psychotherapy usually treat the symptoms of PTSD very effectively.

## Social Phobia (Social Anxiety Disorder)

---

**“In any social situation, I felt fear. I would be anxious before I even left the house, and it would escalate as I got closer to a college class, a party, or whatever. I would feel sick in my stomach—it almost felt like I had the flu. My heart would pound, my palms would get sweaty, and I would get this feeling of being removed from myself and from everybody else.”**

**“When I would walk into a room full of people, I’d turn red and it would feel like everybody’s eyes were on me. I was embarrassed to stand off in a corner by myself, but I couldn’t think of anything to say to anybody. It was humiliating. I felt so clumsy, I couldn’t wait to get out.”**

**Social phobia, also called social anxiety disorder,** is diagnosed when people become overwhelmingly anxious and excessively self-conscious in everyday social situations. People with social phobia have an intense, persistent, and chronic fear of being watched and judged by others and of doing things that will embarrass them. They can worry for days or weeks before a dreaded situation. This fear may become so severe that it interferes with work, school, and other ordinary activities, and can make it hard to make and keep friends.

While many people with social phobia realize that their fears about being with people are excessive or unreasonable, they are unable to overcome them. Even if they manage to confront their fears and be around others, they are usually very anxious beforehand, are intensely uncomfortable throughout the encounter, and worry about how they were judged for hours afterward.

Social phobia can be limited to one situation (such as talking to people, eating or drinking, or writing on a blackboard in front of others) or may be so broad (such as in generalized social phobia) that the person experiences anxiety around almost anyone other than the family.

Physical symptoms that often accompany social phobia include blushing, profuse sweating, trembling, nausea, and difficulty talking. When these symptoms occur, people with social phobia feel as though all eyes are focused on them.

Social phobia affects about 15 million American adults.<sup>1</sup> Women and men are equally likely to develop the disorder,<sup>10</sup> which usually begins in childhood or early adolescence.<sup>2</sup> There is some evidence that genetic factors are involved.<sup>11</sup> Social phobia is often accompanied by other anxiety disorders or depression,<sup>2,4</sup> and substance abuse may develop if people try to self-medicate their anxiety.<sup>4,5</sup>

Social phobia can be successfully treated with certain kinds of psychotherapy or medications.

## Specific Phobias

---

**“I’m scared to death of flying, and I never do it anymore. I used to start dreading a plane trip a month before I was due to leave. It was an awful feeling when that airplane door closed and I felt trapped. My heart would pound, and I would sweat bullets. When the airplane would start to ascend, it just reinforced the feeling that I couldn’t get out. When I think about flying, I picture myself losing control, freaking out, and climbing the walls, but of course I never did that. I’m not afraid of crashing or hitting turbulence. It’s just that feeling of being trapped. Whenever I’ve thought about changing jobs, I’ve had to think, ‘Would I be under pressure to fly?’ These days I only go places where I can drive or take a train. My friends always point out that I couldn’t get off a train traveling at high speeds either, so why don’t trains bother me? I just tell them it isn’t a rational fear.”**

**A specific phobia is an intense, irrational fear** of something that actually poses little or no threat. Some of the more common specific phobias are heights, escalators, tunnels, highway driving, closed-in places, water, flying, dogs, spiders, and injuries involving blood. People with specific phobias may be able to ski the world’s tallest mountains with ease but be unable to go above the fifth floor of an office building. While adults with phobias realize that these fears are irrational, they often find that facing, or even thinking about facing, the feared object or situation brings on a panic attack or severe anxiety.

Specific phobias affect around 19.2 million American adults<sup>1</sup> and are twice as common in women as men.<sup>10</sup> They usually appear in childhood or adolescence and tend to persist into adulthood.<sup>12</sup> The causes of specific phobias are not well understood, but there is some evidence that the tendency to develop them may run in families.<sup>11</sup>

If the feared situation or feared object is easy to avoid, people with specific phobias may not seek help; but if avoidance interferes with their careers or their personal lives, it can become disabling and treatment is usually pursued.

Specific phobias respond very well to carefully targeted psychotherapy.

# Generalized Anxiety Disorder (GAD)

---

**“I always thought I was just a worrier. I'd feel keyed up and unable to relax. At times it would come and go, and at times it would be constant. It could go on for days. I'd worry about what I was going to fix for a dinner party or what would be a great present for somebody. I just couldn't let something go.”**

**“When my problems were at their worst, I'd miss work and feel just terrible about it. Then I worried that I'd lose my job. My life was miserable until I got treatment.”**

**“I'd have terrible sleeping problems. There were times I'd wake up wired in the middle of the night. I had trouble concentrating, even reading the newspaper or a novel. Sometimes I'd feel a little lightheaded. My heart would race or pound. And that would make me worry more. I was always imagining things were worse than they really were. When I got a stomachache, I'd think it was an ulcer.”**

**People with generalized anxiety disorder (GAD)** go through the day filled with exaggerated worry and tension, even though there is little or nothing to provoke it. They anticipate disaster and are overly concerned about health issues, money, family problems, or difficulties at work. Sometimes just the thought of getting through the day produces anxiety.

GAD is diagnosed when a person worries excessively about a variety of everyday problems for at least 6 months.<sup>13</sup> People with GAD can't seem to get rid of their concerns, even though they usually realize that their anxiety is more intense than the situation warrants. They can't relax, startle easily, and have difficulty concentrating. Often they have trouble falling asleep or staying asleep. Physical symptoms that often accompany the anxiety include fatigue, headaches, muscle tension, muscle aches, difficulty swallowing, trembling, twitching, irritability, sweating, nausea, lightheadedness, having to go to the bathroom frequently, feeling out of breath, and hot flashes.

When their anxiety level is mild, people with GAD can function socially and hold down a job. Although they don't avoid certain situations as a result of their disorder, people with GAD can have difficulty carrying out the simplest daily activities if their anxiety is severe.

GAD affects about 6.8 million American adults,<sup>1</sup> including twice as many women as men. The disorder develops gradually and can begin at any point in the life cycle, although the years of highest risk are between childhood and middle age.<sup>2</sup> There is evidence that genes play a modest role in the disorder.<sup>13</sup>

Other anxiety disorders, depression, or substance abuse<sup>2,4</sup> often accompany GAD, which rarely occurs alone. GAD is commonly treated with medication or cognitive-behavioral therapy, but co-occurring conditions must also be treated using the appropriate therapies.



## Treatment of Anxiety Disorders

---

**In general, anxiety disorders** are treated with medication, specific types of psychotherapy, or both.<sup>14</sup> Treatment choices depend on the problem and the person's preference. Before treatment begins, a doctor must conduct a careful diagnostic evaluation to determine whether a person's symptoms are caused by an anxiety disorder or a physical problem. If an anxiety disorder is diagnosed, the type of disorder or the combination of disorders that are present must be identified, as well as any coexisting conditions, such as depression or substance abuse. Sometimes alcoholism, depression, or other coexisting conditions have such a strong effect on the individual that treating the anxiety disorder must wait until the coexisting conditions are brought under control.

People with anxiety disorders who have already received treatment should tell their current doctor about that treatment in detail. If they received medication, they should tell their doctor what medication was used, what the dosage was at the beginning of treatment, whether the dosage was increased or decreased while they were under treatment, what side effects occurred, and whether the treatment helped them become less anxious. If they received psychotherapy, they should describe the type of therapy, how often they attended sessions, and whether the therapy was useful.

Often people believe that they have “failed” at treatment or that the treatment didn't work for them when, in fact, it was not given for an adequate length of time or was administered incorrectly. Sometimes people must try several different treatments or combinations of treatment before they find the one that works for them.

### **Medication**

Medication will not cure anxiety disorders, but it can keep them under control while the person receives psychotherapy. Medication must be prescribed by physicians, usually psychiatrists, who can either offer psychotherapy themselves or work as a team with psychologists, social workers, or counselors who provide psychotherapy. The principal medications used for anxiety disorders are antidepressants, anti-anxiety drugs, and beta-blockers to control some of the physical symptoms. With proper treatment, many people with anxiety disorders can lead normal, fulfilling lives.

## **Antidepressants**

Antidepressants were developed to treat depression but are also effective for anxiety disorders. Although these medications begin to alter brain chemistry after the very first dose, their full effect requires a series of changes to occur; it is usually about 4 to 6 weeks before symptoms start to fade. It is important to continue taking these medications long enough to let them work.

### *SSRIs*

Some of the newest antidepressants are called selective serotonin reuptake inhibitors, or SSRIs. SSRIs alter the levels of the neurotransmitter serotonin in the brain, which, like other neurotransmitters, helps brain cells communicate with one another.

Fluoxetine (Prozac®), sertraline (Zoloft®), escitalopram (Lexapro®), paroxetine (Paxil®), and citalopram (Celexa®) are some of the SSRIs commonly prescribed for panic disorder, OCD, PTSD, and social phobia. SSRIs are also used to treat panic disorder when it occurs in combination with OCD, social phobia, or depression. Venlafaxine (Effexor®), a drug closely related to the SSRIs, is used to treat GAD. These medications are started at low doses and gradually increased until they have a beneficial effect.

SSRIs have fewer side effects than older antidepressants, but they sometimes produce slight nausea or jitters when people first start to take them. These symptoms fade with time. Some people also experience sexual dysfunction with SSRIs, which may be helped by adjusting the dosage or switching to another SSRI.

### *Tricyclics*

Tricyclics are older than SSRIs and work as well as SSRIs for anxiety disorders other than OCD. They are also started at low doses that are gradually increased. They sometimes cause dizziness, drowsiness, dry mouth, and weight gain, which can usually be corrected by changing the dosage or switching to another tricyclic medication.

Tricyclics include imipramine (Tofranil®), which is prescribed for panic disorder and GAD, and clomipramine (Anafranil®), which is the only tricyclic antidepressant useful for treating OCD.

## *MAOIs*

Monoamine oxidase inhibitors (MAOIs) are the oldest class of anti-depressant medications. The MAOIs most commonly prescribed for anxiety disorders are phenelzine (Nardil®), followed by tranylcypromine (Parnate®), and isocarboxazid (Marplan®), which are useful in treating panic disorder and social phobia. People who take MAOIs cannot eat a variety of foods and beverages (including cheese and red wine) that contain tyramine or take certain medications, including some types of birth control pills, pain relievers (such as Advil®, Motrin®, or Tylenol®), cold and allergy medications, and herbal supplements; these substances can interact with MAOIs to cause dangerous increases in blood pressure. The development of a new MAOI skin patch may help lessen these risks. MAOIs can also react with SSRIs to produce a serious condition called “serotonin syndrome,” which can cause confusion, hallucinations, increased sweating, muscle stiffness, seizures, changes in blood pressure or heart rhythm, and other potentially life-threatening conditions.

## **Anti-Anxiety Drugs**

High-potency benzodiazepines combat anxiety and have few side effects other than drowsiness. Because people can get used to them and may need higher and higher doses to get the same effect, benzodiazepines are generally prescribed for short periods of time, especially for people who have abused drugs or alcohol and who become dependent on medication easily. One exception to this rule is people with panic disorder, who can take benzodiazepines for up to a year without harm.

Clonazepam (Klonopin®) is used for social phobia and GAD, lorazepam (Ativan®) is helpful for panic disorder, and alprazolam (Xanax®) is useful for both panic disorder and GAD.

Some people experience withdrawal symptoms if they stop taking benzodiazepines abruptly instead of tapering off, and anxiety can return once the medication is stopped. These potential problems have led some physicians to shy away from using these drugs or to use them in inadequate doses.

Buspirone (Buspar®), an azapirone, is a newer anti-anxiety medication used to treat GAD. Possible side effects include dizziness, headaches, and nausea. Unlike benzodiazepines, buspirone must be taken consistently for at least 2 weeks to achieve an anti-anxiety effect.

## TAKING MEDICATIONS

### Before taking medication for an anxiety disorder:

- Ask your doctor to tell you about the effects and side effects of the drug.
- Tell your doctor about any alternative therapies or over-the-counter medications you are using.
- Ask your doctor when and how the medication should be stopped. Some drugs can't be stopped abruptly but must be tapered off slowly under a doctor's supervision.
- Work with your doctor to determine which medication is right for you and what dosage is best.
- Be aware that some medications are effective only if they are taken regularly and that symptoms may recur if the medication is stopped.

### Beta-Blockers

Beta-blockers, such as propranolol (Inderal®), which is used to treat heart conditions, can prevent the physical symptoms that accompany certain anxiety disorders, particularly social phobia. When a feared situation can be predicted (such as giving a speech), a doctor may prescribe a beta-blocker to keep physical symptoms of anxiety under control.

### Psychotherapy

Psychotherapy involves talking with a trained mental health professional, such as a psychiatrist, psychologist, social worker, or counselor, to discover what caused an anxiety disorder and how to deal with its symptoms.

#### *Cognitive-Behavioral Therapy*

Cognitive-behavioral therapy (CBT) is very useful in treating anxiety disorders. The cognitive part helps people change the thinking patterns that support their fears, and the behavioral part helps people change the way they react to anxiety-provoking situations.

For example, CBT can help people with panic disorder learn that their panic attacks are not really heart attacks and help people with social phobia learn how to overcome the belief that others are always watching and judging them. When people are ready to confront their fears, they are shown how to use exposure techniques to desensitize themselves to situations that trigger their anxieties.

People with OCD who fear dirt and germs are encouraged to get their hands dirty and wait increasing amounts of time before washing them. The therapist helps the person cope with the anxiety that waiting produces; after the exercise has been repeated a number of times, the anxiety diminishes. People with social phobia may be encouraged to spend time in feared social situations without giving in to the temptation to flee and to make small social blunders and observe how people respond to them. Since the response is usually far less harsh than the person fears, these anxieties are lessened. People with PTSD may be supported through recalling their traumatic event in a safe situation, which helps reduce the fear it produces. CBT therapists also teach deep breathing and other types of exercises to relieve anxiety and encourage relaxation.

Exposure-based behavioral therapy has been used for many years to treat specific phobias. The person gradually encounters the object or situation that is feared, perhaps at first only through pictures or tapes, then later face-to-face. Often the therapist will accompany the person to a feared situation to provide support and guidance.

CBT is undertaken when people decide they are ready for it and with their permission and cooperation. To be effective, the therapy must be directed at the person's specific anxieties and must be tailored to his or her needs. There are no side effects other than the discomfort of temporarily increased anxiety.

CBT or behavioral therapy often lasts about 12 weeks. It may be conducted individually or with a group of people who have similar problems. Group therapy is particularly effective for social phobia. Often "homework" is assigned for participants to complete between sessions. There is some evidence that the benefits of CBT last longer than those of medication for people with panic disorder, and the same may be true for OCD, PTSD, and social phobia. If a disorder recurs at a later date, the same therapy can be used to treat it successfully a second time.

Medication can be combined with psychotherapy for specific anxiety disorders, and this is the best treatment approach for many people.

## How to Get Help for Anxiety Disorders

---

**If you think you have an anxiety disorder**, the first person you should see is your family doctor. A physician can determine whether the symptoms that alarm you are due to an anxiety disorder, another medical condition, or both.

If an anxiety disorder is diagnosed, the next step is usually seeing a mental health professional. The practitioners who are most helpful with anxiety disorders are those who have training in cognitive-behavioral therapy and/or behavioral therapy, and who are open to using medication if it is needed.

You should feel comfortable talking with the mental health professional you choose. If you do not, you should seek help elsewhere. Once you find a mental health professional with whom you are comfortable, the two of you should work as a team and make a plan to treat your anxiety disorder together.

Remember that once you start on medication, it is important not to stop taking it abruptly. Certain drugs must be tapered off under the supervision of a doctor or bad reactions can occur. Make sure you talk to the doctor who prescribed your medication before you stop taking it. If you are having trouble with side effects, it's possible that they can be eliminated by adjusting how much medication you take and when you take it.

Most insurance plans, including health maintenance organizations (HMOs), will cover treatment for anxiety disorders. Check with your insurance company and find out. If you don't have insurance, the Health and Human Services division of your county government may offer mental health care at a public mental health center that charges people according to how much they are able to pay. If you are on public assistance, you may be able to get care through your state Medicaid plan.

## Ways to Make Treatment More Effective

---

**Many people with anxiety disorders** benefit from joining a self-help or support group and sharing their problems and achievements with others. Internet chat rooms can also be useful in this regard, but any advice received over the Internet should be used with caution, as Internet acquaintances have usually never seen each other and false identities are common. Talking with a trusted friend or member of the clergy can also provide support, but it is not a substitute for care from a mental health professional.

Stress management techniques and meditation can help people with anxiety disorders calm themselves and may enhance the effects of therapy. There is preliminary evidence that aerobic exercise may have a calming effect. Since caffeine, certain illicit drugs, and even some over-the-counter cold medications can aggravate the symptoms of anxiety disorders, they should be avoided. Check with your physician or pharmacist before taking any additional medications.

The family is very important in the recovery of a person with an anxiety disorder. Ideally, the family should be supportive but not help perpetuate their loved one's symptoms. Family members should not trivialize the disorder or demand improvement without treatment. If your family is doing either of these things, you may want to show them this booklet so they can become educated allies and help you succeed in therapy.

## The Role of Research in Improving the Understanding and Treatment of Anxiety Disorders

---

**NIMH supports research** into the causes, diagnosis, prevention, and treatment of anxiety disorders and other mental illnesses. Scientists are looking at what role genes play in the development of these disorders and are also investigating the effects of environmental factors such as pollution, physical and psychological stress, and diet. In addition, studies are being conducted on the “natural history” (what course the illness takes without treatment) of a variety of individual anxiety disorders, combinations of anxiety disorders, and anxiety disorders that are accompanied by other mental illnesses such as depression.

Scientists currently think that, like heart disease and type 1 diabetes, mental illnesses are complex and probably result from a combination of genetic, environmental, psychological, and developmental factors. For instance, although NIMH-sponsored studies of twins and families suggest that genetics play a role in the development of some anxiety disorders, problems such as PTSD are triggered by trauma. Genetic studies may help explain why some people exposed to trauma develop PTSD and others do not.

Several parts of the brain are key actors in the production of fear and anxiety.<sup>15</sup> Using brain imaging technology and neurochemical techniques, scientists have discovered that the amygdala and the hippocampus play significant roles in most anxiety disorders.

The amygdala is an almond-shaped structure deep in the brain that is believed to be a communications hub between the parts of the brain that process incoming sensory signals and the parts that interpret these signals. It can alert the rest of the brain that a threat is present and trigger a fear or anxiety response. It appears that emotional memories are stored in the central part of the amygdala and may play a role in anxiety disorders involving very distinct fears, such as fears of dogs, spiders, or flying.



The hippocampus is the part of the brain that encodes threatening events into memories. Studies have shown that the hippocampus appears to be smaller in some people who were victims of child abuse or who served in military combat.<sup>16,17</sup> Research will determine what causes this reduction in size and what role it plays in the flashbacks, deficits in explicit memory, and fragmented memories of the traumatic event that are common in PTSD.

By learning more about how the brain creates fear and anxiety, scientists may be able to devise better treatments for anxiety disorders. For example, if specific neurotransmitters are found to play an important role in fear, drugs may be developed that will block them and decrease fear responses; if enough is learned about how the brain generates new cells throughout the lifecycle, it may be possible to stimulate the growth of new neurons in the hippocampus in people with PTSD.<sup>18</sup>

Current research at NIMH on anxiety disorders includes studies that address how well medication and behavioral therapies work in the treatment of OCD, and the safety and effectiveness of medications for children and adolescents who have a combination of anxiety disorders and attention deficit hyperactivity disorder.

1. Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). *Archives of General Psychiatry*. 2005; 62(6):617–627.
2. Robins LN, Regier DA, eds. *Psychiatric Disorders in America: the Epidemiologic Catchment Area Study*. New York: The Free Press, 1991.
3. The NIMH Genetics Workgroup. *Genetics and mental disorders*, NIH Publication No. 98–4268. Rockville, MD: National Institute of Mental Health, 1998.
4. Regier DA, Rae DS, Narrow WE, et al. Prevalence of anxiety disorders and their comorbidity with mood and addictive disorders. *British Journal of Psychiatry* Supplement. 1998;34:24–28.
5. Kushner MG, Sher KJ, Beitman BD. The relation between alcohol problems and the anxiety disorders. *American Journal of Psychiatry*. 1990;147(6):685–695.
6. Wonderlich SA, Mitchell JE. Eating disorders and comorbidity: Empirical, conceptual, and clinical implications. *Psychopharmacology Bulletin*. 1997;33(3):381–390.
7. Margolin G, Gordis EB. The effects of family and community violence on children. *Annual Review of Psychology*. 2000;51:445–479.
8. Davidson JR. Trauma: The impact of post-traumatic stress disorder. *Journal of Psychopharmacology*. 2000;14(2 Suppl 1):S5–S12.
9. Yehuda R. Biological factors associated with susceptibility to posttraumatic stress disorder. *Canadian Journal of Psychiatry*. 1999;44(1):34–39.
10. Bourdon KH, Boyd JH, Rae DS, et al. Gender differences in phobias: Results of the ECA community survey. *Journal of Anxiety Disorders*. 1998;2:227–241.
11. Kendler KS, Walters EE, Truett KR, et al. A twin-family study of self-report symptoms of panic-phobia and somatization. *Behavior Genetics*. 1995;25(6):499–515.
12. Boyd JH, Rae DS, Thompson JW, et al. Phobia: Prevalence and risk factors. *Social Psychiatry and Psychiatric Epidemiology*. 1990;25(6):314–323.
13. Kendler KS, Neale MC, Kessler RC, et al. Generalized anxiety disorder in women. A population-based twin study. *Archives of General Psychiatry*. 1992;49(4):267–272.
14. Hyman SE, Rudorfer MV. Anxiety disorders. In: Dale DC, Federman DD, eds. *Scientific American Medicine. Volume 3*. New York: Healthon/WebMD Corp., 2000, Section 13, Subsection VII.
15. LeDoux J. Fear and the brain: Where have we been, and where are we going? *Biological Psychiatry*. 1998;44(12):1229–1238.
16. Bremner JD, Randall P, Scott TM, et al. MRI-based measurement of hippocampal volume in combat-related posttraumatic stress disorder. *American Journal of Psychiatry*. 1995;152:973–981.
17. Stein MB, Hanna C, Koverola C, et al. Structural brain changes in PTSD: Does trauma alter neuroanatomy? In: Yehuda R, McFarland AC, eds. *Psychobiology of posttraumatic stress disorder. Annals of the New York Academy of Sciences*, 821. New York: New York Academy of Sciences, 1997.
18. Gould E, Reeves AJ, Fallah M, et al. Hippocampal neurogenesis in adult Old World primates. *Proceedings of the National Academy of Sciences USA*. 1999;96(9):5263–5267.

## **For More Information on Anxiety Disorders**

Visit the National Library of Medicine's  
MedlinePlus <http://www.nlm.nih.gov/medlineplus>  
En Español, <http://medlineplus.gov/spanish>

## **For Information on Clinical Trials for Anxiety Disorders**

NIMH Clinical Trials Web page  
<http://www.nimh.nih.gov/health/trials/index.shtml>

National Library of Medicine Clinical Trials Database  
<http://www.clinicaltrials.gov>

Information from NIMH is available in multiple formats. You can browse online, download documents in PDF, and order paper brochures through the mail. If you would like to have NIMH publications, you can order them online at <http://www.nimh.nih.gov>. If you do not have Internet access and wish to have information that supplements this publication, please contact the NIMH Information Resource Center at the numbers listed below.

## **National Institute of Mental Health**

Science Writing, Press & Dissemination Branch  
6001 Executive Boulevard  
Room 8184, MSC 9663  
Bethesda, MD 20892-9663  
Phone: 301-443-4513 or  
1-866-615-NIMH (6464) toll-free  
TTY: 301-443-8431 or  
1-866-415-8051 toll-free  
FAX: 301-443-4279  
E-mail: [nimhinfo@nih.gov](mailto:nimhinfo@nih.gov)  
Web site: <http://www.nimh.nih.gov>



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
National Institutes of Health  
NIH Publication No. 09 3879  
2009

# Bipolar Disorder



**National Institute of Mental Health**

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES • National Institutes of Health



## Contents

What is bipolar disorder? _____	1
What are the symptoms of bipolar disorder? _____	1
How does bipolar disorder affect someone over time? _____	4
What illnesses often co-exist with bipolar disorder? _____	6
What are the risk factors for bipolar disorder? _____	6
Genetics _____	6
Brain structure and functioning _____	8
How is bipolar disorder diagnosed? _____	8
How is bipolar disorder treated? _____	9
Medications _____	9
Psychotherapy _____	16
Other treatments _____	17
What can people with bipolar disorder expect from treatment? _____	19
How can I help a friend or relative who has bipolar disorder? _____	19
Support for caregivers _____	20
How can I help myself if I have bipolar disorder? _____	20
Where can I go for help? _____	21
What if I or someone I know is in crisis? _____	21
Citations _____	22
For more information on bipolar disorder _____	26



This booklet discusses bipolar disorder in adults. For information on bipolar disorder in children and adolescents, see the NIMH booklet, “Bipolar Disorder in Children and Teens: A Parent’s Guide.”

## What is bipolar disorder?

Bipolar disorder, also known as manic-depressive illness, is a brain disorder that causes unusual shifts in mood, energy, activity levels, and the ability to carry out day-to-day tasks. Symptoms of bipolar disorder are severe. They are different from the normal ups and downs that everyone goes through from time to time. Bipolar disorder symptoms can result in damaged relationships, poor job or school performance, and even suicide. But bipolar disorder can be treated, and people with this illness can lead full and productive lives.



Bipolar disorder often develops in a person's late teens or early adult years. At least half of all cases start before age 25.<sup>1</sup> Some people have their first symptoms during childhood, while others may develop symptoms late in life.

Bipolar disorder is not easy to spot when it starts. The symptoms may seem like separate problems, not recognized as parts of a larger problem. Some people suffer for years before they are properly diagnosed and treated. Like diabetes or heart disease, bipolar disorder is a long-term illness that must be carefully managed throughout a person's life.

## What are the symptoms of bipolar disorder?

People with bipolar disorder experience unusually intense emotional states that occur in distinct periods called "mood episodes." An overly joyful or overexcited state is called a manic episode, and an extremely sad or hopeless state is called a depressive episode. Sometimes, a mood episode includes symptoms of both mania and depression. This is called a mixed state. People with bipolar disorder also may be explosive and irritable during a mood episode.

Extreme changes in energy, activity, sleep, and behavior go along with these changes in mood. It is possible for someone with bipolar disorder to experience a long-lasting period of unstable moods rather than discrete episodes of depression or mania.

A person may be having an episode of bipolar disorder if he or she has a number of manic or depressive symptoms for most of the day, nearly every day, for at least one or two weeks. Sometimes symptoms are so severe that the person cannot function normally at work, school, or home.



Symptoms of bipolar disorder are described below.

### **Symptoms of mania or a manic episode include:**

#### **Mood Changes**

- A long period of feeling “high,” or an overly happy or outgoing mood
- Extremely irritable mood, agitation, feeling “jumpy” or “wired.”

#### **Behavioral Changes**

- Talking very fast, jumping from one idea to another, having racing thoughts
- Being easily distracted
- Increasing goal-directed activities, such as taking on new projects
- Being restless
- Sleeping little
- Having an unrealistic belief in one’s abilities
- Behaving impulsively and taking part in a lot of pleasurable, high-risk behaviors, such as spending sprees, impulsive sex, and impulsive business investments.

### **Symptoms of depression or a depressive episode include:**

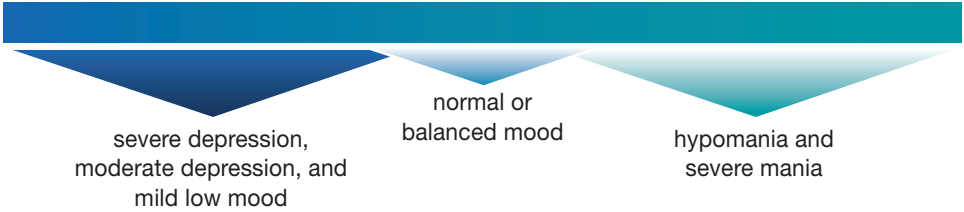
#### **Mood Changes**

- A long period of feeling worried or empty
- Loss of interest in activities once enjoyed, including sex.

#### **Behavioral Changes**

- Feeling tired or “slowed down”
- Having problems concentrating, remembering, and making decisions
- Being restless or irritable
- Changing eating, sleeping, or other habits
- Thinking of death or suicide, or attempting suicide.

In addition to mania and depression, bipolar disorder can cause a range of moods, as shown on the scale.



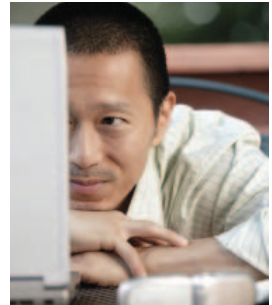
One side of the scale includes severe depression, moderate depression, and mild low mood. Moderate depression may cause less extreme symptoms, and mild low mood is called dysthymia when it is chronic or long-term. In the middle of the scale is normal or balanced mood.

At the other end of the scale are hypomania and severe mania. Some people with bipolar disorder experience hypomania. During hypomanic episodes, a person may have increased energy and activity levels that are not as severe as typical mania, or he or she may have episodes that last less than a week and do not require emergency care. A person having a hypomanic episode may feel very good, be highly productive, and function well. This person may not feel that anything is wrong even as family and friends recognize the mood swings as possible bipolar disorder. Without proper treatment, however, people with hypomania may develop severe mania or depression.

During a mixed state, symptoms often include agitation, trouble sleeping, major changes in appetite, and suicidal thinking. People in a mixed state may feel very sad or hopeless while feeling extremely energized.

Sometimes, a person with severe episodes of mania or depression has psychotic symptoms too, such as hallucinations or delusions. The psychotic symptoms tend to reflect the person's extreme mood. For example, psychotic symptoms for a person having a manic episode may include believing he or she is famous, has a lot of money, or has special powers. In the same way, a person having a depressive episode may believe he or she is ruined and penniless, or has committed a crime. As a result, people with bipolar disorder who have psychotic symptoms are sometimes wrongly diagnosed as having schizophrenia, another severe mental illness that is linked with hallucinations and delusions.

People with bipolar disorder may also have behavioral problems. They may abuse alcohol or substances, have relationship problems, or perform poorly in school or at work. At first, it's not easy to recognize these problems as signs of a major mental illness.



## How does bipolar disorder affect someone over time?

Bipolar disorder usually lasts a lifetime. Episodes of mania and depression typically come back over time. Between episodes, many people with bipolar disorder are free of symptoms, but some people may have lingering symptoms.

Doctors usually diagnose mental disorders using guidelines from the *Diagnostic and Statistical Manual of Mental Disorders*, or DSM. According to the DSM, there are four basic types of bipolar disorder:

- 1. Bipolar I Disorder** is mainly defined by manic or mixed episodes that last at least seven days, or by manic symptoms that are so severe that the person needs immediate hospital care. Usually, the person also has depressive episodes, typically lasting at least two weeks. The symptoms of mania or depression must be a major change from the person's normal behavior.

**2. Bipolar II Disorder** is defined by a pattern of depressive episodes shifting back and forth with hypomanic episodes, but no full-blown manic or mixed episodes.

**3. Bipolar Disorder Not Otherwise Specified (BP-NOS)** is diagnosed when a person has symptoms of the illness that do not meet diagnostic criteria for either bipolar I or II. The symptoms may not last long enough, or the person may have too few symptoms, to be diagnosed with bipolar I or II. However, the symptoms are clearly out of the person's normal range of behavior.

**4. Cyclothymic Disorder, or Cyclothymia**, is a mild form of bipolar disorder. People who have cyclothymia have episodes of hypomania that shift back and forth with mild depression for at least two years. However, the symptoms do not meet the diagnostic requirements for any other type of bipolar disorder.



Some people may be diagnosed with **rapid-cycling bipolar disorder**. This is when a person has four or more episodes of major depression, mania, hypomania, or mixed symptoms within a year.<sup>2</sup> Some people experience more than one episode in a week, or even within one day. Rapid cycling seems to be more common in people who have severe bipolar disorder and may be more common in people who have their first episode at a younger age. One study found that people with rapid cycling had their first episode about four years earlier, during mid to late teen years, than people without rapid cycling bipolar disorder.<sup>3</sup> Rapid cycling affects more women than men.<sup>4</sup>

Bipolar disorder tends to worsen if it is not treated. Over time, a person may suffer more frequent and more severe episodes than when the illness first appeared.<sup>5</sup> Also, delays in getting the correct diagnosis and treatment make a person more likely to experience personal, social, and work-related problems.<sup>6</sup>

Proper diagnosis and treatment helps people with bipolar disorder lead healthy and productive lives. In most cases, treatment can help reduce the frequency and severity of episodes.

## What illnesses often co-exist with bipolar disorder?

Substance abuse is very common among people with bipolar disorder, but the reasons for this link are unclear.<sup>7</sup> Some people with bipolar disorder may try to treat their symptoms with alcohol or drugs. However, substance abuse may trigger or prolong bipolar symptoms, and the behavioral control problems associated with mania can result in a person drinking too much.



Anxiety disorders, such as post-traumatic stress disorder (PTSD) and social phobia, also co-occur often among people with bipolar disorder.<sup>8-10</sup> Bipolar disorder also co-occurs with attention deficit hyperactivity disorder (ADHD), which has some symptoms that overlap with bipolar disorder, such as restlessness and being easily distracted.

People with bipolar disorder are also at higher risk for thyroid disease, migraine headaches, heart disease, diabetes, obesity, and other physical illnesses.<sup>10, 11</sup> These illnesses may cause symptoms of mania or depression. They may also result from treatment for bipolar disorder (see “Lithium and Thyroid Function” section on page 10).

Other illnesses can make it hard to diagnose and treat bipolar disorder. People with bipolar disorder should monitor their physical and mental health. If a symptom does not get better with treatment, they should tell their doctor.

## What are the risk factors for bipolar disorder?

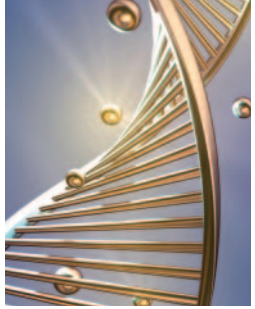
Scientists are learning about the possible causes of bipolar disorder. Most scientists agree that there is no single cause. Rather, many factors likely act together to produce the illness or increase risk.

### Genetics

Bipolar disorder tends to run in families, so researchers are looking for genes that may increase a person’s chance of developing the illness. Genes are the “building blocks” of heredity. They help control how the body and brain work and grow. Genes are contained inside a person’s cells that are passed down from parents to children.

Children with a parent or sibling who has bipolar disorder are four to six times more likely to develop the illness, compared with children who do not have a family history of bipolar disorder.<sup>12</sup> However, most children with a family history of bipolar disorder will not develop the illness.

Genetic research on bipolar disorder is being helped by advances in technology. This type of research is now much quicker and more far-reaching than in the past. One example is the launch of the Bipolar Disorder Phenome Database, funded in part by NIMH. Using the database, scientists will be able to link visible signs of the disorder with the genes that may influence them. So far, researchers using this database found that most people with bipolar disorder had:<sup>13</sup>



- Missed work because of their illness
- Other illnesses at the same time, especially alcohol and/or substance abuse and panic disorders
- Been treated or hospitalized for bipolar disorder.

The researchers also identified certain traits that appeared to run in families, including:

- History of psychiatric hospitalization
- Co-occurring obsessive-compulsive disorder (OCD)
- Age at first manic episode
- Number and frequency of manic episodes.

Scientists continue to study these traits, which may help them find the genes that cause bipolar disorder some day.

But genes are not the only risk factor for bipolar disorder. Studies of identical twins have shown that the twin of a person with bipolar illness does not always develop the disorder. This is important because identical twins share all of the same genes. The study results suggest factors besides genes are also at work. Rather, it is likely that many different genes and a person's environment are involved. However, scientists do not yet fully understand how these factors interact to cause bipolar disorder.

## Brain structure and functioning

Brain-imaging studies are helping scientists learn what happens in the brain of a person with bipolar disorder.<sup>14, 15</sup> Newer brain-imaging tools, such as functional magnetic resonance imaging (fMRI) and positron emission tomography (PET), allow researchers to take pictures of the living brain at work. These tools help scientists study the brain's structure and activity.



Some imaging studies show how the brains of people with bipolar disorder may differ from the brains of healthy people or people with other mental disorders. For example, one study using MRI found that the pattern of brain development in children with bipolar disorder was similar to that in children with “multi-dimensional impairment,” a disorder that causes symptoms that overlap somewhat with bipolar disorder and schizophrenia.<sup>16</sup> This suggests that the common pattern of brain development may be linked to general risk for unstable moods.

Learning more about these differences, along with information gained from genetic studies, helps scientists better understand bipolar disorder. Someday scientists may be able to predict which types of treatment will work most effectively. They may even find ways to prevent bipolar disorder.

## How is bipolar disorder diagnosed?

The first step in getting a proper diagnosis is to talk to a doctor, who may conduct a physical examination, an interview, and lab tests. Bipolar disorder cannot currently be identified through a blood test or a brain scan, but these tests can help rule out other contributing factors, such as a stroke or brain tumor. If the problems are not caused by other illnesses, the doctor may conduct a mental health evaluation. The doctor may also provide a referral to a trained mental health professional, such as a psychiatrist, who is experienced in diagnosing and treating bipolar disorder.



The doctor or mental health professional should conduct a complete diagnostic evaluation. He or she should discuss any family history of bipolar disorder or other mental illnesses and get a complete history of symptoms. The doctor or mental health professionals should also talk to the person's close relatives or spouse and note how they describe the person's symptoms and family medical history.

People with bipolar disorder are more likely to seek help when they are depressed than when experiencing mania or hypomania.<sup>17</sup> Therefore, a careful medical history is needed to assure that bipolar disorder is not mistakenly diagnosed as major depressive disorder, which is also called unipolar depression. Unlike people with bipolar disorder, people who have unipolar depression do not experience mania. Whenever possible, previous records and input from family and friends should also be included in the medical history.

## How is bipolar disorder treated?

To date, there is no cure for bipolar disorder. But proper treatment helps most people with bipolar disorder gain better control of their mood swings and related symptoms.<sup>18-20</sup> This is also true for people with the most severe forms of the illness.

Because bipolar disorder is a lifelong and recurrent illness, people with the disorder need long-term treatment to maintain control of bipolar symptoms. An effective maintenance treatment plan includes medication and psychotherapy for preventing relapse and reducing symptom severity.<sup>21</sup>

### Medications

Bipolar disorder can be diagnosed and medications prescribed by people with an M.D. (doctor of medicine). Usually, bipolar medications are prescribed by a psychiatrist. In some states, clinical psychologists, psychiatric nurse practitioners, and advanced psychiatric nurse specialists can also prescribe medications. Check with your state's licensing agency to find out more.



Not everyone responds to medications in the same way. Several different medications may need to be tried before the best course of treatment is found.

Keeping a chart of daily mood symptoms, treatments, sleep patterns, and life events can help the doctor track and treat the illness most effectively. Sometimes this is called a daily life chart. If a person's symptoms change or if side effects become serious, the doctor may switch or add medications.

Some of the types of medications generally used to treat bipolar disorder are listed on the next page. Information on medications can change. For the most up to date information on use and side effects contact the U.S. Food and Drug Administration (FDA) at <http://www.fda.gov>.



**1. Mood stabilizing medications** are usually the first choice to treat bipolar disorder. In general, people with bipolar disorder continue treatment with mood stabilizers for years. Except for lithium, many of these medications are anti-convulsants. Anticonvulsant medications are usually used to treat seizures, but they also help control moods. These medications are commonly used as mood stabilizers in bipolar disorder:

- Lithium (sometimes known as Eskalith or Lithobid) was the first mood-stabilizing medication approved by the U.S. Food and Drug Administration (FDA) in the 1970s for treatment of mania. It is often very effective in controlling symptoms of mania and preventing the recurrence of manic and depressive episodes.
- Valproic acid or divalproex sodium (Depakote), approved by the FDA in 1995 for treating mania, is a popular alternative to lithium for bipolar disorder. It is generally as effective as lithium for treating bipolar disorder.<sup>23, 24</sup> Also see the section in this booklet, “Should young women take valproic acid?”
- More recently, the anticonvulsant lamotrigine (Lamictal) received FDA approval for maintenance treatment of bipolar disorder.
- Other anticonvulsant medications, including gabapentin (Neurontin), topiramate (Topamax), and oxcarbazepine (Trileptal) are sometimes prescribed. No large studies have shown that these medications are more effective than mood stabilizers.

Valproic acid, lamotrigine, and other anticonvulsant medications have an FDA warning. The warning states that their use may increase the risk of suicidal thoughts and behaviors. People taking anticonvulsant medications for bipolar or other illnesses should be closely monitored for new or worsening symptoms of depression, suicidal thoughts or behavior, or any unusual changes in mood or behavior. People taking these medications should not make any changes without talking to their health care professional.

### **Lithium and Thyroid Function**

People with bipolar disorder often have thyroid gland problems. Lithium treatment may also cause low thyroid levels in some people.<sup>22</sup> Low thyroid function, called hypothyroidism, has been associated with rapid cycling in some people with bipolar disorder, especially women.

Because too much or too little thyroid hormone can lead to mood and energy changes, it is important to have a doctor check thyroid levels carefully. A person with bipolar disorder may need to take thyroid medication, in addition to medications for bipolar disorder, to keep thyroid levels balanced.

## Should young women take valproic acid?

Valproic acid may increase levels of testosterone (a male hormone) in teenage girls and lead to polycystic ovary syndrome (PCOS) in women who begin taking the medication before age 20.<sup>25, 26</sup> PCOS causes a woman's eggs to develop into cysts, or fluid filled sacs that collect in the ovaries instead of being released by monthly periods. This condition can cause obesity, excess body hair, disruptions in the menstrual cycle, and other serious symptoms. Most of these symptoms will improve after stopping treatment with valproic acid.<sup>27</sup> Young girls and women taking valproic acid should be monitored carefully by a doctor.

**2. Atypical antipsychotic medications** are sometimes used to treat symptoms of bipolar disorder. Often, these medications are taken with other medications. Atypical antipsychotic medications are called “atypical” to set them apart from earlier medications, which are called “conventional” or “first-generation” antipsychotics.

- Olanzapine (Zyprexa), when given with an antidepressant medication, may help relieve symptoms of severe mania or psychosis.<sup>28</sup> Olanzapine is also available in an injectable form, which quickly treats agitation associated with a manic or mixed episode. Olanzapine can be used for maintenance treatment of bipolar disorder as well, even when a person does not have psychotic symptoms. However, some studies show that people taking olanzapine may gain weight and have other side effects that can increase their risk for diabetes and heart disease. These side effects are more likely in people taking olanzapine when compared with people prescribed other atypical antipsychotics.
- Aripiprazole (Abilify), like olanzapine, is approved for treatment of a manic or mixed episode. Aripiprazole is also used for maintenance treatment after a severe or sudden episode. As with olanzapine, aripiprazole also can be injected for urgent treatment of symptoms of manic or mixed episodes of bipolar disorder.
- Quetiapine (Seroquel) relieves the symptoms of severe and sudden manic episodes. In that way, quetiapine is like almost all antipsychotics. In 2006, it became the first atypical antipsychotic to also receive FDA approval for the treatment of bipolar depressive episodes.
- Risperidone (Risperdal) and ziprasidone (Geodon) are other atypical antipsychotics that may also be prescribed for controlling manic or mixed episodes.

**3. Antidepressant medications** are sometimes used to treat symptoms of depression in bipolar disorder. People with bipolar disorder who take antidepressants often take a mood stabilizer too. Doctors usually require this because taking only an antidepressant can increase a person's risk of switching to mania or hypomania, or of developing rapid cycling symptoms.<sup>29</sup> To prevent this switch, doctors who prescribe antidepressants for treating bipolar disorder also usually require the person to take a mood-stabilizing medication at the same time.

Recently, a large-scale, NIMH-funded study showed that for many people, adding an antidepressant to a mood stabilizer is no more effective in treating the depression than using only a mood stabilizer.<sup>30</sup>

- Fluoxetine (Prozac), paroxetine (Paxil), sertraline (Zoloft), and bupropion (Wellbutrin) are examples of antidepressants that may be prescribed to treat symptoms of bipolar depression.

Some medications are better at treating one type of bipolar symptoms than another. For example, lamotrigine (Lamictal) seems to be helpful in controlling depressive symptoms of bipolar disorder.

### *What are the side effects of these medications?*

Before starting a new medication, people with bipolar disorder should talk to their doctor about the possible risks and benefits.

The psychiatrist prescribing the medication or pharmacist can also answer questions about side effects. Over the last decade, treatments have improved, and some medications now have fewer or more tolerable side effects than earlier treatments. However, everyone responds differently to medications. In some cases, side effects may not appear until a person has taken a medication for some time.



If the person with bipolar disorder develops any severe side effects from a medication, he or she should talk to the doctor who prescribed it as soon as possible. The doctor may change the dose or prescribe a different medication. People being treated for bipolar disorder should not stop taking a medication without talking to a doctor first. Suddenly stopping a medication may lead to “rebound,” or worsening of bipolar disorder symptoms. Other uncomfortable or potentially dangerous withdrawal effects are also possible.

## FDA Warning on Antidepressants

Antidepressants are safe and popular, but some studies have suggested that they may have unintentional effects on some people, especially in adolescents and young adults. The FDA warning says that patients of all ages taking antidepressants should be watched closely, especially during the first few weeks of treatment. Possible side effects to look for are depression that gets worse, suicidal thinking or behavior, or any unusual changes in behavior such as trouble sleeping, agitation, or withdrawal from normal social situations. Families and caregivers should report any changes to the doctor. The latest information from the FDA can be found at <http://www.fda.gov>.

The following sections describe some common side effects of the different types of medications used to treat bipolar disorder.

### 1. *Mood Stabilizers*

In some cases, lithium can cause side effects such as:

- Restlessness
- Dry mouth
- Bloating or indigestion
- Acne
- Unusual discomfort to cold temperatures
- Joint or muscle pain
- Brittle nails or hair.<sup>31</sup>

Lithium also causes side effects not listed here. If extremely bothersome or unusual side effects occur, tell your doctor as soon as possible.

If a person with bipolar disorder is being treated with lithium, it is important to make regular visits to the treating doctor. The doctor needs to check the levels of lithium in the person's blood, as well as kidney and thyroid function.

Common side effects of other mood stabilizing medications include:

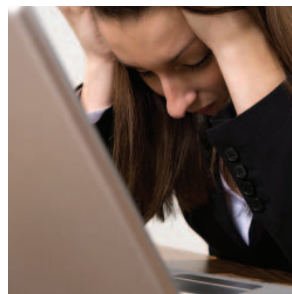
- Drowsiness
- Dizziness
- Headache
- Diarrhea
- Constipation
- Heartburn
- Mood swings
- Stuffed or runny nose, or other cold-like symptoms.<sup>32-37</sup>

These medications may also be linked with rare but serious side effects. Talk with the treating doctor or a pharmacist to make sure you understand signs of serious side effects for the medications you're taking.

## 2. *Atypical Antipsychotics*

Some people have side effects when they start taking atypical antipsychotics. Most side effects go away after a few days and often can be managed successfully. People who are taking antipsychotics should not drive until they adjust to their new medication. Side effects of many antipsychotics include:

- Drowsiness
- Dizziness when changing positions
- Blurred vision
- Rapid heartbeat
- Sensitivity to the sun
- Skin rashes
- Menstrual problems for women.



Atypical antipsychotic medications can cause major weight gain and changes in a person's metabolism. This may increase a person's risk of getting diabetes and high cholesterol.<sup>38</sup> A person's weight, glucose levels, and lipid levels should be monitored regularly by a doctor while taking these medications.

In rare cases, long-term use of atypical antipsychotic drugs may lead to a condition called tardive dyskinesia (TD). The condition causes muscle movements that commonly occur around the mouth. A person with TD cannot control these moments. TD can range from mild to severe, and it cannot always be cured. Some people with TD recover partially or fully after they stop taking the drug.

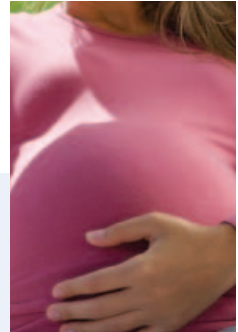
### 3. Antidepressants

The antidepressants most commonly prescribed for treating symptoms of bipolar disorder can also cause mild side effects that usually do not last long. These can include:

- Headache, which usually goes away within a few days.
- Nausea (feeling sick to your stomach), which usually goes away within a few days.
- Sleep problems, such as sleeplessness or drowsiness. This may happen during the first few weeks but then go away. To help lessen these effects, sometimes the medication dose can be reduced, or the time of day it is taken can be changed.
- Agitation (feeling jittery).
- Sexual problems, which can affect both men and women. These include reduced sex drive and problems having and enjoying sex.

Some antidepressants are more likely to cause certain side effects than other types. Your doctor or pharmacist can answer questions about these medications. Any unusual reactions or side effects should be reported to a doctor immediately.

For the most up-to-date information on medications for treating bipolar disorder and their side effects, please see the online NIMH Medications booklet at <http://www.nimh.nih.gov/health/publications/medications/complete-publication.shtml>.



#### **Should women who are pregnant or may become pregnant take medication for bipolar disorder?**

Women with bipolar disorder who are pregnant or may become pregnant face special challenges. The mood stabilizing medications in use today can harm a developing fetus or nursing infant.<sup>39</sup> But stopping medications, either suddenly or gradually, greatly increases the risk that bipolar symptoms will recur during pregnancy.<sup>40</sup>

Scientists are not sure yet, but lithium is likely the preferred mood-stabilizing medication for pregnant women with bipolar disorder.<sup>40, 41</sup> However, lithium can lead to heart problems in the fetus. Women need to know that most bipolar medications are passed on through breast milk.<sup>41</sup> Pregnant women and nursing mothers should talk to their doctors about the benefits and risks of all available treatments.

## Psychotherapy

In addition to medication, psychotherapy, or “talk” therapy, can be an effective treatment for bipolar disorder. It can provide support, education, and guidance to people with bipolar disorder and their families. Some psychotherapy treatments used to treat bipolar disorder include:

- 1. Cognitive behavioral therapy (CBT)** helps people with bipolar disorder learn to change harmful or negative thought patterns and behaviors.
- 2. Family-focused therapy** includes family members. It helps enhance family coping strategies, such as recognizing new episodes early and helping their loved one. This therapy also improves communication and problem-solving.
- 3. Interpersonal and social rhythm therapy** helps people with bipolar disorder improve their relationships with others and manage their daily routines. Regular daily routines and sleep schedules may help protect against manic episodes.
- 4. Psychoeducation** teaches people with bipolar disorder about the illness and its treatment. This treatment helps people recognize signs of relapse so they can seek treatment early, before a full-blown episode occurs. Usually done in a group, psychoeducation may also be helpful for family members and caregivers.



A licensed psychologist, social worker, or counselor typically provides these therapies. This mental health professional often works with the psychiatrist to track progress. The number, frequency, and type of sessions should be based on the treatment needs of each person. As with medication, following the doctor’s instructions for any psychotherapy will provide the greatest benefit.

For more information, see the Substance Abuse and Mental Health Services Administration Web page on choosing a mental health therapist at <http://mentalhealth.samhsa.gov/publications/allpubs/KEN98-0055/default.asp>.

Recently, NIMH funded a clinical trial called the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD). This was the largest treatment study ever conducted for bipolar disorder (information at <http://www.nimh.nih.gov/health/trials/practical/step-bd/index.shtml>). In a study on psychotherapies, STEP-BD researchers compared people in two groups. The first group was treated with collaborative care (three sessions of psychoeducation over six weeks). The second group was treated with medication and intensive psychotherapy (30 sessions over nine months of CBT, interpersonal and social rhythm therapy, or family-focused therapy). Researchers found that the second group had fewer relapses, lower hospitalization rates, and were better able to stick with their treatment plans.<sup>42</sup> They were also more likely to get well faster and stay well longer.

NIMH is supporting more research on which combinations of psychotherapy and medication work best. The goal is to help people with bipolar disorder live symptom-free for longer periods and to recover from episodes more quickly. Researchers also hope to determine whether psychotherapy helps delay the start of bipolar disorder in children at high risk for the illness.

For more information on psychotherapy, visit the NIMH Web site at <http://www.nimh.nih.gov/health/topics/treatment/index.shtml>.

## Other treatments

**1. Electroconvulsive Therapy (ECT)**—For cases in which medication and/or psychotherapy does not work, electroconvulsive therapy (ECT) may be useful. ECT, formerly known as “shock therapy,” once had a bad reputation. But in recent years, it has greatly improved and can provide relief for people with severe bipolar disorder who have not been able to feel better with other treatments.

Before ECT is administered, a patient takes a muscle relaxant and is put under brief anesthesia. He or she does not consciously feel the electrical impulse administered in ECT. On average, ECT treatments last from 30–90 seconds. People who have ECT usually recover after 5–15 minutes and are able to go home the same day.<sup>43</sup>

Sometimes ECT is used for bipolar symptoms when other medical conditions, including pregnancy, make the use of medications too risky. ECT is a highly effective treatment for severely depressive, manic, or mixed episodes, but is generally not a first-line treatment.



ECT may cause some short-term side effects, including confusion, disorientation, and memory loss. But these side effects typically clear soon after treatment. People with bipolar disorder should discuss possible benefits and risks of ECT with an experienced doctor.<sup>44</sup>

**2. Sleep Medications**—People with bipolar disorder who have trouble sleeping usually sleep better after getting treatment for bipolar disorder. However, if sleeplessness does not improve, the doctor may suggest a change in medications. If the problems still continue, the doctor may prescribe sedatives or other sleep medications.

People with bipolar disorder should tell their doctor about all prescription drugs, over-the-counter medications, or supplements they are taking. Certain medications and supplements taken together may cause unwanted or dangerous effects.

### **Herbal Supplements**

In general, there is not much research about herbal or natural supplements. Little is known about their effects on bipolar disorder. An herb called St. John's wort (*Hypericum perforatum*), often marketed as a natural antidepressant, may cause a switch to mania in some people with bipolar disorder.<sup>45</sup> St. John's wort can also make other medications less effective, including some antidepressant and anticonvulsant medications.<sup>46</sup> Scientists are also researching omega-3 fatty acids (most commonly found in fish oil) to measure their usefulness for long-term treatment of bipolar disorder.<sup>47</sup> Study results have been mixed.<sup>48</sup> It is important to talk with a doctor before taking any herbal or natural supplements because of the serious risk of interactions with other medications.

## What can people with bipolar disorder expect from treatment?

Bipolar disorder has no cure, but can be effectively treated over the long-term. It is best controlled when treatment is continuous, rather than on and off. In the STEP-BD study, a little more than half of the people treated for bipolar disorder recovered over one year's time. For this study, recovery meant having two or fewer symptoms of the disorder for at least eight weeks.

However, even with proper treatment, mood changes can occur. In the STEP-BD study, almost half of those who recovered still had lingering symptoms. These people experienced a relapse or recurrence that was usually a return to a depressive state.<sup>49</sup> If a person had a mental illness in addition to bipolar disorder, he or she was more likely to experience a relapse.<sup>49</sup> Scientists are unsure, however, how these other illnesses or lingering symptoms increase the chance of relapse. For some people, combining psychotherapy with medication may help to prevent or delay relapse.<sup>42</sup>



Treatment may be more effective when people work closely with a doctor and talk openly about their concerns and choices. Keeping track of mood changes and symptoms with a daily life chart can help a doctor assess a person's response to treatments. Sometimes the doctor needs to change a treatment plan to make sure symptoms are controlled most effectively. A psychiatrist should guide any changes in type or dose of medication.

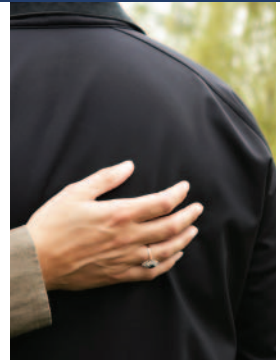
## How can I help a friend or relative who has bipolar disorder?

If you know someone who has bipolar disorder, it affects you too. The first and most important thing you can do is help him or her get the right diagnosis and treatment. You may need to make the appointment and go with him or her to see the doctor. Encourage your loved one to stay in treatment.

To help a friend or relative, you can:

- Offer emotional support, understanding, patience, and encouragement
- Learn about bipolar disorder so you can understand what your friend or relative is experiencing
- Talk to your friend or relative and listen carefully

- Listen to feelings your friend or relative expresses—be understanding about situations that may trigger bipolar symptoms
- Invite your friend or relative out for positive distractions, such as walks, outings, and other activities
- Remind your friend or relative that, with time and treatment, he or she can get better.



Never ignore comments about your friend or relative harming himself or herself. Always report such comments to his or her therapist or doctor.

## Support for caregivers

Like other serious illnesses, bipolar disorder can be difficult for spouses, family members, friends, and other caregivers. Relatives and friends often have to cope with the person's serious behavioral problems, such as wild spending sprees during mania, extreme withdrawal during depression, poor work or school performance. These behaviors can have lasting consequences.

Caregivers usually take care of the medical needs of their loved ones. The caregivers have to deal with how this affects their own health. The stress that caregivers are under may lead to missed work or lost free time, strained relationships with people who may not understand the situation, and physical and mental exhaustion.

Stress from caregiving can make it hard to cope with a loved one's bipolar symptoms. One study shows that if a caregiver is under a lot of stress, his or her loved one has more trouble following the treatment plan, which increases the chance for a major bipolar episode.<sup>50</sup> It is important that people caring for those with bipolar disorder also take care of themselves.

## How can I help myself if I have bipolar disorder?

It may be very hard to take that first step to help yourself. It may take time, but you can get better with treatment.

To help yourself:

- Talk to your doctor about treatment options and progress
- Keep a regular routine, such as eating meals at the same time every day and going to sleep at the same time every night
- Try to get enough sleep
- Stay on your medication

- Learn about warning signs signaling a shift into depression or mania
- Expect your symptoms to improve gradually, not immediately.

## Where can I go for help?

If you are unsure where to go for help, ask your family doctor. Others who can help are listed below.

- Mental health specialists, such as psychiatrists, psychologists, social workers, or mental health counselors
- Health maintenance organizations
- Community mental health centers
- Hospital psychiatry departments and outpatient clinics
- Mental health programs at universities or medical schools
- State hospital outpatient clinics
- Family services, social agencies, or clergy
- Peer support groups
- Private clinics and facilities
- Employee assistance programs
- Local medical and/or psychiatric societies.

You can also check the phone book under “mental health,” “health,” “social services,” “hotlines,” or “physicians” for phone numbers and addresses. An emergency room doctor can also provide temporary help and can tell you where and how to get further help.

## What if I or someone I know is in crisis?

If you are thinking about harming yourself, or know someone who is, tell someone who can help immediately.

- Call your doctor.
- Call 911 or go to a hospital emergency room to get immediate help or ask a friend or family member to help you do these things.
- Call the toll-free, 24-hour hotline of the National Suicide Prevention Lifeline at 1-800-273-TALK (1-800-273-8255); TTY: 1-800-799-4TTY (4889) to talk to a trained counselor.

Make sure you or the suicidal person is not left alone.

## Citations

1. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005 Jun;62(6):593-602.
2. Akiskal HS. "Mood Disorders: Clinical Features." in Sadock BJ, Sadock VA (ed). (2005). *Kaplan & Sadock's Comprehensive Textbook of Psychiatry*. Lippincott Williams & Wilkins:Philadelphia.
3. Schneck CD, Miklowitz DJ, Miyahara S, Araga M, Wisniewski S, Gyulai L, Allen MH, Thase ME, Sachs GS. The prospective course of rapid-cycling bipolar disorder: findings from the STEP-BD. *Am J Psychiatry*. 2008 Mar;165(3):370-7; quiz 410.
4. Schneck CD, Miklowitz DJ, Calabrese JR, Allen MH, Thomas MR, Wisniewski SR, Miyahara S, Shelton MD, Ketter TA, Goldberg JF, Bowden CL, Sachs GS. Phenomenology of rapid-cycling bipolar disorder: data from the first 500 participants in the Systematic Treatment Enhancement Program. *Am J Psychiatry*. 2004 Oct;161(10):1902-1908.
5. Goodwin FK, Jamison KR. (2007) *Manic-Depressive Illness: Bipolar Disorders and Recurrent Depression, Second Edition*. Oxford University Press:New York.
6. *Constituency Survey: Living With Bipolar Disorder: How Far Have We Really Come?* National Depressive and Manic-Depressive Association. 2001.
7. Bizzarri JV, Sbrana A, Rucci P, Ravani L, Massei GJ, Gonnelli C, Spagnolli S, Doria MR, Raimondi F, Endicott J, Dell'Osso L, Cassano GB. The spectrum of substance abuse in bipolar disorder: reasons for use, sensation seeking and substance sensitivity. *Bipolar Disord*. 2007 May;9(3):213-220.
8. Mueser KT, Goodman LB, Trumbetta SL, Rosenberg SD, Osher C, Vidaver R, Auciello P, Foy DW. Trauma and posttraumatic stress disorder in severe mental illness. *J Consult Clin Psychol*. 1998 Jun;66(3):493-499.
9. Strakowski SM, Sax KW, McElroy SL, Keck PE, Jr., Hawkins JM, West SA. Course of psychiatric and substance abuse syndromes co-occurring with bipolar disorder after a first psychiatric hospitalization. *J Clin Psychiatry*. 1998 Sep;59(9):465-471.
10. Krishnan KR. Psychiatric and medical comorbidities of bipolar disorder. *Psychosom Med*. 2005 Jan-Feb;67(1):1-8.
11. Kupfer DJ. The increasing medical burden in bipolar disorder. *JAMA*. 2005 May 25;293(20):2528-2530.
12. Nurnberger JI, Jr., Foroud T. Genetics of bipolar affective disorder. *Curr Psychiatry Rep*. 2000 Apr;2(2):147-157.
13. Potash JB, Toolan J, Steele J, Miller EB, Pearl J, Zandi PP, Schulze TG, Kassem L, Simpson SG, Lopez V, MacKinnon DF, McMahon FJ. The bipolar disorder phenome database: a resource for genetic studies. *Am J Psychiatry*. 2007 Aug;164(8):1229-1237.
14. Soares JC, Mann JJ. The functional neuroanatomy of mood disorders. *J Psychiatr Res*. 1997 Jul-Aug;31(4):393-432.

15. Soares JC, Mann JJ. The anatomy of mood disorders--review of structural neuroimaging studies. *Biol Psychiatry*. 1997 Jan 1;41(1):86-106.
16. Gogtay N, Ordonez A, Herman DH, Hayashi KM, Greenstein D, Vaituzis C, Lenane M, Clasen L, Sharp W, Giedd JN, Jung D, Nugent lii TF, Toga AW, Leibenluft E, Thompson PM, Rapoport JL. Dynamic mapping of cortical development before and after the onset of pediatric bipolar illness. *J Child Psychol Psychiatry*. 2007 Sep;48(9):852-862.
17. Hirschfeld RM. Psychiatric Management, from "Guideline Watch: Practice Guideline for the Treatment of Patients With Bipolar Disorder, 2nd Edition". <http://www.psychiatryonline.com/content.aspx?aID=148440>. Accessed on February 11, 2008.
18. Sachs GS, Printz DJ, Kahn DA, Carpenter D, Docherty JP. The Expert Consensus Guideline Series: Medication Treatment of Bipolar Disorder 2000. *Postgrad Med*. 2000 Apr;Spec No.:1-104.
19. Sachs GS, Thase ME. Bipolar disorder therapeutics: maintenance treatment. *Biol Psychiatry*. 2000 Sep 15;48(6):573-581.
20. Huxley NA, Parikh SV, Baldessarini RJ. Effectiveness of psychosocial treatments in bipolar disorder: state of the evidence. *Harv Rev Psychiatry*. 2000 Sep;8(3):126-140.
21. Miklowitz DJ. A review of evidence-based psychosocial interventions for bipolar disorder. *J Clin Psychiatry*. 2006 67(Suppl 11):28-33.
22. Kupka RW, Nolen WA, Post RM, McElroy SL, Altshuler LL, Denicoff KD, Frye MA, Keck PE, Jr., Leverich GS, Rush AJ, Suppes T, Pollio C, Drexhage HA. High rate of autoimmune thyroiditis in bipolar disorder: lack of association with lithium exposure. *Biol Psychiatry*. 2002 Feb 15;51(4):305-311.
23. Bowden CL, Calabrese JR, McElroy SL, Gyulai L, Wassef A, Petty F, Pope HG, Jr., Chou JC, Keck PE, Jr., Rhodes LJ, Swann AC, Hirschfeld RM, Wozniak PJ, Group DMS. A randomized, placebo-controlled 12-month trial of divalproex and lithium in treatment of outpatients with bipolar I disorder. *Arch Gen Psychiatry*. 2000 May;57(5):481-489.
24. Calabrese JR, Shelton MD, Rapport DJ, Youngstrom EA, Jackson K, Bilali S, Ganocy SJ, Findling RL. A 20-month, double-blind, maintenance trial of lithium versus divalproex in rapid-cycling bipolar disorder. *Am J Psychiatry*. 2005 Nov;162(11):2152-2161.
25. Vainionpaa LK, Rattaya J, Knip M, Tapanainen JS, Pakarinen AJ, Lanning P, Tekay A, Myllyla VV, Isojarvi JI. Valproate-induced hyperandrogenism during pubertal maturation in girls with epilepsy. *Ann Neurol*. 1999 Apr;45(4):444-450.
26. Joffe H, Cohen LS, Suppes T, McLaughlin WL, Lavori P, Adams JM, Hwang CH, Hall JE, Sachs GS. Valproate is associated with new-onset oligoamenorrhea with hyperandrogenism in women with bipolar disorder. *Biol Psychiatry*. 2006 Jun 1;59(11):1078-1086.
27. Joffe H, Cohen LS, Suppes T, Hwang CH, Molay F, Adams JM, Sachs GS, Hall JE. Longitudinal follow-up of reproductive and metabolic features of valproate-associated polycystic ovarian syndrome features: A preliminary report. *Biol Psychiatry*. 2006 Dec 15;60(12):1378-1381.

28. Tohen M, Sanger TM, McElroy SL, Tollefson GD, Chengappa KN, Daniel DG, Petty F, Centorrino F, Wang R, Grundy SL, Greaney MG, Jacobs TG, David SR, Toma V. Olanzapine versus placebo in the treatment of acute mania. Olanzapine HGEH Study Group. *Am J Psychiatry*. 1999 May;156(5):702-709.
29. Thase ME, Sachs GS. Bipolar depression: pharmacotherapy and related therapeutic strategies. *Biol Psychiatry*. 2000 Sep 15;48(6):558-572.
30. Sachs GS, Nierenberg AA, Calabrese JR, Marangell LB, Wisniewski SR, Gyulai L, Friedman ES, Bowden CL, Fossey MD, Ostacher MJ, Ketter TA, Patel J, Hauser P, Rapport D, Martinez JM, Allen MH, Miklowitz DJ, Otto MW, Dennehy EB, Thase ME. Effectiveness of adjunctive antidepressant treatment for bipolar depression. *N Engl J Med*. 2007 Apr 26;356(17):1711-1722.
31. MedlinePlus Drug Information: Lithium. <http://www.nlm.nih.gov/medlineplus/druginfo/medmaster/a681039.html>. Accessed on Nov 19, 2007.
32. MedlinePlus Drug Information: Carbamazepine. <http://www.nlm.nih.gov/medlineplus/druginfo/medmaster/a682237.html>. Accessed on July 13, 2007.
33. MedlinePlus Drug Information: Lamotrigine. <http://www.nlm.nih.gov/medlineplus/druginfo/medmaster/a695007.html>. Accessed on February 12, 2008.
34. MedlinePlus Drug Information: Valproic Acid. <http://www.nlm.nih.gov/medlineplus/druginfo/medmaster/a682412.html>. Accessed on February 12, 2008.
35. MedlinePlus Drug Information: Topiramate. <http://www.nlm.nih.gov/medlineplus/druginfo/medmaster/a697012.html>. Accessed on February 22, 2008.
36. MedlinePlus Drug Information: Gabapentin. <http://www.nlm.nih.gov/medlineplus/druginfo/medmaster/a694007.html>. Accessed on February 22, 2008.
37. MedlinePlus Drug Information: Oxcarbazepine. <http://www.nlm.nih.gov/medlineplus/druginfo/medmaster/a601245.html>. Accessed on February 22, 2008.
38. Lieberman JA, Stroup TS, McEvoy JP, Swartz MS, Rosenheck RA, Perkins DO, Keefe RS, Davis SM, Davis CE, Lebowitz BD, Severe J, Hsiao JK. Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *N Engl J Med*. 2005 Sep 22;353(12):1209-1223.
39. Llewellyn A, Stowe ZN, Strader JR, Jr. The use of lithium and management of women with bipolar disorder during pregnancy and lactation. *J Clin Psychiatry*. 1998 59(Suppl 6):57-64.
40. Viguera AC, Whitfield T, Baldessarini RJ, Newport J, Stowe Z, Reminick A, Zurick A, Cohen LS. Risk of recurrence in women with bipolar disorder during pregnancy: prospective study of mood stabilizer discontinuation. *Am J Psychiatry*. 2007 Dec;164(12):1817-1824.
41. Yonkers KA, Wisner KL, Stowe Z, Leibenluft E, Cohen L, Miller L, Manber R, Viguera A, Suppes T, Altschuler L. Management of bipolar disorder during pregnancy and the postpartum period. *Am J Psychiatry*. 2004 Apr;161(4):608-620.
42. Miklowitz DJ, Otto MW, Frank E, Reilly-Harrington NA, Wisniewski SR, Kogan JN, Nierenberg AA, Calabrese JR, Marangell LB, Gyulai L, Araga M, Gonzalez JM, Shirley ER, Thase ME, Sachs GS. Psychosocial treatments for bipolar depression: a 1-year randomized trial from the Systematic Treatment Enhancement Program (STEP). *Arch Gen Psychiatry*. 2007 Apr;64(4):419-426.

43. Pandya M, Pozuelo L, Malone D. Electroconvulsive therapy: what the internist needs to know. *Cleve Clin J Med*. 2007 Sep;74(9):679-685.
44. *Mental Health: A Report of the Surgeon General*. U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health. 1999.
45. Nierenberg AA, Burt T, Matthews J, Weiss AP. Mania associated with St. John's wort. *Biol Psychiatry*. 1999 Dec 15;46(12):1707-1708.
46. Henney JE. From the Food and Drug Administration: Risk of Drug Interactions With St John's Wort. *JAMA*. 2000 Apr 5;283(13):1679.
47. Stoll AL, Severus WE, Freeman MP, Rueter S, Zboyan HA, Diamond E, Cress KK, Marangell LB. Omega 3 fatty acids in bipolar disorder: a preliminary double-blind, placebo-controlled trial. *Arch Gen Psychiatry*. 1999 May;56(5):407-412.
48. Freeman MP, Hibbeln JR, Wisner KL, Davis JM, Mischoulon D, Peet M, Keck PE, Jr., Marangell LB, Richardson AJ, Lake J, Stoll AL. Omega-3 fatty acids: evidence basis for treatment and future research in psychiatry. *J Clin Psychiatry*. 2006 Dec;67(12):1954-1967.
49. Perlis RH, Ostacher MJ, Patel JK, Marangell LB, Zhang H, Wisniewski SR, Ketter TA, Miklowitz DJ, Otto MW, Gyulai L, Reilly-Harrington NA, Nierenberg AA, Sachs GS, Thase ME. Predictors of recurrence in bipolar disorder: primary outcomes from the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD). *Am J Psychiatry*. 2006 Feb;163(2):217-224.
50. Perlick DA, Rosenheck RA, Clarkin JF, Maciejewski PK, Sirey J, Struening E, Link BG. Impact of family burden and affective response on clinical outcome among patients with bipolar disorder. *Psychiatr Serv*. 2004 Sep;55(9):1029-1035.



## For more information on bipolar disorder

Visit the National Library of Medicine's:

MedlinePlus

<http://medlineplus.gov>

En Español

<http://medlineplus.gov/spanish>

For information on clinical trials for bipolar disorder:

NIMH supported clinical trials

<http://www.nimh.nih.gov/health/trials/index.shtml>

National Library of Medicine Clinical Trials Database:

<http://www.clinicaltrials.gov>

Clinical trials at NIMH in Bethesda, MD

<http://patientinfo.nimh.nih.gov>

Information from NIMH is available in multiple formats. You can browse online, download documents in PDF, and order materials through the mail. Check the NIMH Web site at <http://www.nimh.nih.gov> for the latest information on this topic and to order publications.

If you do not have Internet access please contact the NIMH Information Resource Center at the numbers listed below.

### **National Institute of Mental Health**

Science Writing, Press & Dissemination Branch

6001 Executive Boulevard

Room 8184, MSC 9663

Bethesda, MD 20892-9663

Phone: 301-443-4513 or

1-866-615-NIMH (6464) toll-free

TTY: 301-443-8431 or

1-866-415-8051 toll-free

FAX: 301-443-4279

E-mail: [nimhinfo@nih.gov](mailto:nimhinfo@nih.gov)

Web site: <http://www.nimh.nih.gov>

## **Reprints:**

This publication is in the public domain and may be reproduced or copied without permission from NIMH. We encourage you to reproduce it and use it in your efforts to improve public health. Citation of the National Institute of Mental Health as a source is appreciated. However, using government materials inappropriately can raise legal or ethical concerns, so we ask you to use these guidelines:

- NIMH does not endorse or recommend any commercial products, processes, or services, and our publications may not be used for advertising or endorsement purposes.
- NIMH does not provide specific medical advice or treatment recommendations or referrals; our materials may not be used in a manner that has the appearance of such information.
- NIMH requests that non-Federal organizations not alter our publications in ways that will jeopardize the integrity and “brand” when using the publication.
- Addition of non-Federal Government logos and Web site links may not have the appearance of NIMH endorsement of any specific commercial products or services or medical treatments or services.

If you have questions regarding these guidelines and use of NIMH publications, please contact the NIMH Information Resource Center at 1-866-615-6464 or e-mail at [nimhinfo@nih.gov](mailto:nimhinfo@nih.gov).

The photos in this publication are of models and are used for illustrative purposes only.

# NIMH

National Institute  
of Mental Health



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
National Institutes of Health  
NIH Publication No. 09-3679  
Revised 2008  
Reprinted 2009

# Bipolar Disorder

[Home](#) | [Symptoms, Causes and Diagnosis](#) | [Treatments, Services and Supports](#) | [Latest Research](#) | [Resources](#)

## Symptoms, Causes and Diagnosis

### Symptoms

The occurrence of at least one episode of abnormal mood elevation such as mania or hypomania is the key feature that distinguishes bipolar disorder from other disorders such as depression. People living with bipolar disorder typically find more difficulty during depressive episodes, which tend to be more frequent and last longer than manic or hypomanic episodes.

With bipolar disorder there is a spectrum of symptoms, including:

- Elevated mood, depressed mood (mania and depression)
- Anxiety
- Irritability
- Intense imagination
- Silliness
- Oppositional behavior
- High activity
- Hypersensitivity
- Difficulties with sleep

The states of mania and depression can occur in distinct episodes or can switch rapidly, even multiple times in one week. A person who is experiencing a severe bipolar episode of mania or depression may also have psychotic symptoms such as hallucinations or delusions. In individuals living with bipolar disorder, psychotic symptoms tend to be consistent with the direction of the person's extreme mood. For example, a person in a manic state might believe he or she is famous or has special powers. An individual in a depressed state, however, might believe he or she is extremely poor or unable to perform normal tasks.

The occurrence of psychotic symptoms may lead to individuals with bipolar disorder being wrongly diagnosed as having schizophrenia, another severe mental illness that is often accompanied by hallucinations and delusions. Fortunately, these symptoms can be managed with the right treatment and support.

### Mania Explained

Abnormal mood elevation such as mania or hypomania constitutes the essential feature required for diagnosis of bipolar disorder. The appearance and severity of mood elevation varies among individuals living with bipolar disorder. While some individuals will experience episodes of mania or hypomania many times, others may experience it only rarely. It is not the number of occurrences of mania that

define which type of bipolar disorder is present, but the degree of impairment associated with the most severe episode of elevated mood during a person's lifetime that determines what subtype of bipolar disorder a person might have.

When a period of lower-intensity mania without significant impairment in social or occupational ability occurs, it is called hypomania. A diagnosable manic episode has to include noticeable impairment. Although the experience of elevated mood may be very appealing, especially if it occurs after depression, the "high" often does not stop at a comfortable or controllable level.

#### Ask the Doctor: Dr. Ellen Frank on The Role of Circadian and Sleep-wake Factors in Bipolar Disorder Sept. 23, 2011

Couldn't load plug-in.

Press the play button to begin podcast. Must have flash installed on your computer.

Alternatively, you may [download the podcast](#) (right click and choose "save target as" or "save link as").

#### Ask the Doctor: Dr. Ellen Liebenluft on Bipolar Disorder in Adolescents April 15, 2011

Couldn't load plug-in.

Press the play button to begin podcast. Must have flash installed on your computer.

Alternatively, you may [download the podcast](#) (right click and choose "save target as" or "save link as").

## Bipolar Disorder



[download brochure](#)

| [purchase brochure](#)

[Becoming an advocate](#)

[Coping strategies](#)

A person's mood state may rapidly become more irritable, his or her behavior more unpredictable and his or her judgment more impaired. During periods of mania, people frequently behave impulsively, make reckless decisions and take unusual risks. More often than not, during an episode the person discounts or is unaware of any negative consequences of their actions.

Symptoms of mania can include:

- Feeling overly happy for an extended period of time.
- An abnormally increased level of irritability.
- Overconfidence or an extremely inflated self-esteem.
- Increased talkativeness.
- Decreased amount of sleep.
- Engaging in lots of risky behavior, such as spending sprees and impulsive sex.
- Racing of thoughts, jumping quickly from one idea to another.
- Easily distractable.
- Feeling agitated or "jumpy."

## Depression Explained

Depression is more than just a sad mood that a person may experience after a bad day. Major depression is a medical illness that produces a combination of physical and emotional symptoms that inhibit one's ability to function nearly every day for a period of at least two weeks.

Symptoms of depression can include:

- Diminished capacity for pleasure or loss of interest in activities once enjoyed.
- A long period of feeling hopeless, helpless or low self-esteem.
- Decreased amount of energy; feeling constantly tired.
- Inability to concentrate and make simple decisions.
- Change in eating, sleeping or other daily habits.
- Being agitated or slowed down in movement, speech or thought.
- Thoughts of death or suicide attempts.

Not everyone will experience all of these symptoms. For example, someone may have problems sleeping and feel low in energy but find that their appetite is unaffected. The level of depression can range from severe to moderate to mild low mood. Mild low mood is called dysthymia when it is chronic or long term.

The lows of depression are often so debilitating that people in this phase of the illness may even be unable to get out of bed. Typically, depressed individuals have difficulty falling asleep and awaken throughout the night. However, about 20 percent of depressed individuals sleep more than usual.

When experiencing depression, even minor decisions such as what to have for dinner can be overwhelming; self-esteem plummets and the mind often becomes obsessed with losses and personal failures, and feelings of guilt and helplessness abound.

Negative thinking can lead to thoughts of suicide and actual ideation of suicide. In bipolar disorder, suicide is an ever-present danger on both sides of mood swings, as some individuals can become suicidal in manic or mixed (high and low) states.

## Causes

Although some ground has been made in discovering the factors associated with the risk of developing bipolar disorder, scientists have not discovered a single precise cause. Based on the best available data, many scientists suggest that bipolar disorder can be caused by more than one factor (e.g., genes, environmental stress, nutrition, inflammatory factors or other stress in the brain).

## Genetics

Bipolar disorder often runs in families and studies suggest a genetic component to the illness. Genes help control how the body works and grows. The chances of manifesting bipolar disorder are increased if a child's parents or siblings have the disorder. However, this does not necessarily mean that a child from a family with a history of bipolar disorder will develop the disorder.

Furthermore, studies of identical twins have found that even if one twin develops bipolar disorder it does not mean the second twin will develop it as well. This is worth noting because identical twins share all the same genes. Because one twin may develop bipolar disorder

and the other may not means that there are other factors in play.

## Environment

Often a stressful event such as an unexpected loss, general medical illness, difficult relationship or financial problems—or any major change in life—can trigger the first bipolar episode. Therefore, an individual's coping skills or style of handling stress may also play a role in the development of the illness. In some cases, drug abuse can trigger the disorder. For some people triggers are not identifiable or become harder to identify as an individual experiences more episodes.

## Brain Structure

Brain scans cannot diagnose bipolar disorder in an individual. However, researchers using techniques such as functional magnetic resonance imaging (fMRI) and positron emission tomography (PET) have shown subtle differences in the average size or pattern activation of some brain structures in the people with bipolar disorder compared to the brains of people without a mental illness as well as people with other mental disorders. While brain structure alone may not cause bipolar disorder, some conditions which damage brain tissue can predispose a person to the mental illness.

## Diagnosis

As with all types of illness, a doctor must be seen to provide a proper diagnosis. The doctor may perform a physical examination, an interview and lab tests. Unfortunately, bipolar disorder cannot be identified through a simple blood test or body scan. But these tests can help rule out other potential causes such as a hyperthyroidism. If it is determined that the symptoms are not caused by any other illness, the doctor may recommend the individual sees a mental health professional such as a psychiatrist.

Doctors usually diagnose bipolar disorder by using the *Diagnostic and Statistical Manual of Mental Disorders*, or *DSM*. It is currently in its fourth edition, with a new revision slated to come out in 2013. The *DSM-IV* defines four basic subtypes of bipolar disorder:

**Bipolar I Disorder** is defined as an illness in which people have experienced one or more episodes of mania. Though an episode of depression is not necessary for a diagnosis, most people will have episodes of both mania and depression. In order to be diagnosed, manic or mixed episodes must last at least seven days, or be so severe that they require hospitalization.

**Bipolar II Disorder** is a subset of bipolar disorder in which people largely experience depressive episodes shifting back and forth with hypomanic episodes, but never a full manic episode.

**Cyclothymic Disorder, or Cyclothymia**, refers to a more chronic unstable mood state. This diagnosis is given when an individual experiences hypomania and mild depression for at least two years. A person with cyclothymia may have periods of normal mood, but these periods are brief and last less than eight weeks.

**Bipolar Disorder Not Otherwise Specified (BP-NOS)** is diagnosed when a person does not meet the criteria for bipolar I, II or cyclothymia but has had periods of clinically significant abnormal mood elevation. The symptoms may either not last long enough or did not meet the full criteria for episodes required to diagnose bipolar I or II. For instance, a person with one or more episodes of hypomania but never depression or mania would be diagnosed BP-NOS, as would a person with periods of fluctuating mood as described above for cyclothymia but lasting less than one year.

African Americans and Latinos are more prone to misdiagnosis, likely due to differing cultural or religious beliefs or language barriers. For anyone who has received a diagnosis of bipolar disorder, it is important to look for a health care professional who understands a person's cultural background and shares the same expectations for treatment.

## Co-occurring Disorders

A person living with bipolar disorder often meets the criteria for one or more additional disorders. Anxiety disorders, including posttraumatic stress disorder (PTSD) and attention-deficit hyperactivity disorder (ADHD) routinely co-occur with bipolar disorder.

Substance abuse is also common among people with bipolar disorder. Many people use alcohol or drugs to try to control their mood states or help treat symptoms. However, using drugs will ultimately result in a worsening of the illness not an improvement. The use of drugs can lead to more frequent relapse and an increase in suicide attempts.

Successful treatment of bipolar disorder almost always improves these other conditions. Similarly, successful treatment of these conditions usually improves the symptoms of bipolar disorder. These other illnesses, however, can make it hard to diagnose and treat bipolar disorder. Some medicines used to treat obsessive-compulsive disorder (antidepressants) and ADHD (stimulants) may worsen symptoms of bipolar disorder and may even trigger a manic episode, so care should be taken when beginning medication.

# Symptoms, Causes and Diagnosis

## Symptoms

The occurrence of at least one episode of abnormal mood elevation such as mania or hypomania is the key feature that distinguishes bipolar disorder from other disorders such as depression. People living with bipolar disorder typically find more difficulty during depressive episodes, which tend to be more frequent and last longer than manic or hypomanic episodes.

With bipolar disorder there is a spectrum of symptoms, including:

- Elevated mood, depressed mood (mania and depression)
- Anxiety
- Irritability
- Intense imagination
- Silliness
- Oppositional behavior
- High activity
- Hypersensitivity
- Difficulties with sleep

The states of mania and depression can occur in distinct episodes or can switch rapidly, even multiple times in one week. A person who is experiencing a severe bipolar episode of mania or depression may also have psychotic symptoms such as hallucinations or delusions. In individuals living with bipolar disorder, psychotic symptoms tend to be consistent with the direction of the person's extreme mood. For example, a person in a manic state might believe he or she is famous or has special powers. An individual in a depressed state, however, might believe he or she is extremely poor or unable to perform normal tasks.

The occurrence of psychotic symptoms may lead to individuals with bipolar disorder being wrongly diagnosed as having schizophrenia, another severe mental illness that is often accompanied by hallucinations and delusions. Fortunately, these symptoms can be managed with the right treatment and support.

## Mania Explained

Abnormal mood elevation such as mania or hypomania constitutes the essential feature required for diagnosis of bipolar disorder. The appearance and severity of mood elevation varies among individuals living with bipolar disorder. While some individuals will experience episodes of mania or hypomania many times, others may experience it only rarely. It is not the number of occurrences of mania that define which type of bipolar disorder is present, but the degree of impairment associated with the most severe episode of elevated mood during a person's lifetime that determines what subtype of bipolar disorder a person might have.

When a period of lower-intensity mania without significant impairment in social or occupational ability occurs, it is called hypomania. A diagnosable manic episode has to include noticeable impairment. Although the experience of elevated mood may be very appealing, especially if it occurs after depression, the "high" often does not stop at a comfortable or controllable level.

A person's mood state may rapidly become more irritable, his or her behavior more unpredictable and his or her judgment more impaired. During periods of mania, people frequently behave impulsively, make reckless decisions and take unusual risks. More often than not, during an episode the person discounts or is unaware of any negative consequences of their actions.

Symptoms of mania can include:

- Feeling overly happy for an extended period of time.
- An abnormally increased level of irritability.
- Overconfidence or an extremely inflated self-esteem.
- Increased talkativeness.
- Decreased amount of sleep.
- Engaging in lots of risky behavior, such as spending sprees and impulsive sex.
- Racing of thoughts, jumping quickly from one idea to another.
- Easily distractable.
- Feeling agitated or "jumpy."

## Depression Explained

Depression is more than just a sad mood that a person may experience after a bad day. Major depression is a medical illness that produces a combination of physical and emotional symptoms that inhibit one's ability to function nearly every day for a period of at least two weeks.

Symptoms of depression can include:

- Diminished capacity for pleasure or loss of interest in activities once enjoyed.
- A long period of feeling hopeless, helpless or low self-esteem.
- Decreased amount of energy; feeling constantly tired.
- Inability to concentrate and make simple decisions.
- Change in eating, sleeping or other daily habits.
- Being agitated or slowed down in movement, speech or thought.
- Thoughts of death or suicide attempts.

Not everyone will experience all of these symptoms. For example, someone may have problems sleeping and feel low in energy but find that their appetite is unaffected. The level of depression can range from severe to moderate to mild low mood. Mild low mood is called dysthymia when it is chronic or long term.

The lows of depression are often so debilitating that people in this phase of the illness may even be unable to get out of bed. Typically, depressed individuals have difficulty falling asleep and awaken throughout the night. However, about 20 percent of depressed individuals sleep more than usual.

When experiencing depression, even minor decisions such as what to have for dinner can be overwhelming; self-esteem plummets and the mind often becomes obsessed with losses and personal failures, and feelings of guilt and helplessness abound.

Negative thinking can lead to thoughts of suicide and actual ideation of suicide. In bipolar disorder, suicide is an ever-present danger on both sides of mood swings, as some individuals can become suicidal in manic or mixed (high and low) states.

## Causes

Although some ground has been made in discovering the factors associated with the risk of developing bipolar disorder, scientists have not discovered a single precise cause. Based on the best available data, many scientists suggest that bipolar disorder can be caused by more than one factor (e.g., genes, environmental stress, nutrition, inflammatory factors or other stress in the brain).

## Genetics

Bipolar disorder often runs in families and studies suggest a genetic component to the illness. Genes help control how the body works and grows. The chances of manifesting bipolar disorder are increased if a child's parents or siblings have the disorder. However, this does not necessarily mean that a child from a family with a history of bipolar disorder will develop the disorder.

Furthermore, studies of identical twins have found that even if one twin develops bipolar disorder it does not mean the second twin will develop it as well. This is worth noting because identical twins share all the same genes. Because one twin may develop bipolar disorder and the other may not means that there are other factors in play.

## Environment

Often a stressful event such as an unexpected loss, general medical illness, difficult relationship or financial problems—or any major change in life—can trigger the first bipolar episode. Therefore, an individual's coping skills or style of handling stress may also play a role in the development of the illness. In some cases, drug abuse can trigger the disorder. For some people triggers are not identifiable or become harder to identify as an individual experiences more episodes.

## Brain Structure

Brain scans cannot diagnose bipolar disorder in an individual. However, researchers using techniques such as functional magnetic resonance imaging (fMRI) and positron emission tomography (PET) have shown subtle differences in the average size or pattern activation of some brain structures in the people with bipolar disorder compared to the brains of people without a mental illness as well as people with other mental disorders. While brain structure alone may not cause bipolar disorder, some conditions which damage brain tissue can predispose a person to the mental illness.

## Diagnosis

As with all types of illness, a doctor must be seen to provide a proper diagnosis. The doctor may perform a physical examination, an interview and lab tests. Unfortunately, bipolar disorder cannot be identified through a simple blood test or body scan. But these tests can



help rule out other potential causes such as a hyperthyroidism. If it is determined that the symptoms are not caused by any other illness, the doctor may recommend the individual sees a mental health professional such as a psychiatrist.

Doctors usually diagnose bipolar disorder by using the *Diagnostic and Statistical Manual of Mental Disorders*, or *DSM*. It is currently in its fourth edition, with a new revision slated to come out in 2013. The *DSM-IV* defines four basic subtypes of bipolar disorder:

**Bipolar I Disorder** is defined as an illness in which people have experienced one or more episodes of mania. Though an episode of depression is not necessary for a diagnosis, most people will have episodes of both mania and depression. In order to be diagnosed, manic or mixed episodes must last at least seven days, or be so severe that they require hospitalization.

**Bipolar II Disorder** is a subset of bipolar disorder in which people largely experience depressive episodes shifting back and forth with hypomanic episodes, but never a full manic episode.

**Cyclothymic Disorder, or Cyclothymia**, refers to a more chronic unstable mood state. This diagnosis is given when an individual experiences hypomania and mild depression for at least two years. A person with cyclothymia may have periods of normal mood, but these periods are brief and last less than eight weeks.

**Bipolar Disorder Not Otherwise Specified (BP-NOS)** is diagnosed when a person does not meet the criteria for bipolar I, II or cyclothymia but has had periods of clinically significant abnormal mood elevation. The symptoms may either not last long enough or did not meet the full criteria for episodes required to diagnose bipolar I or II. For instance, a person with one or more episodes of hypomania but never depression or mania would be diagnosed BP-NOS, as would a person with periods of fluctuating mood as described above for cyclothymia but lasting less than one year.

African Americans and Latinos are more prone to misdiagnosis, likely due to differing cultural or religious beliefs or language barriers. For anyone who has received a diagnosis of bipolar disorder, it is important to look for a health care professional who understands a person's cultural background and shares the same expectations for treatment.

## Co-occurring Disorders

A person living with bipolar disorder often meets the criteria for one or more additional disorders. Anxiety disorders, including posttraumatic stress disorder (PTSD) and attention-deficit hyperactivity disorder (ADHD) routinely co-occur with bipolar disorder.

Substance abuse is also common among people with bipolar disorder. Many people use alcohol or drugs to try to control their mood states or help treat symptoms. However, using drugs will ultimately result in a worsening of the illness not an improvement. The use of drugs can lead to more frequent relapse and an increase in suicide attempts.

Successful treatment of bipolar disorder almost always improves these other conditions. Similarly, successful treatment of these conditions usually improves the symptoms of bipolar disorder. These other illnesses, however, can make it hard to diagnose and treat bipolar disorder. Some medicines used to treat obsessive-compulsive disorder (antidepressants) and ADHD (stimulants) may worsen symptoms of bipolar disorder and may even trigger a manic episode, so care should be taken when beginning medication.

## Treatments, Services and Supports

Because bipolar disorder is a chronic illness, continuous maintenance to help prevent the reemergence of symptoms is recommended. Providing proper treatment helps most individuals living with bipolar disorder control their mood swings and other symptoms. The management of the illness should include attention to lifestyle, stress management, supports and also medication options. There is no one approach. It is essential to put together a care plan with elements specific to your needs.

If bipolar disorder is left untreated, it tends to get worse and the symptoms can become more pronounced. Recognition and diagnosis of the disorder in its earliest stages is important so that one can receive effective treatment. Effective treatment plans usually include medication, psychotherapy, education, self-management strategies and external supports such as family, friends and formal support groups. Combining these elements and revising the treatment plan based on assessment of an individual's response is the best means of preventing relapse and reducing the severity of symptoms.

### Medications

Not everyone responds to medications in the same way. Often, multiple types of medication must be assessed in order to find the one, or ones, that are the most effective for an individual. Some of the types of medication used to treat bipolar disorder are listed below. Information on medications can change. For the most up to date information on use and side effects contact the U.S. Food and Drug Administration (FDA) at [www.fda.gov](http://www.fda.gov).

**Mood-stabilizing medications** are often the first choice of medication when treating bipolar disorder. They are referred to as "mood stabilizers" because of their ability to return an individual to usual level of psychosocial functioning. Except for lithium, all of the below "mood stabilizer" medications are known as anticonvulsants.

Generic Name	Brand Name
<a href="#">Lithium</a>	Eskalith or Lithobid
<a href="#">Valproic Acid (or Divalproex Sodium)</a>	Depakote
<a href="#">Lamotrigine</a>	Lamictal
<a href="#">Carbamazepine</a>	Tegretol

Lithium has been used for more than 50 years for the stabilization and treatment of bipolar disorder. It is typically more effective when administered earlier in the course of the illness. Research has also shown that it is most effective in those individuals with a family history of the illness and in those experiencing the bipolar I swings between mania and depression with a return to normal function between episodes. The use of lithium has proved effective in helping prevent relapse as well as beneficial in the continued treatment of bipolar depression. There is evidence that lithium can lower the risk of suicide but the FDA has not granted approval specifically for this purpose.

Like all medications, lithium treatment produces side effects. The most common unwanted effects vary in intensity with the dose and can be effectively managed. However, for about 30 percent of people who try lithium, it is not tolerable. Lithium side effects may include frequent urination, excessive thirst, weight gain, memory problems, hand tremors, gastrointestinal problems, hair loss, acne and water retention. There are two main side effects of lithium that require monitoring by a simple blood test: 1) hypothyroidism, which can mimic depression, and 2) impaired kidney function, which is less common, but still needs to be monitored.

The FDA has approved valproic acid and carbamazepine for treating mania. These drugs, also approved to treat epilepsy, were found to be as effective as lithium for treating acute mania and may be better than lithium in treating the more complex bipolar subtypes of rapid cycling and dysphoric mania as well as co-morbid substance abuse. As with lithium, valproic acid and carbamazepine may also produce sedation and gastrointestinal distress, but these side effects are generally resolved within the first six months of treatment or with dose adjustment. It is important to monitor liver function on these medications.

Unlike valproate and carbamazepine, Lamotrigine has not shown benefits for treatment of mania but it has approval from the FDA for delaying occurrences of bipolar I disorder. For most people, it produces very few side effects. Lamotrigine does not have FDA approval for treatment of the acute episodes of depression or mania. Studies of lamotrigine for treatment of acute bipolar depression have produced inconsistent results. Lamotrigine can trigger Stevens-Johnson syndrome in some people—eight in 1,000 children and three in 1,000 adults. Stevens-Johnson syndrome is a toxic skin condition that can result in death. Carefully monitor your skin when taking Lamotrigine.

All anticonvulsant medications carry an FDA warning stating that their use may increase the risk of suicidal thoughts or behaviors. Individuals beginning a regimen of anticonvulsant medications for bipolar disorder or other illness should be closely monitored for new or worsening symptoms.

Second-generation antipsychotics (SGAs) are also commonly used to treat the symptoms of bipolar disorder and are often paired with other medications, including mood stabilizers. They are generally used for treating manic or mixed episodes.

Generic Name	Brand Name
Olanzapine	Zyprexa
Aripiprazole	Abilify
Quetiapine	Seroquel
Risperidone	Risperdal
Ziprasidone	Geodon
Paliperidone	Invega
Asenapine	Saphris

These medications are often prescribed to help control acute episodes of mania or depression. At present only quetiapine and the combination of olanzepine and fluoxetine have FDA approval for treatment of bipolar depression. Finding the right preventive/maintenance medicine is not an exact science and is specific to each individual.

Weight gain is a serious clinical concern related to the use of all atypical antipsychotics. Not only can weight gain lead to adult-onset diabetes and cardiovascular diseases, but being overweight is also the leading cause of discontinuing the use of medication.

For weight and other health management strategies, visit NAMI's Hearts & Minds program at [www.nami.org/heartsandminds](http://www.nami.org/heartsandminds). Atypical antipsychotics can also cause drowsiness, dizziness when changing positions, blurred vision, rapid heartbeat and skin rashes. All antipsychotic medication carry some risk for causing abnormal involuntary movement disorders and require careful monitoring.

**Standard antidepressant medications** are sometimes administered to address symptoms of depression in bipolar disorder. However, a recent study funded by the National Institute of Mental Health (NIMH) showed that taking an antidepressant in addition to a mood stabilizer is no more effective than using a mood stabilizer alone for bipolar I.

Generic Name	Brand Name
Fluoxetine	Prozac
Paroxetine	Paxil
Sertraline	Zoloft
Bupropion	Wellbutrin

These are only some of the many antidepressants that may be prescribed for helping control the depressive symptoms of bipolar disorder, but none has FDA approval specifically for treatment of bipolar depression.

As with anticonvulsants, antidepressant medications also carry an FDA warning. The FDA warning says that patients of all ages taking antidepressants should be watched closely, especially during the first few weeks of treatment. Possible side effects to look for are depression that gets worse, suicidal thinking or behavior, or any unusual changes in behavior such as trouble sleeping, agitation or withdrawal from normal social situations.

## Psychotherapy and Other Interventions

While medication is one key element in successful treatment of bipolar disorder, psychotherapy, support groups and knowledge about the illness are also essential components of the treatment process. The most useful psychotherapies generally focus on understanding the illness (psychoeducation), learning how to cope and changing ineffective patterns of thinking. One popular type of psychotherapy used for changing these ineffective patterns is Cognitive Behavioral Therapy, or CBT.

Each of these components serves a critical role in helping people recognize the specific factors that can trigger their episodes. It is also important for individuals living with bipolar disorder, and their families, to play active roles in learning about the illness, and in developing and carrying out a treatment plan of the person's choosing. This is known as family-focused therapy.

Recently, the NIMH funded a clinical trial called the **Systematic Treatment Enhancement Program for Bipolar Disorder (STEPBD)**. It showed that several psychotherapy interventions were more advantageous in treating bipolar depression than a threesession intervention teaching collaborative care strategies and directing individuals to self-manage their plans. The three types of psychotherapy examined

focused on cognitive strategies, family involvement and schedule and stress regulation.

## Electroconvulsive Therapy (ECT)

For severe cases where medication and psychotherapy do not work, ECT may be worth considering. ECT involves the use of short electrical impulses transmitted into the brain. Although ECT is a highly effective treatment for severe depression, manic, or mixed episodes, it is not the first choice in providing treatment. Although ECT still produces some side effects, including some memory loss, modern techniques carried out under general anesthesia are much safer than previously used methods. As with other interventions, the risks and benefits of ECT should be carefully reviewed.

## Complementary and Alternative Medicine

CAM refers to alternative forms of medicine that are not considered part of conventional (Western) medicine. In recent years, CAM has become increasingly popular, but no CAM strategy has won FDA approval. While there is still limited data showing support for many CAM practices and some inconsistency in results, there are studies which support the usefulness of CAM strategies that are considered to have minimal if any adverse effects.

One practice that has shown some promise for the treatment and management of bipolar disorder, as well as other mental illnesses, are omega-3 fatty acids, which are commonly found in fish oil. Some researchers hypothesize that omega-3 may be beneficial in treating mental illness because of its ability to protect or support the replenishing of neurons and connections in areas of the brain that are affected by these illnesses.

## Treatment for Women

Administering medication and treatment for women living with bipolar disorder can sometimes be difficult. For women who begin taking valproic acid before age 20, there may be an increase in levels of testosterone (a male hormone). This can lead to polycystic ovary syndrome (PCOS). PCOS is a syndrome that causes an imbalance in a woman's female sex hormones. This can result in changes in a woman's menstrual cycle, skin changes, small cysts in the ovaries and other problems. Most of these symptoms will improve after stopping treatment with valproic acid.

Pregnant women and nursing mothers living with bipolar disorder should talk to their doctors about the benefits and risks of all available treatments. The mood stabilizing medications used today can hurt a developing fetus or nursing infant. However, stopping medications, suddenly or gradually, greatly increases the risk that bipolar symptoms will recur during pregnancy, which compounds risk for mother and baby alike.

## Treatment for Children

The childhood diagnosis of bipolar disorder has received a great deal of attention and has also generated controversy. Getting a comprehensive evaluation of a [child's health and mental health](#) is important before making any psychiatric diagnosis.

In young children, bipolar is most commonly diagnosed at the age of 12. Children who live with bipolar disorder may also have other co-occurring conditions. These can include attention-deficit hyperactivity disorder, posttraumatic stress disorder, learning disabilities and even substance abuse problems. Each of these co-occurring conditions requires a thoughtful and individualized treatment plan. Appropriate treatment for children should include psychotherapy and psychosocial interventions as the first line of treatment before medications are introduced.

## Treatment and Culture

African Americans and Latinos are more prone to misdiagnosis, likely due to differing cultural or religious beliefs or language barriers. For anyone who has received a diagnosis of bipolar disorder, it is important to look for a health care professional who understands a person's cultural background and shares the same expectations for treatment.

### What is borderline personality disorder (BPD) and how is it diagnosed?

Borderline personality disorder is diagnosed by mental health professionals following a comprehensive psychiatric interview that may include talking with a person's previous clinicians, review of prior records, a medical evaluation, and when appropriate, interviews with friends and family. There is no specific single medical test (e.g., blood test) to diagnose BPD and a diagnosis is not based on a single sign or symptom.

Individuals with BPD have several of the following symptoms, detailed in the *DSM-IV-TR*:

- Marked mood swings with periods of intense depressed mood, irritability and/or anxiety lasting a few hours to a few days.
- Impulsive behaviors that result in adverse outcomes and psychological distress, such as excessive spending, sexual encounters, substance use or shoplifting.
- Recurring suicidal threats or non-suicidal self-injurious behavior, such as cutting.
- Unstable, intense personal relationships, sometimes alternating between "all good," *idealization* and "all bad," *devaluation*.
- Persistent uncertainty about self-image, long-term goals, friendships and values.
- Chronic boredom or feelings of emptiness.

BPD is relatively common—about 1 in 20 or 25 individuals will live with this condition. Historically, BPD has been thought to be significantly more common in females, however recent research suggests that males may be almost as frequently affected by BPD.

### What is the cause of borderline personality disorder?

The exact causes of BPD remain unknown, although the roles of both environmental and biological factors are thought to play a role. While no specific gene has been shown to directly cause BPD, a number of different genes have been identified as playing a role in its development. The brain's functioning, as seen in MRI testing, is often different in people with BPD, suggesting that there is a neurological basis. A number of hormones (including oxytocin) and signaling molecules within the brain (e.g., neurotransmitters including serotonin) have been shown to potentially play a role in BPD.

The connection between BPD and other mental illnesses is well established. People with BPD are at increased risk for anxiety disorders, depressive disorders, eating disorders, and substance abuse. BPD is often misdiagnosed and many people find they wait years to get a proper diagnosis, which leads to a better care plan.

### What are the treatments for borderline personality disorder?

Psychotherapy is the cornerstone of treatment for individuals who live with BPD. Dialectical behavioral therapy (DBT) is the most well researched and effective treatment for BPD. DBT focuses on teaching  *coping skills*  to combat destructive urges, encourages practicing mindfulness (e.g., meditation, regulated breathing and relaxation), involves individual and group work, and is quite successful in helping people with BPD to control their symptoms.

While cognitive behavioral therapy (CBT), psychodynamic psychotherapy and certain other psychosocial treatments are useful for some people with BPD, the majority of people with this illness will find dialectical behavioral therapy (DBT) to be the most useful form of psychotherapy.

Medications can be an important component to the care plan, yet it is important to know that there is no single medication treatment that can “cure” borderline personality disorder. Furthermore, no medication is specifically approved by the FDA for the treatment of BPD. Medications are however useful in treating specific symptoms in BPD. Off label use of a number of medications may help manage key symptoms, such as valproate (Depakote), that may be useful in decreasing impulsivity, omega-3 fatty acids (fish oil) that may be helpful in decreasing mood fluctuations, and naltrexone (Revia), which has helped some people decrease their urges for self-injury.

While not usually indicated for the chronic symptoms of BPD, short-term inpatient hospitalization may be necessary during times of extreme stress, impulsive behavior, or substance abuse. In other cases however, inpatient psychiatric hospitalization may be paradoxically detrimental for some people with BPD.

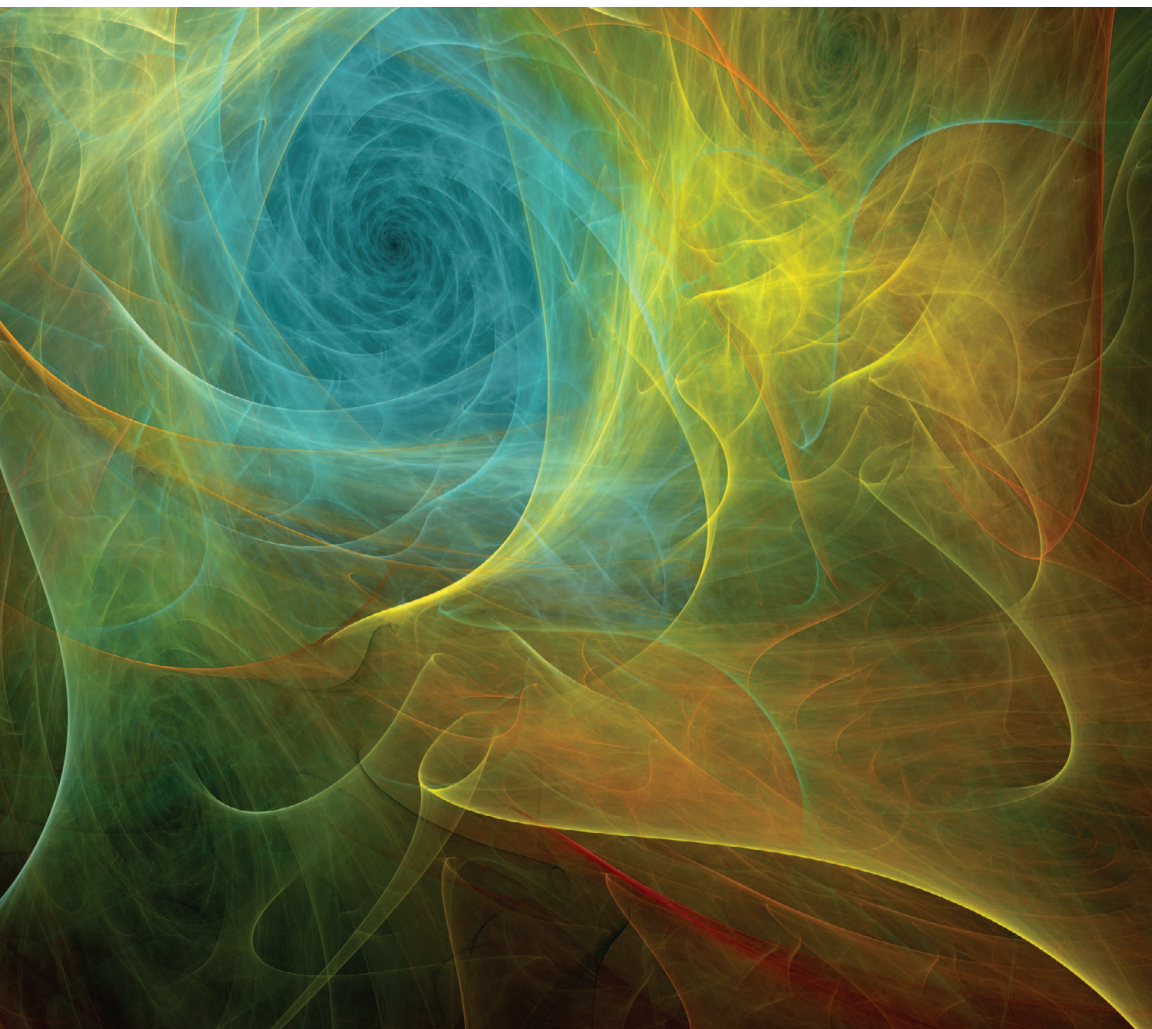
The support of family and friends is of critical importance in the treatment of BPD as many people with this illness may isolate themselves from these relationships in times of greatest need. With the support of family and friends, involvement in ongoing treatment, and efforts to live a healthy lifestyle—regular exercise, a balanced diet and good sleeping habits—most people with BPD can expect to experience significant relief from their symptoms.

### **Will people with borderline personality disorder get better?**

Recent research based on long-term studies of people with BPD suggests that the overwhelming majority of people will experience significant and long-lasting periods of symptom remission in the lifetime. Many people will not experience a complete recovery, but nonetheless will be able to live meaningful and productive lives. Many people will require some form of treatment—whether medications or psychotherapy—to help control their symptoms even decades after their initial diagnosis with borderline personality disorder.

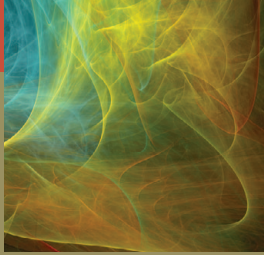
*Reviewed Ken Duckworth, M.D., and Jacob L. Freedman, M.D., November 2012*

# Borderline Personality Disorder



National Institute of Mental Health

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES • National Institutes of Health



## Contents

What is borderline personality disorder? _____	1
What are the symptoms of borderline personality disorder? _____	2
Suicide and Self-harm _____	3
When does borderline personality disorder start? _____	4
What illnesses often co-exist with borderline personality disorder? _____	4
What are the risk factors for borderline personality disorder? _____	5
How is borderline personality disorder diagnosed? _____	5
What studies are being done to improve the diagnosis of borderline personality disorder? _____	6
How is borderline personality disorder treated? _____	7
Psychotherapy _____	7
Medications _____	10
Other Treatments _____	10
How can I help a friend or relative who has borderline personality disorder? _____	11
How can I help myself if I have borderline personality disorder? _____	12
Where can I go for help? _____	13
What if I or someone I know is in crisis? _____	13
Citations _____	14
For more information on borderline personality disorder _____	17



## What is borderline personality disorder?

Borderline personality disorder is a serious mental illness marked by unstable moods, behavior, and relationships. In 1980, the *Diagnostic and Statistical Manual for Mental Disorders, Third Edition* (DSM-III) listed borderline personality disorder as a diagnosable illness for the first time. Most psychiatrists and other mental health professionals use the DSM to diagnose mental illnesses.

Because some people with severe borderline personality disorder have brief psychotic episodes, experts originally thought of this illness as atypical, or borderline, versions of other mental disorders.<sup>1</sup> While mental health experts now generally agree that the name “borderline personality disorder” is misleading, a more accurate term does not exist yet.



Most people who have borderline personality disorder suffer from:

- Problems with regulating emotions and thoughts
- Impulsive and reckless behavior
- Unstable relationships with other people.

People with this disorder also have high rates of co-occurring disorders, such as depression, anxiety disorders, substance abuse, and eating disorders, along with self-harm, suicidal behaviors, and completed suicides.

According to data from a subsample of participants in a national survey on mental disorders, about 1.6 percent of adults in the United States have borderline personality disorder in a given year.<sup>2</sup>

Borderline personality disorder is often viewed as difficult to treat. However, recent research shows that borderline personality disorder can be treated effectively, and that many people with this illness improve over time.<sup>1, 3, 4</sup>

## What are the symptoms of borderline personality disorder?

According to the DSM, Fourth Edition, Text Revision (DSM-IV-TR), to be diagnosed with borderline personality disorder, a person must show an enduring pattern of behavior that includes at least five of the following symptoms:



- Extreme reactions—including panic, depression, rage, or frantic actions—to abandonment, whether real or perceived
- A pattern of intense and stormy relationships with family, friends, and loved ones, often veering from extreme closeness and love (idealization) to extreme dislike or anger (devaluation)
- Distorted and unstable self-image or sense of self, which can result in sudden changes in feelings, opinions, values, or plans and goals for the future (such as school or career choices)
- Impulsive and often dangerous behaviors, such as spending sprees, unsafe sex, substance abuse, reckless driving, and binge eating
- Recurring suicidal behaviors or threats or self-harming behavior, such as cutting
- Intense and highly changeable moods, with each episode lasting from a few hours to a few days
- Chronic feelings of emptiness and/or boredom
- Inappropriate, intense anger or problems controlling anger
- Having stress-related paranoid thoughts or severe dissociative symptoms, such as feeling cut off from oneself, observing oneself from outside the body, or losing touch with reality.

Seemingly mundane events may trigger symptoms. For example, people with borderline personality disorder may feel angry and distressed over minor separations—such as vacations, business trips, or sudden changes of plans—from people to whom they feel close. Studies show that people with this disorder may see anger in an emotionally neutral face<sup>5</sup> and have a stronger reaction to words with negative meanings than people who do not have the disorder.<sup>6</sup>

### **Suicide and Self-harm**

Self-injurious behavior includes suicide and suicide attempts, as well as self-harming behaviors, described below. As many as 80 percent of people with borderline personality disorder have suicidal behaviors,<sup>7</sup> and about 4 to 9 percent commit suicide.<sup>4,7</sup>

Suicide is one of the most tragic outcomes of any mental illness. Some treatments can help reduce suicidal behaviors in people with borderline personality disorder. For example, one study showed that dialectical behavior therapy (DBT) reduced suicide attempts in women by half compared with other types of psychotherapy, or talk therapy. DBT also reduced use of emergency room and inpatient services and retained more participants in therapy, compared to other approaches to treatment.<sup>7</sup> For more information about DBT, see the section, “How is borderline personality disorder treated?”

Unlike suicide attempts, self-harming behaviors do not stem from a desire to die. However, some self-harming behaviors may be life threatening. Self-harming behaviors linked with borderline personality disorder include cutting, burning, hitting, head banging, hair pulling, and other harmful acts. People with borderline personality disorder may self-harm to help regulate their emotions, to punish themselves, or to express their pain.<sup>8</sup> They do not always see these behaviors as harmful.

## When does borderline personality disorder start?

Borderline personality disorder usually begins during adolescence or early adulthood.<sup>1,9</sup> Some studies suggest that early symptoms of the illness may occur during childhood.<sup>10,11</sup>

Some people with borderline personality disorder experience severe symptoms and require intensive, often inpatient, care. Others may use some outpatient treatments but never need hospitalization or emergency care. Some people who develop this disorder may improve without any treatment.<sup>12</sup>

---

Studies suggest early symptoms may occur in childhood

---

## What illnesses often co-exist with borderline personality disorder?

Borderline personality disorder often occurs with other illnesses. These co-occurring disorders can make it harder to diagnose and treat borderline personality disorder, especially if symptoms of other illnesses overlap with the symptoms of borderline personality disorder.

Women with borderline personality disorder are more likely to have co-occurring disorders such as major depression, anxiety disorders, or eating disorders. In men, borderline personality disorder is more likely to co-occur with disorders such as substance abuse or antisocial personality disorder.<sup>13</sup>

According to the NIMH-funded National Comorbidity Survey Replication—the largest national study to date of mental disorders in U.S. adults—about 85 percent of people with borderline personality disorder also meet the diagnostic criteria for another mental illness.<sup>2</sup>

Other illnesses that often occur with BPD include diabetes, high blood pressure, chronic back pain, arthritis, and fibromyalgia.<sup>14,15</sup> These conditions are associated with obesity, which is a common side effect of the medications prescribed to treat borderline personality disorder and other mental disorders. For more information, see the section, “How is borderline personality disorder treated?”

## What are the risk factors for borderline personality disorder?

Research on the possible causes and risk factors for borderline personality disorder is still at a very early stage. However, scientists generally agree that genetic and environmental factors are likely to be involved.

Studies on twins with borderline personality disorder suggest that the illness is strongly inherited.<sup>16, 17</sup> Another study shows that a person can inherit his or her temperament and specific personality traits, particularly impulsiveness and aggression.<sup>18</sup> Scientists are studying genes that help regulate emotions and impulse control for possible links to the disorder.<sup>19</sup>

Social or cultural factors may increase the risk for borderline personality disorder. For example, being part of a community or culture in which unstable family relationships are common may increase a person's risk for the disorder.<sup>1</sup> Impulsiveness, poor judgment in lifestyle choices, and other consequences of BPD may lead individuals to risky situations. Adults with borderline personality disorder are considerably more likely to be the victim of violence, including rape and other crimes.

## How is borderline personality disorder diagnosed?

Unfortunately, borderline personality disorder is often underdiagnosed or misdiagnosed.<sup>20, 21</sup>

A mental health professional experienced in diagnosing and treating mental disorders—such as a psychiatrist, psychologist, clinical social worker, or psychiatric nurse—can detect borderline personality disorder based on a thorough interview and a discussion about symptoms. A careful and thorough medical exam can help rule out other possible causes of symptoms.



The mental health professional may ask about symptoms and personal and family medical histories, including any history of mental illnesses. This information can help the mental health professional decide on the best treatment. In some cases, co-occurring mental illnesses may have symptoms that overlap with borderline personality disorder, making it difficult to distinguish borderline personality disorder from other mental illnesses. For example, a person may describe feelings of depression but may not bring other symptoms to the mental health professional's attention.

No single test can diagnose borderline personality disorder. Scientists funded by NIMH are looking for ways to improve diagnosis of this disorder. One study found that adults with borderline personality disorder showed excessive emotional reactions when looking at words with unpleasant meanings, compared with healthy people. People with more severe borderline personality disorder showed a more intense emotional response than people who had less severe borderline personality disorder.<sup>6</sup>

### **What studies are being done to improve the diagnosis of borderline personality disorder?**

Recent neuroimaging studies show differences in brain structure and function between people with borderline personality disorder and people who do not have this illness.<sup>22, 23</sup> Some research suggests that brain areas involved in emotional responses become overactive in people with borderline personality disorder when they perform tasks that they perceive as negative.<sup>24</sup> People with the disorder also show less activity in areas of the brain that help control emotions and aggressive impulses and allow people to understand the context of a situation. These findings may help explain the unstable and sometimes explosive moods characteristic of borderline personality disorder.<sup>19, 25</sup>

Another study showed that, when looking at emotionally negative pictures, people with borderline personality disorder used different areas of the brain than people without the disorder. Those with the illness tended to use brain areas related to reflexive actions and alertness, which may explain the tendency to act impulsively on emotional cues.<sup>26</sup>

These findings could inform efforts to develop more specific tests to diagnose borderline personality disorder.<sup>6</sup>

## How is borderline personality disorder treated?

Borderline personality disorder can be treated with psychotherapy, or “talk” therapy. In some cases, a mental health professional may also recommend medications to treat specific symptoms. When a person is under more than one professional’s care, it is essential for the professionals to coordinate with one another on the treatment plan.



The treatments described below are just some of the options that may be available to a person with borderline personality disorder. However, the research on treatments is still in very early stages. More studies are needed to determine the effectiveness of these treatments, who may benefit the most, and how best to deliver treatments.

### Psychotherapy

Psychotherapy is usually the first treatment for people with borderline personality disorder. Current research suggests psychotherapy can relieve some symptoms, but further studies are needed to better understand how well psychotherapy works.<sup>27</sup>

It is important that people in therapy get along with and trust their therapist. The very nature of borderline personality disorder can make it difficult for people with this disorder to maintain this type of bond with their therapist.

Types of psychotherapy used to treat borderline personality disorder include the following:<sup>28</sup>

- 1. Cognitive behavioral therapy (CBT).** CBT can help people with borderline personality disorder identify and change core beliefs and/or behaviors that underlie inaccurate perceptions of themselves and others and problems interacting with others. CBT may help reduce a range of mood and anxiety symptoms and reduce the number of suicidal or self-harming behaviors.<sup>29</sup>

- 2. Dialectical behavior therapy (DBT).** This type of therapy focuses on the concept of mindfulness, or being aware of and attentive to the current situation.<sup>1</sup> DBT teaches skills to control intense emotions, reduces self-destructive behaviors, and improves relationships. This therapy differs from CBT in that it seeks a balance between changing and accepting beliefs and behaviors.<sup>30</sup>
- 3. Schema-focused therapy.** This type of therapy combines elements of CBT with other forms of psychotherapy that focus on reframing schemas, or the ways people view themselves. This approach is based on the idea that borderline personality disorder stems from a dysfunctional self-image—possibly brought on by negative childhood experiences—that affects how people react to their environment, interact with others, and cope with problems or stress.<sup>31</sup>

Therapy can be provided one-on-one between the therapist and the patient or in a group setting. Therapist-led group sessions may help teach people with borderline personality disorder how to interact with others and how to express themselves effectively.

One type of group therapy, Systems Training for Emotional Predictability and Problem Solving (STEPPS), is designed as a relatively brief treatment consisting of 20 two-hour sessions led by an experienced social worker. Scientists funded by NIMH reported that STEPPS, when used with other types of treatment (medications or individual psychotherapy), can help reduce symptoms and problem behaviors of borderline personality disorder, relieve symptoms of depression, and improve quality of life.<sup>32</sup> The effectiveness of this type of therapy has not been extensively studied.



Families of people with borderline personality disorder may also benefit from therapy. The challenges of dealing with an ill relative on a daily basis can be very stressful, and family members may unknowingly act in ways that worsen their relative's symptoms.



Some therapies, such as DBT-family skills training (DBT-FST), include family members in treatment sessions. These types of programs help families develop skills to better understand and support a relative with borderline personality disorder. Other therapies, such as Family Connections, focus on the needs of family members. More research is needed to determine the effectiveness of family therapy in borderline personality disorder. Studies with other mental disorders suggest that including family members can help in a person's treatment.<sup>33</sup>

Other types of therapy not listed in this booklet may be helpful for some people with borderline personality disorder. Therapists often adapt psychotherapy to better meet a person's needs. Therapists may switch from one type of therapy to another, mix techniques from different therapies, or use a combination therapy. For more information see the NIMH website section on psychotherapy at <http://www.nimh.nih.gov/health/topics/psychotherapies/index.shtml>.

Some symptoms of borderline personality disorder may come and go, but the core symptoms of highly changeable moods, intense anger, and impulsiveness tend to be more persistent.<sup>34</sup> People whose symptoms improve may continue to face issues related to co-occurring disorders, such as depression or post-traumatic stress disorder.<sup>4</sup> However, encouraging research suggests that relapse, or the recurrence of full-blown symptoms after remission, is rare. In one study, 6 percent of people with borderline personality disorder had a relapse after remission.<sup>4</sup>

## Medications

No medications have been approved by the U.S. Food and Drug Administration to treat borderline personality disorder. Only a few studies show that medications are necessary or effective for people with this illness.<sup>35</sup> However, many people with borderline personality disorder are treated with medications in addition to psychotherapy. While medications do not cure BPD, some medications may be helpful in managing specific symptoms. For some people, medications can help reduce symptoms such as anxiety, depression, or aggression. Often, people are treated with several medications at the same time,<sup>12</sup> but there is little evidence that this practice is necessary or effective.

Medications can cause different side effects in different people. People who have borderline personality disorder should talk with their prescribing doctor about what to expect from a particular medication.

## Other Treatments

**Omega-3 fatty acids.** One study done on 30 women with borderline personality disorder showed that omega-3 fatty acids may help reduce symptoms of aggression and depression.<sup>36</sup> The treatment seemed to be as well tolerated as commonly prescribed mood stabilizers and had few side effects. Fewer women who took omega-3 fatty acids dropped out of the study, compared to women who took a placebo (sugar pill).



With proper treatment, many people experience fewer or less severe symptoms. However, many factors affect the amount of time it takes for symptoms to improve, so it is important for people with borderline personality disorder to be patient and to receive appropriate support during treatment.

## How can I help a friend or relative who has borderline personality disorder?

If you know someone who has borderline personality disorder, it affects you too. The first and most important thing you can do is help your friend or relative get the right diagnosis and treatment. You may need to make an appointment and go with your friend or relative to see the doctor. Encourage him or her to stay in treatment or to seek different treatment if symptoms do not appear to improve with the current treatment.



To help a friend or relative you can:

- Offer emotional support, understanding, patience, and encouragement—change can be difficult and frightening to people with borderline personality disorder, but it is possible for them to get better over time
- Learn about mental disorders, including borderline personality disorder, so you can understand what your friend or relative is experiencing
- With permission from your friend or relative, talk with his or her therapist to learn about therapies that may involve family members, such as DBT-FST.

Never ignore comments about someone's intent or plan to harm himself or herself or someone else. Report such comments to the person's therapist or doctor. In urgent or potentially life-threatening situations, you may need to call the police.

## How can I help myself if I have borderline personality disorder?

Taking that first step to help yourself may be hard. It is important to realize that, although it may take some time, you can get better with treatment.

To help yourself:

- Talk to your doctor about treatment options and stick with treatment
- Try to maintain a stable schedule of meals and sleep times
- Engage in mild activity or exercise to help reduce stress
- Set realistic goals for yourself
- Break up large tasks into small ones, set some priorities, and do what you can, as you can
- Try to spend time with other people and confide in a trusted friend or family member
- Tell others about events or situations that may trigger symptoms
- Expect your symptoms to improve gradually, not immediately
- Identify and seek out comforting situations, places, and people
- Continue to educate yourself about this disorder.



## Where can I go for help?

If you are unsure where to go for help, ask your family doctor. Other people who can help are:

- Mental health professionals, such as psychiatrists, psychologists, social workers, or mental health counselors
- Health maintenance organizations
- Community mental health centers
- Hospital psychiatry departments and outpatient clinics
- Mental health programs at universities or medical schools
- State hospital outpatient clinics
- Family services, social agencies, or clergy
- Peer support groups
- Private clinics and facilities
- Employee assistance programs
- Local medical and psychiatric societies.

You can also check the phone book under “mental health,” “health,” “social services,” “hotlines,” or “physicians” for phone numbers and addresses. An emergency room doctor can provide temporary help and can tell you where and how to get further help.

## What if I or someone I know is in crisis?

If you are thinking about harming yourself, or know someone who is:

- Call your doctor.
- Call 911 or go to a hospital emergency room to get immediate help or ask a friend or family member to help you do these things.
- Call the toll-free, 24-hour hotline of the National Suicide Prevention Lifeline at 1-800-273-TALK (1-800-273-8255) or TTY: 1-800-799-4TTY (4889) to talk to a trained counselor.
- If you are in a crisis, make sure you are not left alone.
- If someone else is in a crisis, make sure he or she is not left alone.

## Citations

1. Gunderson JG. *A BPD Brief: An Introduction to Borderline Personality Disorder: Diagnosis, Origins, Course, and Treatment*. (ed)<sup>^</sup>(eds). <http://www.borderlinepersonalitydisorder.com/documents/A%20BPD%20BRIEF%20revised%202006%20WORD%20version%20--%20Jun%202006.pdf>. Accessed on July 30, 2007.
2. Lenzenweger MF, Lane MC, Loranger AW, Kessler RC. DSM-IV personality disorders in the National Comorbidity Survey Replication. *Biol Psychiatry*. 2007 Sep 15;62(6):553–64.
3. Paris J, Zweig-Frank H. A 27-year follow-up of patients with borderline personality disorder. *Compr Psychiatry*. 2001 Nov–Dec;42(6):482–7.
4. Zanarini MC, Frankenburg FR, Hennen J, Reich DB, Silk KR. The McLean Study of Adult Development (MSAD): overview and implications of the first six years of prospective follow-up. *J Personal Disord*. 2005 Oct;19(5):505–23.
5. Meyer B, Pilkonis PA, Beevers CG. What's in a (neutral) face? Personality disorders, attachment styles, and the appraisal of ambiguous social cues. *J Pers Disord*. 2004 Aug;18(4):320–36.
6. Hazlett EA, Speiser LJ, Goodman M, Roy M, Carrizal M, Wynn JK, Williams WC, Romero M, Minzenberg MJ, Siever LJ, New AS. Exaggerated affect-modulated startle during unpleasant stimuli in borderline personality disorder. *Biol Psychiatry*. 2007 Aug 1;62(3):250–5.
7. Linehan MM, Comtois KA, Murray AM, Brown MZ, Gallop RJ, Heard HL, Korslund KE, Tutek DA, Reynolds SK, Lindenboim N. Two-year randomized controlled trial and follow-up of dialectical behavior therapy vs therapy by experts for suicidal behaviors and borderline personality disorder. *Arch Gen Psychiatry*. 2006 Jul;63(7):757–66.
8. Kleindienst N, Bohus M, Ludascher P, Limberger MF, Kuenkele K, Ebner-Priemer UW, Chapman AL, Reicherzer M, Stieglitz RD, Schmahl C. Motives for nonsuicidal self-injury among women with borderline personality disorder. *J Nerv Ment Dis*. 2008 Mar;196(3):230–6.
9. Chanen AM, Jackson HJ, McCutcheon LK, Jovev M, Dudgeon P, Yuen HP, Germano D, Nistico H, McDougall E, Weinstein C, Clarkson V, McGorry PD. Early intervention for adolescents with borderline personality disorder using cognitive analytic therapy: randomised controlled trial. *Br J Psychiatry*. 2008 Dec;193(6):477–84.
10. Zerkowicz P, Paris J, Guzder J, Feldman R. Diatheses and stressors in borderline pathology of childhood: the role of neuropsychological risk and trauma. *J Am Acad Child Adolesc Psychiatry*. 2001 Jan;40(1):100–5.
11. Zanarini MC, Frankenburg FR, Khera GS, Bleichmar J. Treatment histories of borderline inpatients. *Compr Psychiatry*. 2001 Mar–Apr;42(2):144–50.
12. Zanarini MC. *Ten-Year Course of Borderline Personality Disorder*. (ed)<sup>^</sup>(eds). *Borderline Personality Disorder: Course, Outcomes, Interventions*. [http://web4.streamhoster.com/video4nea/michigan/Q2%20Ten%20Year%20Course%20of%20Borderline%20Personality%20Disorder\\_files/intro.htm](http://web4.streamhoster.com/video4nea/michigan/Q2%20Ten%20Year%20Course%20of%20Borderline%20Personality%20Disorder_files/intro.htm). Accessed on March 28, 2008.

13. Tadic A, Wagner S, Hoch J, Baskaya O, von Cube R, Skaletz C, Lieb K, Dahmen N. Gender differences in axis I and axis II comorbidity in patients with borderline personality disorder. *Psychopathology*. 2009;42(4):257–63.
14. Frankenburg FR, Zanarini MC. Obesity and obesity-related illnesses in borderline patients. *J Personal Disord*. 2006 Feb;20(1):71–80.
15. Sansone RA, Hawkins R. Fibromyalgia, borderline personality, and opioid prescription. *Gen Hosp Psychiatry*. 2004 Sep–Oct;26(5):415–6.
16. Torgersen S, Lygren S, Oien PA, Skre I, Onstad S, Edvardsen J, Tambs K, Kringlen E. A twin study of personality disorders. *Compr Psychiatry*. 2000 Nov–Dec;41(6):416–25.
17. Coolidge FL, Thede LL, Jang KL. Heritability of personality disorders in childhood: a preliminary investigation. *J Pers Disord*. 2001 Feb;15(1):33–40.
18. Lynam DR, Widiger TA. Using the five-factor model to represent the DSM-IV personality disorders: an expert consensus approach. *J Abnorm Psychol*. 2001 Aug;110(3):401–12.
19. Lis E, Greenfield B, Henry M, Guile JM, Dougherty G. Neuroimaging and genetics of borderline personality disorder: a review. *J Psychiatry Neurosci*. 2007 May;32(3):162–73.
20. Ruggero CJ, Zimmerman M, Chelminski I, Young D. Borderline personality disorder and the misdiagnosis of bipolar disorder. *J Psychiatr Res*. 2010 Apr;44(6):405–8.
21. Paris J. The diagnosis of borderline personality disorder: problematic but better than the alternatives. *Ann Clin Psychiatry*. 2005 Jan–Mar;17(1):41–6.
22. *Emotion-Regulating Circuit Weakened in Borderline Personality Disorder*. (ed)^(eds). <http://www.nimh.nih.gov/science-news/2008/emotion-regulating-circuit-weakened-in-borderline-personality-disorder.shtml>. Accessed on Oct 10, 2008.
23. King-Casas B, Sharp C, Lomax-Bream L, Lohrenz T, Fonagy P, Montague PR. The rupture and repair of cooperation in borderline personality disorder. *Science*. 2008 Aug 8;321(5890):806–10.
24. Kernberg OF, Michels R. Borderline personality disorder. *Am J Psychiatry*. 2009 May;166(5):505–8.
25. Silbersweig D, Clarkin JF, Goldstein M, Kernberg OF, Tuescher O, Levy KN, Brendel G, Pan H, Beutel M, Pavony MT, Epstein J, Lenzenweger MF, Thomas KM, Posner MI, Stern E. Failure of frontolimbic inhibitory function in the context of negative emotion in borderline personality disorder. *Am J Psychiatry*. 2007 Dec;164(12):1832–41.
26. Koenigsberg HW, Siever LJ, Lee H, Pizzarello S, New AS, Goodman M, Cheng H, Flory J, Prohovnik I. Neural correlates of emotion processing in borderline personality disorder. *Psychiatry Res*. 2009 Jun 30;172(3):192–9.
27. Binks CA, Fenton M, McCarthy L, Lee T, Adams CE, Duggan C. Psychological therapies for people with borderline personality disorder. *Cochrane Database Syst Rev*. 2006;(1):CD005652.

28. Stone MH. Management of borderline personality disorder: a review of psychotherapeutic approaches. *World Psychiatry*. 2006 Feb;5(1):15–20.
29. Davidson K, Norrie J, Tyrer P, Gumley A, Tata P, Murray H, Palmer S. The effectiveness of cognitive behavior therapy for borderline personality disorder: results from the borderline personality disorder study of cognitive therapy (BOSCOT) trial. *J Personal Disord*. 2006 Oct;20(5):450–65.
30. McMain S, Pos AE. Advances in psychotherapy of personality disorders: a research update. *Curr Psychiatry Rep*. 2007 Feb;9(1):46–52.
31. Kellogg SH, Young JE. Schema therapy for borderline personality disorder. *J Clin Psychol*. 2006 Apr;62(4):445–58.
32. Blum N, St John D, Pfohl B, Stuart S, McCormick B, Allen J, Arndt S, Black DW. Systems Training for Emotional Predictability and Problem Solving (STEPPS) for outpatients with borderline personality disorder: a randomized controlled trial and 1-year follow-up. *Am J Psychiatry*. 2008 Apr;165(4):468–78.
33. Hoffman PD, Fruzzetti AE. Advances in interventions for families with a relative with a personality disorder diagnosis. *Curr Psychiatry Rep*. 2007 Feb;9(1):68–73.
34. McGlashan TH, Grilo CM, Sanislow CA, Ralevski E, Morey LC, Gunderson JG, Skodol AE, Shea MT, Zanarini MC, Bender D, Stout RL, Yen S, Pagano M. Two-year prevalence and stability of individual DSM-IV criteria for schizotypal, borderline, avoidant, and obsessive-compulsive personality disorders: toward a hybrid model of axis II disorders. *Am J Psychiatry*. 2005 May;162(5):883–9.
35. Binks CA, Fenton M, McCarthy L, Lee T, Adams CE, Duggan C. Pharmacological interventions for people with borderline personality disorder. *Cochrane Database Syst Rev*. 2006;(1):CD005653.
36. Zanarini MC, Frankenburg FR. omega-3 Fatty acid treatment of women with borderline personality disorder: a double-blind, placebo-controlled pilot study. *Am J Psychiatry*. 2003 Jan;160(1):167–9.



## For More Information on Borderline Personality Disorder

Visit the National Library of Medicine's

MedlinePlus

<http://medlineplus.gov>

En Español

<http://medlineplus.gov/spanish>

For information on clinical trials

<http://www.nlm.nih.gov/health/trials/index.shtml>

National Library of Medicine clinical trials database

<http://www.clinicaltrials.gov>

Information from NIMH is available in multiple formats. You can browse online, download documents in PDF, and order materials through the mail. Check the NIMH website at <http://www.nimh.nih.gov> for the latest information on this topic and to order publications. If you do not have Internet access, please contact the NIMH Information Resource Center at the numbers listed below.

### **National Institute of Mental Health**

Science Writing, Press & Dissemination Branch

6001 Executive Boulevard

Room 8184, MSC 9663

Bethesda, MD 20892-9663

Phone: 301-443-4513 or

1-866-615-NIMH (6464) toll-free

TTY: 301-443-8431 or

1-866-415-8051 toll-free

FAX: 301-443-4279

E-mail: [nimhinfo@nih.gov](mailto:nimhinfo@nih.gov)

Website: <http://www.nimh.nih.gov>

## Reprints

This publication is in the public domain and may be reproduced or copied without permission from NIMH. We encourage you to reproduce it and use it in your efforts to improve public health. Citation of the National Institute of Mental Health as a source is appreciated. However, using government materials inappropriately can raise legal or ethical concerns, so we ask you to use these guidelines:

- NIMH does not endorse or recommend any commercial products, processes, or services, and our publications may not be used for advertising or endorsement purposes.
- NIMH does not provide specific medical advice or treatment recommendations or referrals; our materials may not be used in a manner that has the appearance of such information.
- NIMH requests that non-Federal organizations not alter our publications in ways that will jeopardize the integrity and “brand” when using the publication.
- Addition of non-Federal Government logos and website links may not have the appearance of NIMH endorsement of any specific commercial products or services or medical treatments or services.
- Images used in publications are of models and are used for illustrative purposes only. Use of some images is restricted.

If you have questions regarding these guidelines and use of NIMH publications, please contact the NIMH Information Resource Center at 1-866-615-6464 or by e-mail at [nimhinfo@nih.gov](mailto:nimhinfo@nih.gov).

**NIMH**  
National Institute  
of Mental Health



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
National Institutes of Health  
National Institutes of Mental Health  
NIH Publication No. 11-4928

# Introduction

[Watch the Brain Basics video](#)



Welcome. Brain Basics provides information on how the brain works, how mental illnesses are disorders of the brain, and ongoing research that helps us better understand and treat disorders.

Mental disorders are common. You may have a friend, colleague, or relative with a mental disorder, or perhaps you have experienced one yourself at some point. Such disorders include [depression](#), [anxiety disorders](#), [bipolar disorder](#), [attention deficit hyperactivity disorder \(ADHD\)](#) and many others.

Some people who develop a mental illness may recover completely; others may have repeated episodes of illness with relatively stable periods in between. Still others live with symptoms of mental illness every day. They can be moderate, or serious and cause severe disability.

Through research, we know that mental disorders are brain disorders. Evidence shows that they can be related to changes in the anatomy, physiology, and chemistry of the nervous system.

When the brain cannot effectively coordinate the billions of cells in the body, the results can affect many aspects of life.

Scientists are continually learning more about how the brain grows and works in healthy people, and how normal brain development and function can go awry, leading to mental illnesses.

Brain Basics will introduce you to some of this science, such as:

- How the brain develops
- How genes and the environment affect the brain
- The basic structure of the brain
- How different parts of the brain communicate and work with each other
- How changes in the brain can lead to mental disorders, such as depression.

## The Growing Brain

### Inside the Brain: Neurons & Neural Circuits

Neurons are the basic working unit of the brain and nervous system. These cells are highly specialized for the function of conducting messages.

A neuron has three basic parts:

**Cell body** which includes the nucleus, cytoplasm, and cell organelles. The nucleus contains DNA and information that the cell needs for growth, metabolism, and repair. Cytoplasm is the substance that fills a cell, including all the chemicals and parts needed for the cell to work properly including small structures called cell organelles.

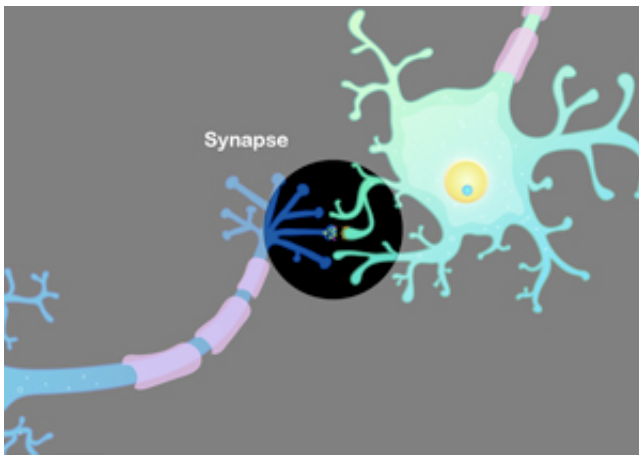
**Dendrites** branch off from the cell body and act as a neuron's point of contact for receiving chemical and electrical signals called impulses from neighboring neurons.

**Axon** which sends impulses and extends from cell bodies to meet and deliver impulses to another nerve cell. Axons can range in length from a fraction of an inch to several feet.

Each neuron is enclosed by a cell membrane, which separates the inside contents of the cell from its surrounding environment and controls what enters and leaves the cell, and responds to signals from the environment; this all helps the cell maintain its balance with the environment.

Synapses are tiny gaps between neurons, where messages move from one neuron to another as chemical or electrical signals.

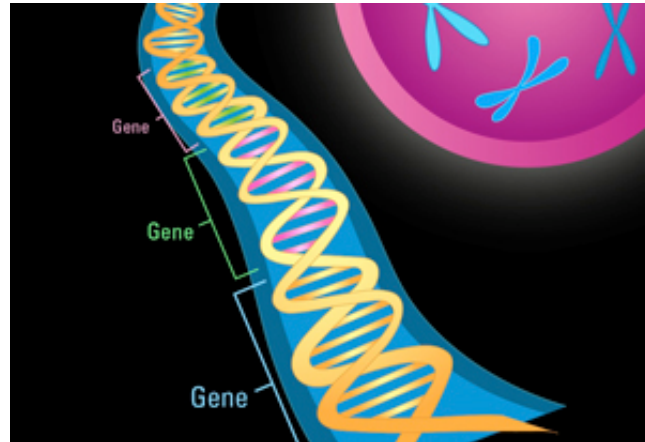
The brain begins as a small group of cells in the outer layer of a developing embryo. As the cells grow and differentiate, neurons travel from a central "birthplace" to their final destination. Chemical signals from other cells guide neurons in forming various brain structures. Neighboring neurons make connections with each other and with distant nerve cells (via axons) to form brain circuits. These circuits control specific body functions such as sleep and speech.



develops and matures helps scientists understand what goes wrong in mental illnesses.

Scientists have already begun to chart how the brain develops over time in healthy people and are working to compare that with brain development in people with mental disorders. Genes and environmental cues both help to direct this growth.

### The Changing Brain—Effects of Genes and the Environment



There are many different types of cells in the body that

cells *differentiate* as the embryo develops, becoming more specialized for specific functions. Skin cells protect, muscle cells contract, and neurons, the most highly specialized cells of all, conduct messages.

Every cell in our bodies contains a complete set of DNA. DNA, the "recipe of life," contains all the information inherited from our parents that helps to define who we are, such as our looks and certain abilities, such as a good singing voice. A gene is a segment of DNA that contains codes to make proteins and other important body chemicals. DNA also includes information to control when genes are expressed and when, in all the cells of the body.

As we grow, we create new cells, each with a copy of our original set of DNA. Sometimes this copying process is imperfect, leading to a gene mutation that causes the gene to code for a slightly different protein. Some mutations are harmless, some can be helpful, and others give rise to disabilities or diseases.

Genes aren't the only determinants of how our bodies function. Throughout our lives, our genes can be affected by the environment. In medicine, the term environment includes not only our physical surroundings but also factors that can affect our bodies, such as sleep, diet, or stress. These factors may act alone or together in complex ways, to change the way a gene is expressed or the way messages are conducted in the body.

Epigenetics is the study of how environmental factors can affect how a given gene operates. But unlike gene mutations, epigenetic changes do not change the code for a gene. Rather, they affect when a gene turns on or off to produce a specific protein. Scientists believe epigenetics play a major role in mental disorders and the effects of medications. Some, but not all mutations and epigenetic changes can be passed on to future generations.

Further understanding of genes and epigenetics may one day lead to genetic testing for people at risk for mental disorders. This could greatly help in early detection, more tailored treatments, and possibly prevention of such illnesses.

## The Working Brain

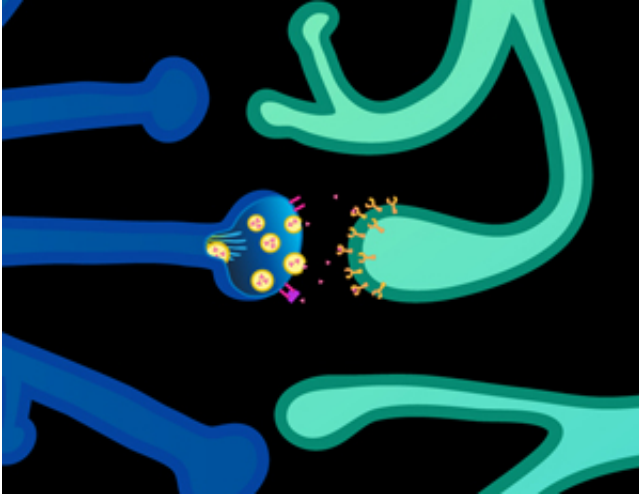
### Neurotransmitters

Everything we do relies on neurons communicating with one another. Electrical impulses and chemical signals carrying messages across different parts of the brain and between the brain and the rest of the nervous system. When a neuron is activated a small difference in electrical charge occurs. This unbalanced charge is called an action potential and is caused by the concentration of ions (atoms or molecules with unbalanced charges) across the cell membrane. The action potential travels very quickly along the axon, like when a line of dominoes falls.

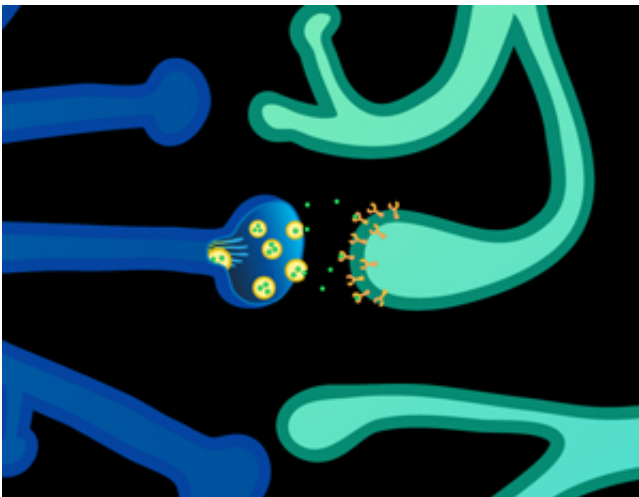
When the action potential reaches the end of an axon, most neurons release a chemical message (a neurotransmitter) which crosses the synapse and binds to receptors on the receiving neuron's dendrites and starts the process over again. At the end of a line, a neurotransmitter may stimulate a different kind of cell (like a gland cell) or may trigger a new chain of messages.

process does not work correctly. Communication between neurons can also be electrical, such as in areas of the brain that control movement. When electrical signals are abnormal, they can cause tremors or symptoms found in Parkinson's disease.

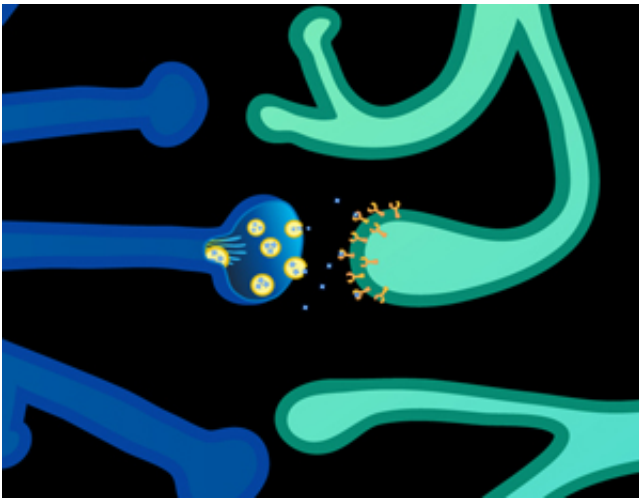
**Serotonin**—helps control many functions, such as mood, appetite, and sleep. Research shows that people with [depression](#) often have lower than normal levels of serotonin. The types of medications most commonly prescribed to treat depression act by blocking the recycling, or reuptake, of serotonin by the sending neuron. As a result, more serotonin stays at the synapse for the receiving neuron to bind onto, leading to more normal mood functioning.



**Dopamine**—mainly involved in controlling movement and aiding the flow of information to the front of the brain, which is linked to thought and emotion. It is also linked to reward systems in the brain. Problems in producing dopamine can result in Parkinson's disease, a disorder that affects a person's ability to move as they want to, resulting in stiffness, tremors or shaking and other symptoms. Some studies suggest that having too little dopamine or problems using dopamine in the thinking and feeling regions of the brain may play a role in disorders like [schizophrenia](#) or [attention deficit hyperactivity disorder \(ADHD\)](#).

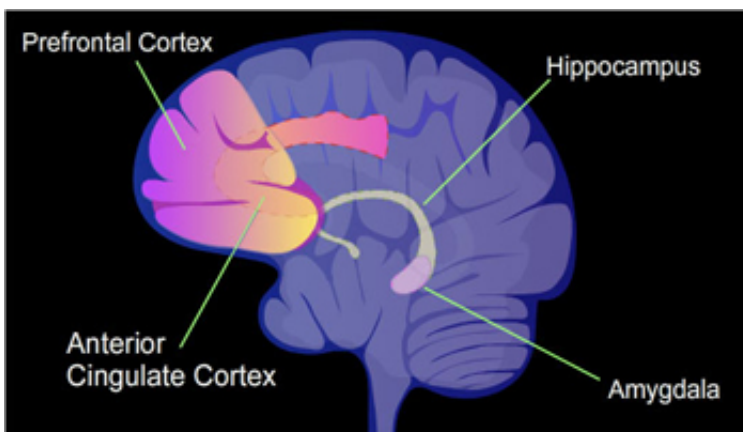


**Glutamate**—the most common neurotransmitter, glutamate has many roles throughout the brain and nervous system. Glutamate is an excitatory transmitter: when it is released it increases the chance that the neuron will fire. This enhances the electrical flow among brain cells required for normal function and plays an important role during early brain development. It also assists in learning and memory. Problems in making or using glutamate have been linked to many mental disorders, including [autism](#), [obsessive compulsive disorder \(OCD\)](#), [schizophrenia](#), and [depression](#).



## Brain Regions

Just as many neurons working together form a circuit, many circuits working together form specialized brain systems. We have many specialized brain systems that work across specific brain regions to help us talk, help us make sense of what we see, and help us to solve a problem. Some of the regions most commonly studied in mental health research are listed below.



**Amygdala**—The brain's "fear hub," which activates our natural "fight-or-flight" response to confront or escape from a danger situation. The amygdala also appears to be involved in learning to fear an event, such as touching a hot stove, and learning to overcome a fear, such as overcoming a fear of spiders. Studying how the amygdala helps create memories of fear and safety may help improve treatments for [anxiety disorders](#) like phobias or [post-traumatic stress disorder \(PTSD\)](#).

**Prefrontal cortex (PFC)**—Seat of the brain's executive functions, such as judgment, decision making, and problem solving. Different parts of the PFC are involved in using short-term or "working" memory and in retrieving long-term memories. This part of the brain also helps to control the amygdala during stressful events. Some research shows that people who have [PTSD](#) or [ADHD](#) have reduced activity in their PFCs.

**Anterior cingulate cortex (ACC)**—the ACC has many different roles, from controlling blood pressure and heart rate to responding when we sense a mistake, helping us feel motivated and stay focused on a task, and managing proper emotional reactions. Reduced ACC activity or damage to this brain area has been linked to disorders such as [ADHD](#), [schizophrenia](#), and [depression](#).

**Hippocampus**—Helps create and file new memories. When the hippocampus is damaged, a person can't create new memories, but can still remember past events and learned skills, and carry on a conversation, all of which rely on different parts of the brain. The hippocampus may be involved in mood disorders through its control of a major mood circuit called the hypothalamic-pituitary-adrenal (HPA) axis.

## Brain Basics in Real Life

### Brain Basics in Real Life—How Depression affects the Brain

#### Meet Sarah

Sarah is a middle-aged woman who seemed to have it all. She was happily married and successful in business. Then, after a serious setback at work, she lost interest in her job. She had problems getting to sleep and generally felt tired, listless, and had

Worried at the changes he saw, Sarah's husband took her to the doctor, who ran some tests. After deciding her symptoms were caused by a stroke, brain tumor, or similar conditions, Sarah's doctor referred her to a psychiatrist, a type of medical doctor who is an expert on mental disorders. Other medical professionals who can diagnose mental disorders are psychologists or clinical social workers.



The psychiatrist asked Sarah and her husband questions about Sarah's symptoms and family medical history. Epigenetic changes from stressful early-life experiences may have made it harder for Sarah to recover normally from her low mood. It's important to remember that everyone gets "the blues" from time to time. In contrast, major depression is a serious disorder that lasts for weeks. Sarah told the doctor that she had experienced long periods of deep sadness throughout her teenage years, but had never seen a doctor about it. She has faced a few bouts since then, but they have never been as bad as her current mood.

The psychiatrist diagnosed Sarah with major depression and gave her a prescription for a type of antidepressant medication called a selective serotonin reuptake inhibitor (SSRI). SSRIs are the most common type of medication used to treat depression.

SSRIs boost the amount of serotonin in the brain and help reduce symptoms of depression. Sarah also has several follow-up visits scheduled with the psychiatrist to check how she's responding to the treatment. She also begins regular talk therapy sessions with her psychiatrist. In these sessions, she learns how to change the way she thinks about and reacts to things that may trigger her depression. Several

months later, Sarah feels much better. She continues taking SSRIs and has joined an online support group. Sharing her experiences with others also dealing with depression helps Sarah to better cope with her feelings.

## Brain Research



Modern research tools and techniques are giving scientists a more detailed understanding of the brain than ever before.

### Brain Imaging

Using brain imaging technologies such as magnetic resonance imaging (MRI), which uses magnetic fields to take pictures of the brain's structure, studies show that brain growth in children with autism appears to peak early. And as they grow there are differences in brain development in children who develop bipolar disorder than children who do not. Studying and comparing such children to those with normal brain development may help scientists to pinpoint when and where mental disorders begin and perhaps how to slow or stop them from progressing. Functional magnetic resonance imaging (fMRI) is another important research tool for understanding how the brain functions.

Another type of brain scan called magnetoencephalography, or MEG, can capture split-second changes in the brain. Using MEG, some scientists have found a specific pattern of brain activity that may help predict who is most likely to respond to fast-acting antidepressant medications. Currently available antidepressants usually take four to six weeks to reach their full effect, which can be a difficult wait for some people struggling with depression. However, recent research points to a possible new class of antidepressants that can relieve symptoms of the illness in just a few hours. Knowing who might respond to such medications could reduce the amount of trial and error and frustration that many people with depression experience when starting treatment.

### Gene Studies

Advanced technologies are also making it faster, easier, and more affordable to study genes. Scientists have found many different genes and groups of genes that appear to increase risk or provide protection from various mental disorders. Other genes may change the way a person responds to a certain medication. This information may someday make it possible to predict who will develop a mental disorder and to tailor the treatment for a person's specific conditions.



and treat mental illnesses.

The National Institute of Mental Health supports many studies on mental health and the brain. You can read about some of the studies online at [www.nimh.nih.gov](http://www.nimh.nih.gov).

## Glossary

**action potential**—Transmission of signal from the cell body to the synaptic terminal at the end of the cell's axon. When the action potential reaches the end of the axon the neuron releases chemical (neurotransmitters) or electrical signals.

**amygdala**—The brain's "fear hub," which helps activate the fight-or-flight response and is also involved in emotions and memory.

**anterior cingulate cortex**—Is involved in attention, emotional responses, and many other functions.

**axon**—The long, fiber-like part of a neuron by which the cell sends information to receiving neurons.

**cell body**—Contains the nucleus and cytoplasm of a cell.

**cell membrane**—The boundary separating the inside contents of a cell from its surrounding environment.

**cytoplasm**—The substance filling a cell, containing all the chemicals and parts needed for the cell to work properly.

**dendrite**—The point of contact for receiving impulses on a neuron, branching off from the cell body.

**dopamine**—A neurotransmitter mainly involved in controlling movement, managing the release of various hormones, and aiding the flow of information to the front of the brain.

**DNA**—The "recipe of life," containing inherited genetic information that helps to define physical and some behavioral traits.

**epigenetics**—The study of how environmental factors like diet, stress and post-natal care can change gene expression (when genes turn on or off)-without altering DNA sequence.

**gene**—A segment of DNA that codes to make proteins and other important body chemicals.

**glutamate**—The most common neurotransmitter in a person's body, which increases neuronal activity, is involved in early brain development, and may also assist in learning and memory.

**hippocampus**—A portion of the brain involved in creating and filing new memories.

**hypothalamic-pituitary-adrenal (HPA) axis**—A brain-body circuit which plays a critical role in the body's response to stress.

**impulse**—An electrical communication signal sent between neurons by which neurons communicate with each other.

**magnetic resonance imaging (MRI)**—An imaging technique that uses magnetic fields to take pictures of the brain's structure.

**mutation**—A change in the code for a gene, which may be harmless or even helpful, but sometimes give rise to disabilities or diseases.

**neural circuit**—A network of neurons and their interconnections.

**neuron**—A nerve cell that is the basic, working unit of the brain and nervous system, which processes and transmits information.

**neurotransmitter**—A chemical produced by neurons that carries messages to other neurons.

**nucleus**—A structure within a cell that contains DNA and information the cell needs for growing, staying alive, and making new neurons.

**prefrontal cortex**—A highly developed area at the front of the brain that, in humans, plays a role in executive functions such as judgment, decision making and problem solving, as well as emotional control and memory.

**serotonin**—A neurotransmitter that regulates many functions, including mood, appetite, and sleep.

**synapse**—The tiny gap between neurons, where nerve impulses are sent from one neuron to another.

# Brain Stimulation Therapies

## What are brain stimulation therapies?

Brain stimulation therapies involve activating or touching the brain directly with electricity, magnets, or implants to treat depression and other disorders. Electroconvulsive therapy is the most researched stimulation therapy and has the longest history of use. (Other stimulation therapies discussed here — vagus nerve stimulation, repetitive transcranial magnetic stimulation, magnetic seizure therapy, and deep brain stimulation—are newer, more experimental methods.

## Electroconvulsive therapy

First developed in 1938, electroconvulsive therapy (ECT) for years had a poor reputation with many negative depictions in popular culture. However, the procedure has improved significantly since its initial use and is safe and effective. People who undergo ECT do not feel any pain or discomfort during the procedure.

ECT is usually considered only after a patient's illness has not improved after other treatment options, such as antidepressant medication or psychotherapy, are tried. It is most often used to treat severe, treatment-resistant depression, but occasionally it is used to treat other mental disorders, such as bipolar disorder or schizophrenia. It also may be used in life-threatening circumstances, such as when a patient is unable to move or respond to the outside world (e.g., catatonia), is suicidal, or is malnourished as a result of severe depression. One study, the Consortium for Research in ECT study, found an 86 percent remission rate for those with severe major depression.<sup>1</sup> The same study found it to be effective in reducing chances of relapse when the patients underwent follow-up treatments.<sup>2</sup>



### **How does it work?**

Before ECT is administered, a person is sedated with general anesthesia and given a medication called a muscle relaxant to prevent movement during the procedure. An anesthesiologist monitors breathing, heart rate and blood pressure during the entire procedure, which is conducted by a trained physician. Electrodes are placed at precise locations on the head. Through the electrodes, an electric current passes through the brain, causing a seizure that lasts generally less than one minute.

Scientists are unsure how the treatment works to relieve depression, but it appears to produce many changes in the chemistry and functioning of the brain. Because the patient is under anesthesia and has taken a muscle relaxant, the patient's body shows no signs of seizure, nor does he or she feel any pain, other than the discomfort associated with inserting an IV.

Five to ten minutes after the procedure ends, the patient awakens. He or she may feel groggy at first as the anesthesia wears off. But after about an hour, the patient usually is alert and can resume normal activities.

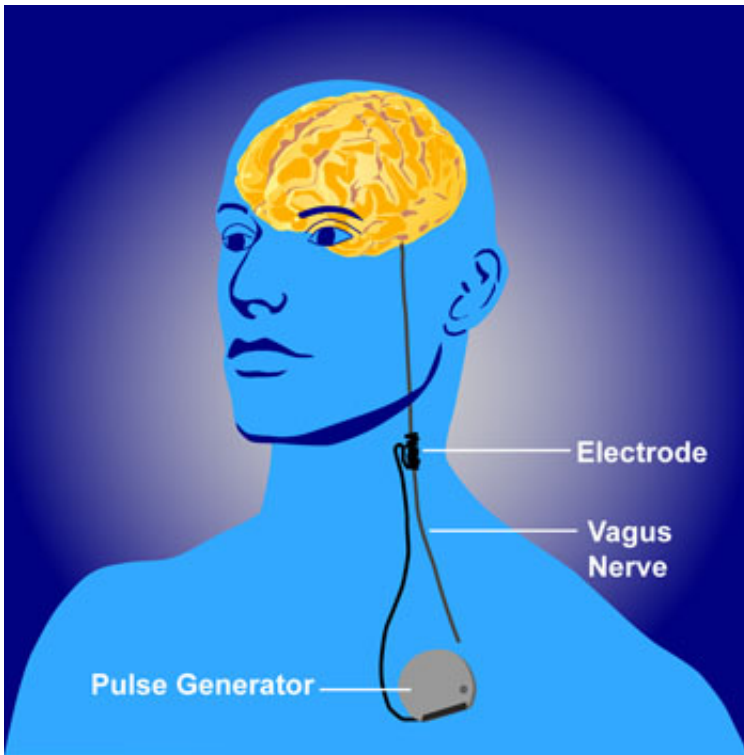
A typical course of ECT is administered about three times a week until the patient's depression lifts (usually within six to 12 treatments). After that, maintenance ECT treatment is sometimes needed to reduce the chance that symptoms will return. ECT maintenance treatment varies depending on the needs of the individual, and may range from one session per week to one session every few months. Frequently, a person who underwent ECT will take antidepressant medication or a mood stabilizing medication as well.

### **What are the side effects?**

The most common side effects associated with ECT are headache, upset stomach, and muscle aches. Some people may experience memory problems, especially of memories around the time of the treatment. People may also have trouble remembering information learned shortly after the procedure, but this difficulty usually disappears over the days and weeks following the end of an ECT course. It is possible that a person may have gaps in memory over the weeks during which he or she receives treatment.<sup>3</sup>

the head—typically the right side because it is opposite the brain's learning and memory areas—appears less likely to cause memory problems and therefore is preferred by many doctors. In the past, a "sine wave" was used to administer electricity in a constant, high dose. However, studies have found that a "brief pulse" of electricity administered in several short bursts is less likely to cause memory loss, and therefore is most commonly used today.<sup>4</sup>

## Vagus nerve stimulation



Vagus nerve stimulation (VNS) works through a device implanted under the skin that sends electrical pulses through the left vagus nerve, half of a prominent pair of nerves that run from the brainstem through the neck and down to each side of the chest and abdomen. The vagus nerves carry messages from the brain to the body's major organs like the heart, lungs and intestines, and to areas of the brain that control mood, sleep, and other functions.

VNS was originally developed as a treatment for epilepsy. However, it became evident that it also had effects on mood, especially depressive symptoms. Using brain scans, scientists found that the device affected areas of the brain that are also involved in mood regulation. The pulses also appeared to affect certain neurotransmitters (brain chemicals) associated with mood, including serotonin, norepinephrine, GABA and glutamate.<sup>5</sup>

In 2005, the U.S. Food and Drug Administration (FDA) approved VNS for use in treating major depression in certain circumstances—if the illness has lasted two years or more, is severe or recurrent, and if the depression has not eased after trying at least four other treatments. Despite FDA approval,

VNS remains a controversial treatment for depression because results of studies testing its effectiveness in treating major depression have been mixed.

### **How does it work?**

A device called a pulse generator, about the size of a stopwatch, is surgically implanted in the upper left side of the chest. Connected to the pulse generator is a lead wire, which is guided under the skin up to the neck, where it is attached to the left-side vagus nerve.

Typically, electrical pulses that last about 30 seconds are sent about every five minutes from the generator to the vagus nerve. The duration and frequency of the pulses may vary depending on how the generator is programmed. The vagus nerve, in turn, delivers those signals to the brain. The pulse generator, which operates continuously, is powered by a battery that lasts around 10 years after which it must be replaced. Normally, a person does not feel any sensation in the body as the device works, but it may cause coughing or the voice may become hoarse while the nerve is being stimulated.

The device also can be temporarily deactivated by placing a magnet over the chest where the pulse generator is implanted. A person may want to deactivate it if side effects become intolerable, or before engaging in strenuous activity or exercise because the device may interfere with breathing. The device reactivates when the magnet is removed.

### **What are the side effects?**

VNS is not without risk. There may be complications such as infection from the implant surgery, or the device may come loose, move around or malfunction, which may require additional surgery to correct. Long-term side effects are unknown.

Other potential side effects include:

- Voice changes or hoarseness
- Cough or sore throat
- Neck pain

Difficulty swallowing

## Repetitive transcranial magnetic stimulation

Repetitive transcranial magnetic stimulation (rTMS) uses a magnet instead of an electrical current to activate the brain. First developed in 1985, rTMS has been studied as a possible treatment for depression, psychosis and other disorders since the mid-1990's.

Clinical trials studying the effectiveness of rTMS reveal mixed results. When compared to a placebo or inactive (sham) treatment, some studies have found that rTMS is more effective in treating patients with major depression.<sup>6</sup> But other studies have found no difference in response compared to inactive treatment.<sup>7</sup>

In October 2008, rTMS was approved for use by the FDA as a treatment for major depression for patients who have not responded to at least one antidepressant medication. It is also used in countries such as in Canada and Israel as a treatment for depression for patients who have not responded to medications and who might otherwise be considered for ECT.



### **How does it work?**

Unlike ECT, in which electrical stimulation is more generalized, rTMS can be targeted to a specific site in the brain. Scientists believe that focusing on a specific spot in the brain reduces the chance for the type of side effects that are associated with ECT. Opinions vary as to what spot is best.

A typical rTMS session lasts 30 to 60 minutes and does not require anesthesia. An electromagnetic coil is held against the forehead near an area of the brain that is thought to be involved in mood regulation. Then, short electromagnetic pulses are administered through the coil. The magnetic pulse easily passes through the skull, and causes small electrical currents that stimulate nerve cells in the targeted brain region. And because this type of pulse generally does not reach further than two inches into the brain, scientists can select which parts of the brain will be affected and which will not be. The magnetic field is about the same strength as that of a magnetic resonance imaging (MRI) scan. Generally, the person will feel a slight knocking or tapping of the head as the pulses are administered.

Not all scientists agree on the best way to position the magnet on the patient's head or give the electromagnetic pulses. They do not yet know if rTMS works best when given as a single treatment or combined with medication. More research, including a NIMH-funded trial, is underway to determine the safest and most effective use of rTMS.

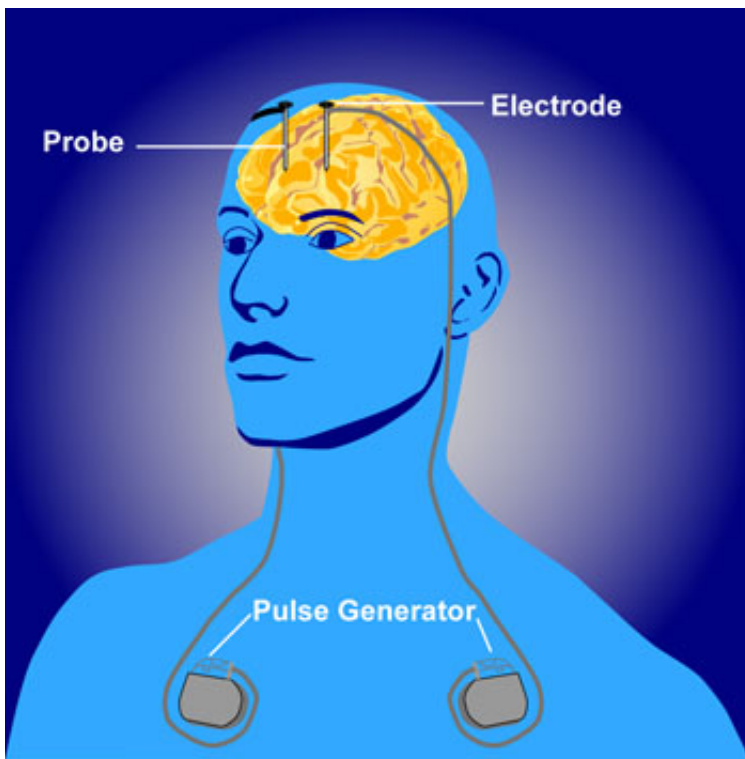
### **What are the side effects?**

Sometimes a person may have discomfort at the site on the head where the magnet is placed. The muscles of the scalp, jaw or face may contract or tingle during the procedure. Mild headache or brief lightheadedness may result. It is also possible that the procedure could cause a seizure, although documented incidences of this are uncommon. A recent large-scale study on the safety of rTMS found that most side effects, such as headaches or scalp discomfort, were mild or moderate, and no seizures occurred.<sup>8</sup> Because the treatment is new, however, long-term side effects are unknown.

## Magnetic seizure therapy

Magnetic seizure therapy (MST) borrows certain aspects from both ECT and rTMS. Like rTMS, it uses a magnetic pulse instead of electricity to stimulate a precise target in the brain. However, unlike rTMS, MST aims to induce a seizure like ECT. So the pulse given is at a higher frequency than that used in rTMS. Therefore, like ECT, the patient must be anesthetized and given a muscle relaxant to prevent movement. The goal of MST is to retain the effectiveness of ECT while reducing the cognitive side effects associated with it.

MST is currently in the early stages of testing, but initial results are promising. Studies on both animals and humans have found that MST produces fewer memory side effects, shorter seizures, and allows for a shorter recovery time than ECT.<sup>9,10</sup> However, the effect on treatment-resistant depression is not yet established. Studies are underway to determine its antidepressant effects.



Deep brain stimulation (DBS) was first developed as a treatment for Parkinson's disease to reduce tremor, stiffness, walking problems and uncontrollable movements. In DBS, a pair of electrodes is implanted in the brain and controlled by a generator that is implanted in the chest. Stimulation is continuous and its frequency and level is customized to the individual.

DBS has only recently been studied as a treatment for depression or obsessive compulsive disorder (OCD). Currently it is available on an experimental basis only. So far, very little research has been conducted to test DBS for depression treatment, but the few studies that have been conducted show that the treatment may be promising. One small trial involving people with severe, treatment-resistant depression found that four out of six participants showed marked improvement in symptoms either immediately after the procedure, or soon after.<sup>11</sup> Another study involving 10 people with OCD found continued improvement among the majority three years after surgery.<sup>12</sup>

#### ***How does it work?***

DBS requires brain surgery. The head is shaved and then attached with screws to a sturdy frame that prevents the head from moving during the surgery. Scans of the head and brain using MRI are taken. The surgeon uses these images as guides during the surgery. Patients are awake during the procedure to provide the surgeon with feedback, but they feel no pain because the head is numbed with a local anesthetic.

Once ready for surgery, two holes are drilled into the head. From there, the surgeon threads a slender tube down into the brain to place electrodes on each side of a specific part of the brain. In the case of depression, the part of the brain targeted is called the subthalamic nucleus. This area has been found to be overactive in depression and other mood disorders.<sup>11</sup> In the case of OCD, the electrodes are placed in a different part of the brain believed to be associated with the disorder.

After the electrodes are implanted and the patient provides feedback about the placement of the electrodes, the patient is put under general anesthesia. The electrodes are then attached to wires that are run inside the body from the head down to the chest, where a pair of battery-operated generators are implanted. From here, electrical pulses are continuously delivered over the wires to the electrodes in the brain. Although it is unclear exactly how the device works to reduce depression or OCD, scientists believe that the pulses help to "reset" the area of the brain that is malfunctioning so that it works normally again.

#### ***What are the side effects?***

DBS carries risks associated with any type of brain surgery. For example, the procedure may lead to:

- Bleeding in the brain or stroke
- Infection
- Disorientation or confusion
- Unwanted mood changes
- Movement disorders
- Lightheadedness
- Trouble sleeping

Because the procedure is still experimental, other side effects that are not yet identified may be possible. Long-term benefits and side effects are unknown.

#### **What research is underway on brain stimulation therapies?**

Brain stimulation therapies hold promise for treating certain mental disorders that do not respond to more conventional treatments. Therefore, they are of high interest and are the subject of many studies. For example, researchers continue to look for ways to reduce the side effects of FCT while retaining the benefits. Studies on rTMS are ongoing and include a trial in which the procedure

Other researchers are studying how the brain responds to VNS by using imaging techniques such as PET scans. Finally, although DBS as a depression treatment is still very new, researchers are beginning to conduct studies with people to determine its effectiveness and safety in treating depression, OCD and other mental disorders.

### What is major depression?

The normal human emotion we sometimes call “depression” is a common response to a loss, failure or disappointment. Major depression is different. It is a serious emotional and biological disease that affects one’s thoughts, feelings, behavior, mood and physical health. Depression is a life-long condition in which periods of wellness alternate with recurrences of illness and may require long-term treatment to keep symptoms from returning.

All age groups and all racial, ethnic and socioeconomic groups can experience depression. Some individuals may only have one episode of depression in a lifetime, but often people have recurrent episodes. If untreated, episodes commonly last anywhere from a few months to many years. An estimated 25 million American adults are affected by major depression in a given year, but only one-half ever receive treatment.

### What are the symptoms of major depression and how is it diagnosed?

Depression can be difficult to detect from the outside looking in, but for those who experience major depression, it is disruptive in a multitude of ways and usually represent a significant change in how a person functions. Depression causes changes in people in the following key areas:

- Changes in sleep. Some people experience difficulty in falling asleep, wake during the night and awaken earlier than desired. Other people sleep excessively.
- Changes in appetite. Changes can mean either weight gain or weight loss.
- Poor concentration. The inability to concentrate and/or make decisions is a serious aspect of depression. Some people during severe depression find following the thread of a simple newspaper article to be extremely difficult..
- Loss of energy. The loss of energy and fatigue often affects people living with depression. Mental speed and activity are usually reduced, as is the ability to perform normal daily routines.
- Lack of interest. During depression, people feel sad and lose interest in usual activities.
- Low self-esteem. During periods of depression, people dwell on memories of losses or failures and feel excessive guilt and helplessness.
- Hopelessness or guilt. The symptoms of depression often produce a strong feeling of hopelessness, or a belief that nothing will ever improve. These feelings can lead to thoughts of suicide.
- Movement changes. People may literally look “slowed down” or activated and agitated.

Mental healthcare professionals use the criteria for depression in the American Psychiatric Association’s *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) to

---

develop a diagnosis. The DSM-5's criteria for a major depressive episode (which last longer than two weeks) include:

- Depressed mood.
- Reduced interest in activities.
- Changes in appetite.
- Sleep disturbances.
- Feeling agitated or slowed down.
- Feeling worthless or excessive guilt.
- Difficulty thinking, concentrating, or troubles making decisions.
- Suicidal thoughts or intention.

### What treatments are available?

There are three well-established types of treatment for depression:

- Medications. Medications often effectively control the serious symptoms of depression. It often takes two to four weeks for antidepressant medications to have their full effect.
- Psychotherapy. There are several types of psychotherapy that have been shown to be effective for depression, including cognitive behavioral therapy (CBT) and interpersonal therapy (IPT). In general, these two types of therapies are short-term; treatments usually last only 10 to 20 weeks. Support groups offer opportunities to share frustrations and successes, referrals to specialist and community resources and information about what works best when trying to recover.
- Electroconvulsive Therapy (ECT). ECT is a highly effective treatment for severe depression episodes and for severe depression with psychosis. When medication and psychotherapy are not effective in treating severe symptoms, such as acute psychosis or thoughts of suicide, or if a person cannot take antidepressants, ECT may be considered. Memory problems can follow ECT treatments, so a careful risk-benefit assessment needs to be made for this intervention

Other forms of treatment have been successful either combined with the more traditional treatments or alone, including: transcranial magnetic stimulation (TMS), aerobic exercise and complementary and alternative medicine.

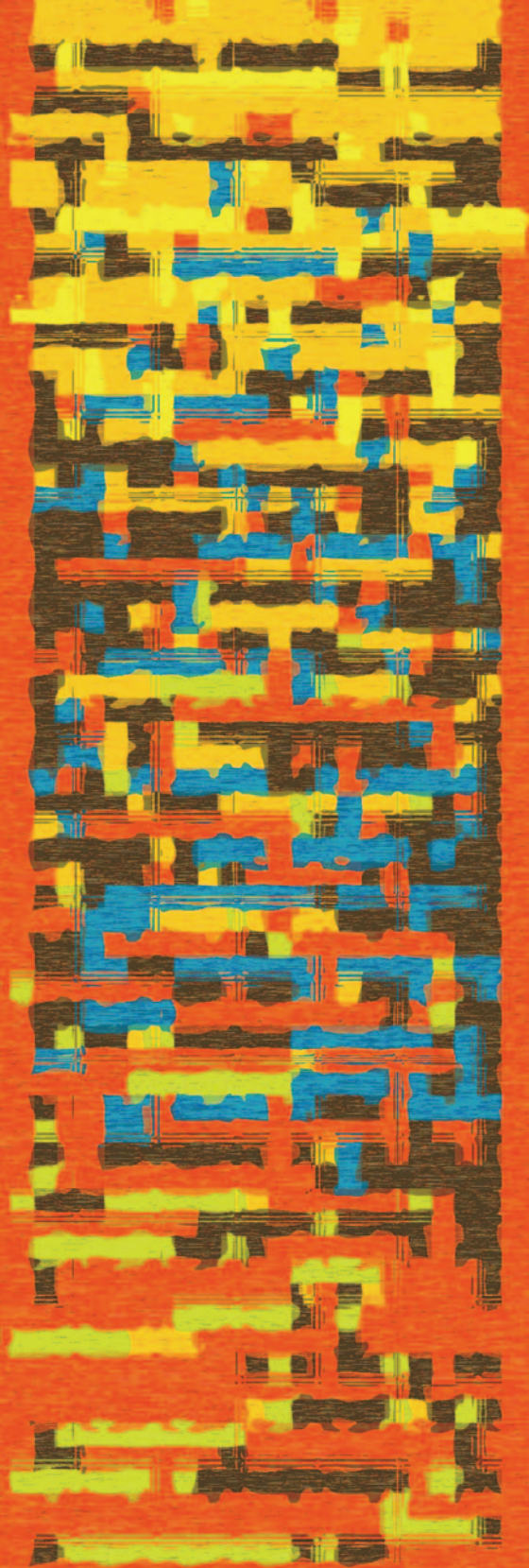
Devastating as this disease may be, it is very treatable in most people. Today the availability of treatment and understanding of depression lessens the barriers that can prevent early detection, diagnosis and decision to seek treatment.

*Reviewed by Ken Duckworth, M.D., April 2013*



National Institute  
of Mental Health

# depression



## Contents

What is depression?	2
What are the different forms of depression?	2
What are the signs and symptoms of depression?	4
What illnesses often co-exist with depression?	5
What causes depression?	6
<i>How do women experience depression?</i>	7
<i>How do men experience depression?</i>	7
<i>How do older adults experience depression?</i>	8
<i>How do children and teens experience depression?</i>	9
How is depression diagnosed and treated?	10
How can I help a loved one who is depressed?	18
How can I help myself if I am depressed?	19
Where can I go for help?	20
<b>What if I or someone I know is in crisis?</b>	<b>21</b>
Citations	22
For more information	24

## What is depression?

Everyone occasionally feels blue or sad. But these feelings are usually short-lived and pass within a couple of days. When you have depression, it interferes with daily life and causes pain for both you and those who care about you. Depression is a common but serious illness.

Many people with a depressive illness never seek treatment. But the majority, even those with the most severe depression, can get better with treatment. Medications, psychotherapies, and other methods can effectively treat people with depression.

## What are the different forms of depression?

There are several forms of depressive disorders.

**Major depressive disorder, or major depression**, is characterized by a combination of symptoms that interfere with a person's ability to work, sleep, study, eat, and enjoy once-pleasurable activities. Major depression is disabling and prevents a person from functioning normally. Some people may experience only a single episode within their lifetime, but more often a person may have multiple episodes.

*Depression is a common but serious illness.*

*Most who experience depression  
need treatment to get better.*

**Dysthymic disorder, or dysthymia**, is characterized by long-term (2 years or longer) symptoms that may not be severe enough to disable a person but can prevent normal functioning or feeling well. People with dysthymia may also experience one or more episodes of major depression during their lifetimes.

**Minor depression** is characterized by having symptoms for 2 weeks or longer that do not meet full criteria for major depression. Without treatment, people with minor depression are at high risk for developing major depressive disorder.

Some forms of depression are slightly different, or they may develop under unique circumstances. However, not everyone agrees on how to characterize and define these forms of depression. They include:

- **Psychotic depression**, which occurs when a person has severe depression plus some form of psychosis, such as having disturbing false beliefs or a break with reality (delusions), or hearing or seeing upsetting things that others cannot hear or see (hallucinations).
- **Postpartum depression**, which is much more serious than the “baby blues” that many women experience after giving birth, when hormonal and physical changes and the new responsibility of caring for a newborn can be overwhelming. It is estimated that 10 to 15 percent of women experience postpartum depression after giving birth.<sup>1</sup>
- **Seasonal affective disorder (SAD)**, which is characterized by the onset of depression during the winter months, when there is less natural sunlight. The depression generally lifts during spring and summer. SAD may be effectively treated with light therapy, but nearly half of those with SAD do not get better with light therapy alone. Antidepressant medication and psychotherapy can reduce SAD symptoms, either alone or in combination with light therapy.<sup>2</sup>

**Bipolar disorder**, also called manic-depressive illness, is not as common as major depression or dysthymia. Bipolar disorder is characterized by cycling mood changes—from extreme highs (e.g., mania) to extreme lows (e.g., depression). More information about bipolar disorder is available at <http://www.nimh.nih.gov/health/topics/bipolar-disorder/index.shtml>.

## What are the signs and symptoms of depression?

People with depressive illnesses do not all experience the same symptoms. The severity, frequency, and duration of symptoms vary depending on the individual and his or her particular illness.



### **SIGNS AND SYMPTOMS INCLUDE:**

*Persistent sad, anxious, or “empty” feelings*

*Feelings of hopelessness or pessimism*

*Feelings of guilt, worthlessness, or helplessness*

*Irritability, restlessness*

*Loss of interest in activities or hobbies once pleasurable, including sex*

*Fatigue and decreased energy*

*Difficulty concentrating, remembering details, and making decisions*

*Insomnia, early-morning wakefulness, or excessive sleeping*

*Overeating, or appetite loss*

*Thoughts of suicide, suicide attempts*

*Aches or pains, headaches, cramps, or digestive problems that do not ease even with treatment.*

*I started missing days from work, and a friend noticed that something wasn't right. She talked to me about the time she had been really depressed and had gotten help from her doctor.*

## What illnesses often co-exist with depression?

Other illnesses may come on before depression, cause it, or be a consequence of it. But depression and other illnesses interact differently in different people. In any case, co-occurring illnesses need to be diagnosed and treated.

Anxiety disorders, such as post-traumatic stress disorder (PTSD), obsessive-compulsive disorder, panic disorder, social phobia, and generalized anxiety disorder, often accompany depression.<sup>3,4</sup> PTSD can occur after a person experiences a terrifying event or ordeal, such as a violent assault, a natural disaster, an accident, terrorism or military combat. People experiencing PTSD are especially prone to having co-existing depression.

In a National Institute of Mental Health (NIMH)-funded study, researchers found that more than 40 percent of people with PTSD also had depression 4 months after the traumatic event.<sup>5</sup>

Alcohol and other substance abuse or dependence may also co-exist with depression. Research shows that mood disorders and substance abuse commonly occur together.<sup>6</sup>

Depression also may occur with other serious medical illnesses such as heart disease, stroke, cancer, HIV/AIDS, diabetes, and Parkinson's disease. People who have depression along with another medical illness tend to have more severe symptoms of both depression and the medical illness, more difficulty adapting to their medical condition, and more medical costs than those who do not have co-existing depression.<sup>7</sup> Treating the depression can also help improve the outcome of treating the co-occurring illness.<sup>8</sup>

## Personal Story

*It was really hard to get out of bed in the morning. I just wanted to hide under the covers and not talk to anyone. I didn't feel much like eating and I lost a lot of weight.*

*Nothing seemed fun anymore. I was tired all the time, and I wasn't sleeping well at night. But I knew I had to keep going because I've got kids and a job. It just felt so impossible, like nothing was going to change or get better.*

## What causes depression?

Most likely, depression is caused by a combination of genetic, biological, environmental, and psychological factors.

Depressive illnesses are disorders of the brain. Longstanding theories about depression suggest that important neurotransmitters—chemicals that brain cells use to communicate—are out of balance in depression. But it has been difficult to prove this.

Brain-imaging technologies, such as magnetic resonance imaging (MRI), have shown that the brains of people who have depression look different than those of people without depression. The parts of the brain involved in mood, thinking, sleep, appetite, and behavior appear different. But these images do not reveal why the depression has occurred. They also cannot be used to diagnose depression.

Some types of depression tend to run in families. However, depression can occur in people without family histories of depression too.<sup>9</sup> Scientists are studying certain genes that may make some people more prone to depression. Some genetics research indicates that risk for depression results from the influence of several genes acting together with environmental or other factors.<sup>10</sup> In addition, trauma, loss of a loved one, a difficult relationship, or any stressful situation may trigger a depressive episode. Other depressive episodes may occur with or without an obvious trigger.

*Research indicates that depressive illnesses are disorders of the brain.*

### *How do women experience depression?*

Depression is more common among women than among men. Biological, life cycle, hormonal, and psychosocial factors that women experience may be linked to women's higher depression rate. Researchers have shown that hormones directly affect the brain chemistry that controls emotions and mood. For example, women are especially vulnerable to developing postpartum depression after giving birth, when hormonal and physical changes and the new responsibility of caring for a newborn can be overwhelming.

Some women may also have a severe form of premenstrual syndrome (PMS) called premenstrual dysphoric disorder (PMDD). PMDD is associated with the hormonal changes that typically occur around ovulation and before menstruation begins.

During the transition into menopause, some women experience an increased risk for depression. In addition, osteoporosis—bone thinning or loss—may be associated with depression.<sup>11</sup> Scientists are exploring all of these potential connections and how the cyclical rise and fall of estrogen and other hormones may affect a woman's brain chemistry.<sup>12</sup>

Finally, many women face the additional stresses of work and home responsibilities, caring for children and aging parents, abuse, poverty, and relationship strains. It is still unclear, though, why some women faced with enormous challenges develop depression, while others with similar challenges do not.

### *How do men experience depression?*

Men often experience depression differently than women. While women with depression are more likely to have feelings of sadness, worthlessness, and excessive guilt, men are more likely to be very tired, irritable, lose interest in once-pleasurable activities, and have difficulty sleeping.<sup>13,14</sup>

Men may be more likely than women to turn to alcohol or drugs when they are depressed. They also may become frustrated, discouraged, irritable, angry, and sometimes abusive. Some men throw themselves into their work to avoid talking about their depression with family or friends, or behave recklessly. And although more women attempt suicide, many more men die by suicide in the United States.<sup>15</sup>



## *How do older adults experience depression?*

Depression is not a normal part of aging. Studies show that most seniors feel satisfied with their lives, despite having more illnesses or physical problems. However, when older adults do have depression, it may be overlooked because seniors may show different, less obvious symptoms. They may be less likely to experience or admit to feelings of sadness or grief.<sup>16</sup>

Sometimes it can be difficult to distinguish grief from major depression. Grief after loss of a loved one is a normal reaction to the loss and generally does not require professional mental health treatment. However, grief that is complicated and lasts for a very long time following a loss may require treatment. Researchers continue to study the relationship between complicated grief and major depression.<sup>17</sup>

Older adults also may have more medical conditions such as heart disease, stroke, or cancer, which may cause depressive symptoms. Or they may be taking medications with side effects that contribute to depression. Some older adults may experience what doctors call vascular depression, also called arteriosclerotic depression or subcortical ischemic depression. Vascular depression may result when blood vessels become less flexible and harden over time, becoming constricted. Such hardening of vessels prevents normal blood flow to the body's organs, including the brain. Those with vascular depression may have, or be at risk for, co-existing heart disease or stroke.<sup>18</sup>

Although many people assume that the highest rates of suicide are among young people, older white males age 85 and older actually have the highest suicide rate in the United States. Many have a depressive illness that their doctors are not aware of, even though many of these suicide victims visit their doctors within 1 month of their deaths.<sup>19</sup>

Most older adults with depression improve when they receive treatment with an antidepressant, psychotherapy, or a combination of both.<sup>20</sup> Research has shown that medication alone and combination treatment are both effective in reducing depression in older adults.<sup>21</sup> Psychotherapy alone also can be effective in helping older adults stay free of depression, especially among those with minor depression. Psychotherapy is particularly useful for those who are unable or unwilling to take antidepressant medication.<sup>22, 23</sup>

### *How do children and teens experience depression?*

Children who develop depression often continue to have episodes as they enter adulthood. Children who have depression also are more likely to have other more severe illnesses in adulthood.<sup>24</sup>

A child with depression may pretend to be sick, refuse to go to school, cling to a parent, or worry that a parent may die. Older children may sulk, get into trouble at school, be negative and irritable, and feel misunderstood. Because these signs may be viewed as normal mood swings typical of children as they move through developmental stages, it may be difficult to accurately diagnose a young person with depression.

Before puberty, boys and girls are equally likely to develop depression. By age 15, however, girls are twice as likely as boys to have had a major depressive episode.<sup>25</sup>

Depression during the teen years comes at a time of great personal change—when boys and girls are forming an identity apart from their parents, grappling with gender issues and emerging sexuality, and making independent decisions for the first time in their lives. Depression in adolescence frequently co-occurs with other disorders such as anxiety, eating disorders, or substance abuse. It can also lead to increased risk for suicide.<sup>24,26</sup>

An NIMH-funded clinical trial of 439 adolescents with major depression found that a combination of medication and psychotherapy was the most effective treatment option.<sup>27</sup> Other NIMH-funded researchers are developing and testing ways to prevent suicide in children and adolescents.

*Childhood depression often persists, recurs, and continues into adulthood, especially if left untreated.*

## How is depression diagnosed and treated?

Depression, even the most severe cases, can be effectively treated. The earlier that treatment can begin, the more effective it is.

The first step to getting appropriate treatment is to visit a doctor or mental health specialist. Certain medications, and some medical conditions such as viruses or a thyroid disorder, can cause the same symptoms as depression. A doctor can rule out these possibilities by doing a physical exam, interview, and lab tests. If the doctor can find no medical condition that may be causing the depression, the next step is a psychological evaluation.

The doctor may refer you to a mental health professional, who should discuss with you any family history of depression or other mental disorder, and get a complete history of your symptoms. You should discuss when your symptoms started, how long they have lasted, how severe they are, and whether they have occurred before and if so, how they were treated. The mental health professional may also ask if you are using alcohol or drugs, and if you are thinking about death or suicide.

Once diagnosed, a person with depression can be treated in several ways. The most common treatments are medication and psychotherapy.



*I called my doctor and talked about how I was feeling. She had me come in for a checkup and gave me the name of a specialist, who is an expert in treating depression.*

## *Medication*

**Antidepressants** primarily work on brain chemicals called neurotransmitters, especially serotonin and norepinephrine. Other antidepressants work on the neurotransmitter dopamine. Scientists have found that these particular chemicals are involved in regulating mood, but they are unsure of the exact ways that they work. The latest information on medications for treating depression is available on the U.S. Food and Drug Administration (FDA) website at <http://www.fda.gov>.

### *Popular newer antidepressants*

Some of the newest and most popular antidepressants are called selective serotonin reuptake inhibitors (SSRIs). Fluoxetine (Prozac), sertraline (Zoloft), escitalopram (Lexapro), paroxetine (Paxil), and citalopram (Celexa) are some of the most commonly prescribed SSRIs for depression. Most are available in generic versions. Serotonin and norepinephrine reuptake inhibitors (SNRIs) are similar to SSRIs and include venlafaxine (Effexor) and duloxetine (Cymbalta).

SSRIs and SNRIs tend to have fewer side effects than older antidepressants, but they sometimes produce headaches, nausea, jitters, or insomnia when people first start to take them. These symptoms tend to fade with time. Some people also experience sexual problems with SSRIs or SNRIs, which may be helped by adjusting the dosage or switching to another medication.

One popular antidepressant that works on dopamine is bupropion (Wellbutrin). Bupropion tends to have similar side effects as SSRIs and SNRIs, but it is less likely to cause sexual side effects. However, it can increase a person's risk for seizures.

## Tricyclics

Tricyclics are older antidepressants. Tricyclics are powerful, but they are not used as much today because their potential side effects are more serious. They may affect the heart in people with heart conditions. They sometimes cause dizziness, especially in older adults. They also may cause drowsiness, dry mouth, and weight gain. These side effects can usually be corrected by changing the dosage or switching to another medication. However, tricyclics may be especially dangerous if taken in overdose. Tricyclics include imipramine and nortriptyline.

## MAOIs

Monoamine oxidase inhibitors (MAOIs) are the oldest class of antidepressant medications. They can be especially effective in cases of “atypical” depression, such as when a person experiences increased appetite and the need for more sleep rather than decreased appetite and sleep. They also may help with anxious feelings or panic and other specific symptoms.

However, people who take MAOIs must avoid certain foods and beverages (including cheese and red wine) that contain a substance called tyramine. Certain medications, including some types of birth control pills, prescription pain relievers, cold and allergy medications, and herbal supplements, also should be avoided while taking an MAOI. These substances can interact with MAOIs to cause dangerous increases in blood pressure. The development of a new MAOI skin patch may help reduce these risks. If you are taking an MAOI, your doctor should give you a complete list of foods, medicines, and substances to avoid.

MAOIs can also react with SSRIs to produce a serious condition called “serotonin syndrome,” which can cause confusion, hallucinations, increased sweating, muscle stiffness, seizures, changes in blood pressure or heart rhythm, and other potentially life-threatening conditions. MAOIs should not be taken with SSRIs.

### *How should I take medication?*

All antidepressants must be taken for at least 4 to 6 weeks before they have a full effect. You should continue to take the medication, even if you are feeling better, to prevent the depression from returning.

Medication should be stopped only under a doctor's supervision. Some medications need to be gradually stopped to give the body time to adjust. Although antidepressants are not habit-forming or addictive, suddenly ending an antidepressant can cause withdrawal symptoms or lead to a relapse of the depression. Some individuals, such as those with chronic or recurrent depression, may need to stay on the medication indefinitely.

In addition, if one medication does not work, you should consider trying another. NIMH-funded research has shown that people who did not get well after taking a first medication increased their chances of beating the depression after they switched to a different medication or added another medication to their existing one.<sup>28,29</sup>

Sometimes stimulants, anti-anxiety medications, or other medications are used together with an antidepressant, especially if a person has a co-existing illness. However, neither anti-anxiety medications nor stimulants are effective against depression when taken alone, and both should be taken only under a doctor's close supervision.

More information about mental health medications is available on the NIMH website at <http://www.nimh.nih.gov/health/publications/mental-health-medications/index.shtml>.

*Report any unusual side effects to*

*a doctor immediately.*

### *FDA warning on antidepressants*

Despite the relative safety and popularity of SSRIs and other antidepressants, studies have suggested that they may have unintentional effects on some people, especially adolescents and young adults. In 2004, the Food and Drug Administration (FDA) conducted a thorough review of published and unpublished controlled clinical trials of antidepressants that involved nearly 4,400 children and adolescents. The review revealed that 4 percent of those taking antidepressants thought about or attempted suicide (although no suicides occurred), compared to 2 percent of those receiving placebos.

This information prompted the FDA, in 2005, to adopt a “black box” warning label on all antidepressant medications to alert the public about the potential increased risk of suicidal thinking or attempts in children and adolescents taking antidepressants. In 2007, the FDA proposed that makers of all antidepressant medications extend the warning to include young adults up through age 24. A “black box” warning is the most serious type of warning on prescription drug labeling.

The warning emphasizes that patients of all ages taking antidepressants should be closely monitored, especially during the initial weeks of treatment. Possible side effects to look for are worsening depression, suicidal thinking or behavior, or any unusual changes in behavior such as sleeplessness, agitation, or withdrawal from normal social situations. The warning adds that families and caregivers should also be told of the need for close monitoring and report any changes to the doctor. The latest information from the FDA can be found on their website at <http://www.fda.gov>.

Results of a comprehensive review of pediatric trials conducted between 1988 and 2006 suggested that the benefits

*Children, adolescents, and young adults taking antidepressants should be closely monitored.*

of antidepressant medications likely outweigh their risks to children and adolescents with major depression and anxiety disorders.<sup>30</sup> The study was funded in part by NIMH.

Also, the FDA issued a warning that combining an SSRI or SNRI antidepressant with one of the commonly-used “triptan” medications for migraine headache could cause a life-threatening “serotonin syndrome,” marked by agitation, hallucinations, elevated body temperature, and rapid changes in blood pressure. Although most dramatic in the case of the MAOIs, newer antidepressants may also be associated with potentially dangerous interactions with other medications.

## WHAT ABOUT ST. JOHN’S WORT?

The extract from the herb St. John’s wort (*Hypericum perforatum*) has been used for centuries in many folk and herbal remedies. Today in Europe, it is used extensively to treat mild to moderate depression. In the United States, it is one of the top-selling botanical products.

In an 8-week trial involving 340 patients diagnosed with major depression, St. John’s wort was compared to a common SSRI and a placebo (sugar pill). The trial found that St. John’s wort was no more effective than the placebo in treating major depression.<sup>31</sup> However, use of St. John’s wort for minor or moderate depression may be more effective. Its use in the treatment of depression remains under study.

St. John’s wort can interact with other medications, including those used to control HIV infection. In 2000, the FDA issued a Public Health Advisory letter stating that the herb may interfere with certain medications used to treat heart disease, depression, seizures, certain cancers, and those used to prevent organ transplant rejection. The herb also may interfere with the effectiveness of oral contraceptives. Consult with your doctor before taking any herbal supplement.



## Psychotherapy

Several types of psychotherapy—or “talk therapy”—can help people with depression.

Two main types of psychotherapies—cognitive-behavioral therapy (CBT) and interpersonal therapy (IPT)—are effective in treating depression. CBT helps people with depression restructure negative thought patterns. Doing so helps people interpret their environment and interactions with others in a positive and realistic way. It may also help you recognize things that may be contributing to the depression and help you change behaviors that may be making the depression worse. IPT helps people understand and work through troubled relationships that may cause their depression or make it worse.


For mild to moderate depression, psychotherapy may be the best option. However, for severe depression or for certain people, psychotherapy may not be enough. For teens, a combination of medication and psychotherapy may be the most effective approach to treating major depression and reducing the chances of it coming back.<sup>27</sup> Another study looking at depression treatment among older adults found that people who responded to initial treatment of medication and IPT were less likely to have recurring depression if they continued their combination treatment for at least 2 years.<sup>23</sup>

More information on psychotherapy is available on the NIMH website at <http://www.nimh.nih.gov/health/topics/psychotherapies/index.shtml>.

## Electroconvulsive therapy and other brain stimulation therapies

For cases in which medication and/or psychotherapy does not help relieve a person’s treatment-resistant depression, electroconvulsive therapy (ECT) may be useful. ECT, formerly known as “shock therapy,” once had a bad reputation. But in recent years, it has greatly improved and can provide relief for people with severe depression who have not been able to feel better with other treatments.

Before ECT begins, a patient is put under brief anesthesia and given a muscle relaxant. He or she sleeps through the treatment and does not consciously feel the electrical impulses. Within 1 hour after the treatment session, which takes only a few minutes, the patient is awake and alert.



Now I’m seeing the specialist on a regular basis for “talk therapy,” which helps me learn ways to deal with this illness in my everyday life, and I’m taking medicine for depression.

A person typically will undergo ECT several times a week, and often will need to take an antidepressant or other medication along with the ECT treatments. Although some people will need only a few courses of ECT, others may need maintenance ECT—usually once a week at first, then gradually decreasing to monthly treatments. Ongoing NIMH-supported ECT research is aimed at developing personalized maintenance ECT schedules.

ECT may cause some side effects, including confusion, disorientation, and memory loss. Usually these side effects are short-term, but sometimes they can linger. Newer methods of administering the treatment have reduced the memory loss and other cognitive difficulties associated with ECT. Research has found that after 1 year of ECT treatments, most patients showed no adverse cognitive effects.<sup>32</sup>

Nevertheless, patients always provide informed consent before receiving ECT, ensuring that they understand the potential benefits and risks of the treatment.

Other more recently introduced types of brain stimulation therapies used to treat severe depression include vagus nerve stimulation (VNS), and repetitive transcranial magnetic stimulation (rTMS). These methods are not yet commonly used, but research has suggested that they show promise.

More information on ECT, VNS, rTMS and other brain stimulation therapies is available on the NIMH website at <http://www.nimh.nih.gov/health/topics/brain-stimulation-therapies/brain-stimulation-therapies.shtml>.

*The National Institute of Mental Health*

*funds cutting-edge research*

*into this debilitating disorder.*

## How can I help a loved one who is depressed?

If you know someone who is depressed, it affects you too. The most important thing you can do is help your friend or relative get a diagnosis and treatment. You may need to make an appointment and go with him or her to see the doctor. Encourage your loved one to stay in treatment, or to seek different treatment if no improvement occurs after 6 to 8 weeks.

### **TO HELP YOUR FRIEND OR RELATIVE**

*Offer emotional support, understanding, patience, and encouragement.*

*Talk to him or her, and listen carefully.*

*Never dismiss feelings, but point out realities and offer hope.*

*Never ignore comments about suicide, and report them to your loved one's therapist or doctor.*

*Invite your loved one out for walks, outings and other activities. Keep trying if he or she declines, but don't push him or her to take on too much too soon.*

*Provide assistance in getting to the doctor's appointments.*

*Remind your loved one that with time and treatment, the depression will lift.*

## How can I help myself if I am depressed?

If you have depression, you may feel exhausted, helpless, and hopeless. It may be extremely difficult to take any action to help yourself. But as you begin to recognize your depression and begin treatment, you will start to feel better.

### TO HELP YOURSELF

*Do not wait too long to get evaluated or treated. There is research showing the longer one waits, the greater the impairment can be down the road. Try to see a professional as soon as possible.*

*Try to be active and exercise. Go to a movie, a ball game, or another event or activity that you once enjoyed.*

*Set realistic goals for yourself.*

*Break up large tasks into small ones, set some priorities and do what you can as you can.*

*Try to spend time with other people and confide in a trusted friend or relative. Try not to isolate yourself, and let others help you.*

*Expect your mood to improve gradually, not immediately. Do not expect to suddenly “snap out of” your depression. Often during treatment for depression, sleep and appetite will begin to improve before your depressed mood lifts.*

*Postpone important decisions, such as getting married or divorced or changing jobs, until you feel better. Discuss decisions with others who know you well and have a more objective view of your situation.*

*Remember that positive thinking will replace negative thoughts as your depression responds to treatment.*

*Continue to educate yourself about depression.*



*Everything didn't get better overnight, but I find myself more able to enjoy life and my children.*

## Where can I go for help?

If you are unsure where to go for help, ask your family doctor. Others who can help are listed below.

### **MENTAL HEALTH RESOURCES**

*Mental health specialists, such as psychiatrists, psychologists, social workers, or mental health counselors*

*Health maintenance organizations*

*Community mental health centers*

*Hospital psychiatry departments and outpatient clinics*

*Mental health programs at universities or medical schools*

*State hospital outpatient clinics*

*Family services, social agencies, or clergy*

*Peer support groups*

*Private clinics and facilities*

*Employee assistance programs*

*Local medical and/or psychiatric societies*

*You can also check the phone book under “mental health,” “health,” “social services,” “hotlines,” or “physicians” for phone numbers and addresses. An emergency room doctor also can provide temporary help and can tell you where and how to get further help.*

## What if I or someone I know is in crisis?

If you are thinking about harming yourself, or know someone who is, tell someone who can help immediately.

- Do not leave your friend or relative alone, and do not isolate yourself.
- Call your doctor.
- Call 911 or go to a hospital emergency room to get immediate help, or ask a friend or family member to help you do these things.
- Call the toll-free, 24-hour hotline of the National Suicide Prevention Lifeline at 1-800-273-TALK (1-800-273-8255); TTY: 1-800-799-4TTY (4889) to talk to a trained counselor.

## Citations

1. Altshuler LL, Hendrich V, Cohen LS. Course of mood and anxiety disorders during pregnancy and the postpartum period. *Journal of Clinical Psychiatry*, 1998; 59:29.
2. Rohan KJ, Lindsey KT, Roecklein KA, Lacy TJ. Cognitive-behavioral therapy, light therapy and their combination in treating seasonal affective disorder. *Journal of Affective Disorders*, 2004; 80:273–283.
3. Regier DA, Rae DS, Narrow WE, Kaebler CT, Schatzberg AF. Prevalence of anxiety disorders and their comorbidity with mood and addictive disorders. *British Journal of Psychiatry*, 1998; 173(Suppl. 34):24–28.
4. Devane CL, Chiao E, Franklin M, Kruep EJ. Anxiety disorders in the 21st century: status, challenges, opportunities, and comorbidity with depression. *American Journal of Managed Care*, 2005 Oct; 11(Suppl. 12):S344–353.
5. Shalev AY, Freedman S, Perry T, Brandes D, Sahar T, Orr SP, Pitman RK. Prospective study of posttraumatic stress disorder and depression following trauma. *American Journal of Psychiatry*, 1998; 155(5):630–637.
6. Conway KP, Compton W, Stinson FS, Grant BF. Lifetime comorbidity of DSM-IV mood and anxiety disorders and specific drug use disorders: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry*, 2006 Feb; 67(2):247–257.
7. Cassano P, Fava M. Depression and public health, an overview. *Journal of Psychosomatic Research*, 2002; 53:849–857.
8. Katon W, Ciechanowski P. Impact of major depression on chronic medical illness. *Journal of Psychosomatic Research*, 2002; 53:859–863.
9. Tsuang MT, Faraone SV. *The genetics of mood disorders*. Baltimore, MD: Johns Hopkins University Press, 1990.
10. Tsuang MT, Bar JL, Stone WS, Faraone SV. Gene-environment interactions in mental disorders. *World Psychiatry*, 2004 June; 3(2):73–83.
11. Eskandari F, Martinez PE, Torvik S, Phillips TM, Sternberg EM, Mistry S, Ronsaville D, Wesley R, Toomey C, Sebring NG, Reynolds JC, Blackman MR, Calis KA, Gold PW, Cizza G, for the POWER Study Group. Low bone mass in premenopausal women with depression. *Archives of Internal Medicine*, 2007 Nov 26; 167(21):2329–2336.
12. Rubinow DR, Schmidt PJ, Roca CA. Estrogen-serotonin interactions: implications for affective regulation. *Biological Psychiatry*, 1998; 44(9):839–850.
13. Pollack W. Mourning, melancholia and masculinity: recognizing and treating depression in men. In: Pollack W, Levant R, eds. *New Psychotherapy for Men*. New York: Wiley, 1998; 147–166.
14. Cochran SV, Rabinowitz FE. *Men and Depression: clinical and empirical perspectives*. San Diego: Academic Press, 2000.
15. Kochanek KD, Murphy SL, Anderson RN, Scott C. Deaths: final data for 2002. *National Vital Statistics Reports*; 53(5). Hyattsville, MD: National Center for Health Statistics, 2004.
16. Shear K, Frank E, Houck PR, Reynolds CF. Treatment of complicated grief: a randomized controlled trial. *Journal of the American Medical Association*. 2005; 293:2601–2608.
17. Gallo JJ, Rabins PV. Depression without sadness: alternative presentations of depression in late life. *American Family Physician*, 1999; 60(3):820–826.
18. Krishnan KRR, Taylor W, et al. Clinical characteristics of magnetic resonance imaging-defined subcortical ischemic depression. *Biological Psychiatry*, 2004; 55:390–397.

19. Luoma JB, Pearson JL, Martin CE. Contact with mental health and primary care prior to suicide: a review of the evidence. *American Journal of Psychiatry*, 2002; 159:909–16.
20. Little JT, Reynolds CF III, Dew MA, Frank E, Begley AE, Miller MD, Cornes C, Mazumdar S, Perel JM, Kupfer DJ. How common is resistance to treatment in recurrent, nonpsychotic geriatric depression? *American Journal of Psychiatry*, 1998; 155(8):1035–1038.
21. Reynolds CF III, Frank E, Perel JM, Imber SD, Cornes C, Miller MD, Mazumdar S, Houck PR, Dew MA, Stack JA, Pollock BG, Kupfer DJ. Nortriptyline and interpersonal psychotherapy as maintenance therapies for recurrent major depression: a randomized controlled trial in patients older than 59 years. *Journal of the American Medical Association*, 1999; 281(1):39–45.
22. Lebowitz BD, Pearson JL, Schneider LS, Reynolds CF, Alexopoulos GS, Bruce MI, Conwell Y, Katz IR, Meyers BS, Morrison MF, Mossey J, Niederehe G, Parmelee P. Diagnosis and treatment of depression in late life: consensus statement update. *Journal of the American Medical Association*, 1997; 278(14):1186–1190.
23. Reynolds CF III, Dew MA, Pollock BG, Mulsant BH, Frank E, Miller MD, Houck PR, Mazumdar S, Butters MA, Stack JA, Schlernitzauer MA, Whyte EM, Gildengers A, Karp J, Lenze E, Szanto K, Bensasi S, Kupfer DJ. Maintenance treatment of major depression in old age. *New England Journal of Medicine*, 2006 Mar 16; 354(11):1130–1138.
24. Weissman MM, Wolk S, Goldstein RB, Moreau D, Adams P, Greenwald S, Klier CM, Ryan ND, Dahl RE, Wichramaratne P. Depressed adolescents grown up. *Journal of the American Medical Association*, 1999; 281(18):1701–1713.
25. Cyranowski JM, Frank E, Young E, Shear MK. Adolescent onset of the gender difference in lifetime rates of major depression. *Archives of General Psychiatry*, 2000; 57:21–27.
26. Shaffer D, Gould MS, Fisher P, Trautman P, Moreau D, Kleinman M, Flory M. Psychiatric diagnosis in child and adolescent suicide. *Archives of General Psychiatry*, 1996; 53(4):339–348.
27. March J, Silva S, Petrycki S, Curry J, Wells K, Fairbank J, Burns B, Domino M, McNulty S, Vitiello B, Severe J. Treatment for Adolescents with Depression Study (TADS) team. Fluoxetine, cognitive-behavioral therapy, and their combination for adolescents with depression: Treatment for Adolescents with Depression Study (TADS) randomized controlled trial. *Journal of the American Medical Association*, 2004; 292(7):807–820.
28. Rush JA, Trivedi MH, Wisniewski SR, Stewart JW, Nierenberg AA, Thase ME, Ritz L, Biggs MM, Warden D, Luther JF, Shores-Wilson K, Niederehe G, Fava M. Bupropion-SR, Sertraline, or Venlafaxine-XR after failure of SSRIs for depression. *New England Journal of Medicine*, 2006 Mar 23; 354(12):1231–1242.
29. Trivedi MH, Fava M, Wisniewski SR, Thase ME, Quitkin F, Warden D, Ritz L, Nierenberg AA, Lebowitz BD, Biggs MM, Luther JF, Shores-Wilson K, Rush JA. Medication augmentation after the failure of SSRIs for depression. *New England Journal of Medicine*, 2006 Mar 23; 354(12):1243–1252.
30. Bridge JA, Iyengar S, Salary CB, Barbe RP, Birmaher B, Pincus HA, Ren L, Brent DA. Clinical response and risk for reported suicidal ideation and suicide attempts in pediatric antidepressant treatment: a meta-analysis of randomized controlled trials. *Journal of the American Medical Association*, 2007; 297(15):1683–1696.
31. Hypericum Depression Trial Study Group. Effect of Hypericum perforatum (St. John's wort) in major depressive disorder: a randomized controlled trial. *Journal of the American Medical Association*, 2002; 287(14):1807–1814.
32. Lisanby SH. Electroconvulsive therapy for depression. *New England Journal of Medicine*. 2007; 357:1939–1945.



## For More Information on Depression

Visit the National Library of Medicine's:  
MedlinePlus:

**<http://www.nlm.nih.gov/medlineplus>**

En Español:

**<http://medlineplus.gov/spanish>**

For information on clinical trials for depression:

**<http://www.nlm.nih.gov/studies/index.cfm>**

National Library of Medicine Clinical Trials Database:

**<http://www.clinicaltrials.gov>**

Information from NIMH is available in multiple formats. You can browse online, download documents in PDF, and order paper brochures through the mail. If you would like to have NIMH publications, you can order them online at **<http://www.nlm.nih.gov>**. If you do not have Internet access and wish to have information that supplements this publication, please contact the NIMH Information Resource Center at the numbers listed below.

Please check the NIMH website at **<http://www.nlm.nih.gov>** for the most up-to-date information on this topic.

### **National Institute of Mental Health**

Science Writing, Press & Dissemination Branch

600I Executive Boulevard

Room 8184, MSC 9663

Bethesda, MD 20892-9663

Phone: 301-443-4513 or

1-866-615-NIMH (6464) toll-free

TTY: 301-443-8431 or

1-866-415-8051 toll-free

FAX: 301-443-4279

E-mail: **[nimhinfo@nih.gov](mailto:nimhinfo@nih.gov)**

Website: **<http://www.nlm.nih.gov>**

## Reprints

This publication is in the public domain and may be reproduced or copied without permission from NIMH. We encourage you to reproduce it and use it in your efforts to improve public health. Citation of the National Institute of Mental Health as a source is appreciated. However, using government materials inappropriately can raise legal or ethical concerns, so we ask you to use these guidelines:

- NIMH does not endorse or recommend any commercial products, processes, or services, and our publications may not be used for advertising or endorsement purposes.
- NIMH does not provide specific medical advice or treatment recommendations or referrals; our materials may not be used in a manner that has the appearance of such information.
- NIMH requests that non-Federal organizations not alter our publications in ways that will jeopardize the integrity and “brand” when using the publication.
- Addition of non-Federal Government logos and website links may not have the appearance of NIMH endorsement of any specific commercial products or services or medical treatments or services.
- Images used in publications are of models and are used for illustrative purposes only. Use of some images is restricted.

If you have questions regarding these guidelines and use of NIMH publications, please contact the NIMH Information Resource Center at 1-866-615-6464 or e-mail at [nimhinfo@nih.gov](mailto:nimhinfo@nih.gov).

**NIMH**

National Institute  
of Mental Health



U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES  
National Institutes of Health  
NIH Publication No. 11-3561  
Revised 2011

### What is dual diagnosis?

Dual diagnosis is a term used to describe people with mental illness who also have problems with drugs and/or alcohol. The relationship between the two is complex, and the treatment of people with co-occurring substance abuse (or dependence) and mental illness is more complicated than the treatment of either condition alone. This is unfortunately a common situation—many people with mental illness have ongoing substance abuse problems, and many people who abuse drugs and alcohol also experience mental illness.

Certain groups of people with mental illness (e.g., males, individuals of lower socioeconomic status, military veterans and people with more general medical illnesses) are at increased risk of abusing drugs and alcohol. Recent scientific studies have suggested that nearly one-third of people with all mental illnesses and approximately one-half of people with severe mental illnesses (including bipolar disorder and schizophrenia) also experience substance abuse. Conversely, more than one-third of all alcohol abusers and more than one-half of all drug abusers are also battling mental illness.

### What is the relationship between substance use and mental illness?

The relationship between mental illness and substance abuse/dependency is complex. Drugs and alcohol can be a form of *self-medication* for people with mental illness experiencing conditions such as anxiety or depression. Unfortunately, while drugs and alcohol may feel good in the moment, abuse of these substances does not treat the underlying condition and, almost without exception, makes it worse. Drugs and alcohol can worsen underlying mental illnesses during both acute intoxication and during withdrawal from a substance. Additionally, drugs and alcohol can cause a person without mental illness to experience the onset of symptoms for the first time.

Abuse of drugs and alcohol always results in a worse prognosis for a person with mental illness. Active users are less likely to follow through with their treatment plans. They are more likely to experience severe medical complications and early death. People with dual diagnosis are also at increased risk of impulsive and violent acts. Those who abuse drugs and alcohol are more likely to both attempt suicide and to die from their suicide attempts.

Individuals with dual diagnosis are less likely to achieve lasting sobriety. They may be more likely to experience severe complications of their substance abuse, to end up in legal trouble from their substance use and to become physically dependent on their substance of choice.

### What treatments are available for individuals with dual diagnosis?

Treatment of individuals with dual diagnosis is also complicated. Of primary importance is addressing any life-threatening complications of intoxication. The following situations would require immediate care in a hospital: severe cases of alcohol intoxication; heart problems or stroke caused by use of amphetamines, crack, cocaine and other drugs; overdose on benzodiazapines (e.g., diazepam [valium], clonazepam [klonopin]), opiates (e.g., oxycodone, oxycontin) and other “downers.” Untreated, any of these conditions can lead to death.

Drug and alcohol withdrawal can also lead to medical emergencies requiring immediate treatment. Alcohol withdrawal can result in heart problems (e.g., arrhythmias), seizures or *delirium tremens* (an acute delirious state), all which can be potentially fatal. Benzodiazapine withdrawal can result in tremors (“shakes”), seizures and potentially death. Opiate withdrawal is not thought to be life-threatening in most cases but can be a very traumatic and painful experience.

Many people seek assistance in going through the process of stopping their drug and alcohol abuse. This may include inpatient detoxification involving admission to a hospital—either a general hospital or a detoxification facility—and treatment with the appropriate medications to avoid serious complications of acute drug and alcohol withdrawal.

Multiple scientific studies have shown that psychiatric treatments are more effective in people who are not actively abusing drugs and alcohol. Many options exist for people who are newly sober or who are trying to avoid relapse on drugs and alcohol. These can include inpatient rehabilitation centers or supportive housing. Some people find therapy to be a helpful part of maintaining their sobriety. This can include individual therapy (e.g., cognitive behavioral therapy) as well as self-help groups such as Alcoholics Anonymous, Narcotics Anonymous or Smart Recovery.

Certain medications to help maintain sobriety have been safely tested in multiple studies. For alcoholism, available medications include disulfiram (*Antabuse*), acamprosate (*Campral*) and naltrexone (*Revia*). For opiate abuse, available medications include naltrexone (*Revia*, *Vivitrol*), methadone and buprenorphine (*Subutex*, *Suboxone*). Given how complicated these choices may be, it is necessary for any individual with dual diagnosis and their loved ones to discuss medication management strategies with their doctors.

Families, friends and others can be most helpful in providing empathic and non-judgmental support of their loved one. This can be critically important as a significant majority of people will relapse into drug and alcohol abuse at some point in their lives, even if they are eventually able to achieve long-lasting sobriety. With this support, the proper medical treatment and effective psychosocial treatments, many people with dual diagnosis will be able to actively participate in their journey to recovery.

*Reviewed by Ken Duckworth, M.D., and Jacob L. Freedman, M.D., January 2013*

---

## Obsessive-compulsive disorder

A woman visits her dermatologist, complaining of extremely dry skin and seldom feeling clean. She showers for two hours every day.

A lawyer insists on making coffee several times each day. His colleagues do not realize that he lives in fear that the coffee will be poisoned, and he feels compelled to pour most of it down the drain. The lawyer is so obsessed with these thoughts that he spends 12 hours a day at work -- four of them worrying about contaminated coffee.

A man cannot bear to throw anything away. Junk mail, old newspapers, empty milk cartons all "could contain something valuable that might be useful someday." If he throws things away, "something terrible will happen." He hoards so much clutter that he can no longer walk through his house. Insisting that nothing be thrown away, he moves to another house where he continues to hoard.

A 10 year old girl keeps apologizing for "disturbing" her class. She feels that she is too restless and is clearing her throat too loudly. Her teachers are puzzled and over time become annoyed at her repeated apologies since they did not notice any sounds or movements. She is also preoccupied with "being good all the time".

These people suffer obsessive-compulsive disorder (OCD). The National Institute of Mental Health estimates that more than 2 percent of the U.S. population, or nearly one out of every 40 people, will suffer from OCD at some point in their lives. The disorder is two to three times more common than schizophrenia and bipolar disorder.

### What is Obsessive-compulsive disorder?

**Obsessions** are intrusive, irrational thoughts -- unwanted ideas or impulses that repeatedly well up in a person's mind. Again and again, the person experiences disturbing thoughts, such as "My hands must be contaminated; I must wash them"; "I may have left the gas stove on"; "I am going to injure my child." On one level, the sufferer knows these obsessive thoughts are irrational. But on another level, he or she fears these thoughts might be true. Trying to avoid such thoughts creates great anxiety.

**Compulsions** are repetitive rituals such as handwashing, counting, checking, hoarding, or arranging. An individual repeats these actions, perhaps feeling momentary relief, but without feeling satisfaction or a sense of completion. People with OCD feel they must perform these compulsive rituals or something bad will happen.

Most people at one time or another experience obsessive thoughts or compulsive behaviors. Obsessive-compulsive disorder occurs when an individual experiences obsessions and compulsions for more than an hour each day, in a way that interferes with his or her life.

OCD is often described as "a disease of doubt." Sufferers experience "pathological doubt" because they are unable to distinguish between what is possible, what is probable, and what is unlikely to happen.

### Who gets OCD?

People from all walks of life can get OCD. It strikes people of all social and ethnic groups and both males and females. Symptoms typically begin during childhood, the teenage years or young adulthood.

### What causes OCD?

A large body of scientific evidence suggests that OCD results from a chemical imbalance in the brain. For years, mental health professionals incorrectly assumed OCD resulted from bad parenting or personality defects. This theory has been disproven over the last 20 years. OCD symptoms are not relieved by psychoanalysis or other forms of "talk therapy," but there is evidence that behavior therapy can be effective, alone or in combination with medication. People with OCD can often say "why" they have obsessive thoughts or why they behave compulsively. But the thoughts and the behavior continue.

People whose brains are injured sometimes develop OCD, which suggests it is a physical condition. If a placebo is given to people who are depressed or who experience panic attacks, 40 percent will say they feel better. If a placebo is given to people who experience obsessive-compulsive disorder, only about two percent say they feel better. This also suggests a physical condition.

Clinical researchers have implicated certain brain regions in OCD. They have discovered a strong link between OCD and a brain chemical called serotonin. Serotonin is a neurotransmitter that helps nerve cells communicate.

Scientists have also observed that people with OCD have increased metabolism in the basal ganglia and the frontal lobes

of the brain. This, scientists believe, causes repetitive movements, rigid thinking, and lack of spontaneity. Successful treatment with medication or behavior therapy produces a decrease in the over activity of this brain circuitry. People with OCD often have high levels of the hormone vasopressin.

In layperson's terms, something in the brain is stuck, like a broken record. Judith Rapoport, M.D., describes it in her book, *The Boy Who Couldn't Stop Washing*, as "grooming behaviors gone wild."

### **How do people with OCD typically react to their disorder?**

People with OCD generally attempt to hide their problem rather than seek help. Often they are remarkably successful in concealing their obsessive-compulsive symptoms from friends and co-workers. An unfortunate consequence of this secrecy is that people with OCD generally do not receive professional help until years after the onset of their disease. By that time, the obsessive-compulsive rituals may be deeply ingrained and very difficult to change.

### **How long does OCD last?**

OCD will not go away by itself, so it is important to seek treatment. Although symptoms may become less severe from time to time, OCD is a chronic disease. Fortunately, effective treatments are available that make life with OCD much easier to manage.

### **Is age a factor in OCD?**

OCD usually starts at an early age, often before adolescence. It may be mistaken at first for autism, pervasive developmental disorder, or Tourette's syndrome, a disorder that may include obsessive doubting and compulsive touching as symptoms.

Like depression, OCD tends to worsen as the person grows older, if left untreated. Scientists hope, however, that when the OCD is treated while the person is still young, the symptoms will not get worse with time.

### **What are other examples of behaviors typical of people who suffer from OCD?**

People who do the following may have OCD:

- repeatedly check things, perhaps dozens of times, before feeling secure enough to go to sleep or leave the house. Is the stove off? Is the door locked? Is the alarm set?

- fear they will harm others. Example: A man's car hits a pothole on a city street and he fears it was actually a body.

- feel dirty and contaminated. Example: A woman is fearful of touching her baby because she might contaminate the child.

- constantly arrange and order things. Example: A child can't go to sleep unless he lines up all his shoes correctly.

- are excessively concerned with body imperfections -- insist on numerous plastic surgeries, or spend many, many hours a day body-building.

- are ruled by numbers, believing that certain numbers represent good and others represent evil.

- are excessively concerned with sin or blasphemy.

### **Is OCD commonly recognized by professionals?**

Not nearly commonly enough. OCD is often misdiagnosed, and it is often underdiagnosed. Many people have dual disorders of OCD and schizophrenia, or OCD and bipolar disorder, but the OCD component is not diagnosed or treated. In children, parents often are aware of some anxiety or depression but not of the underlying OCD. Researchers believe OCD, anxiety disorders, Tourette's, and eating disorders such as anorexia and bulimia can be triggered by some of the same chemical malfunctioning of the brain.

### **Is heredity a factor in OCD?**

Yes. Heredity appears to be a strong factor. If you have OCD, there's a 25-percent chance that one of your immediate family members will have it. It definitely seems to run in families.

### **Can OCD be effectively treated?**

Yes, with medication and behavior therapy. Both affect brain chemistry, which in turn affects behavior. Medication can regulate serotonin, reducing obsessive thoughts and compulsive behaviors.

**Anafranil (clomipramine):** A *tricyclic antidepressant*, Anafranil has been shown to be effective in treating obsessions and compulsions. The most commonly reported side effects of this medication are dry mouth, constipation, nausea, increased appetite, weight gain, sleepiness, fatigue, tremor, dizziness, nervousness, sweating, visual changes, and sexual dysfunction. There is also a risk of seizures, thought to be dose-related. People with a history of seizures should not take this medication. Anafranil should also not be taken at the same time as a *monoamine oxidase inhibitor (MAOI)*.

Many of the antidepressant medications known as *selective serotonin reuptake inhibitors (SSRIs)* have also proven effective in treating the symptoms associated with OCD. The SSRIs most commonly prescribed for OCD are Luvox (fluvoxamine), Paxil (paroxetine), Prozac (fluoxetine), and Zoloft (sertraline).

**Luvox (fluvoxamine):** Common side effects of this medication include dry mouth, constipation, nausea, sleepiness, insomnia, nervousness, dizziness, headache, agitation, weakness, and delayed ejaculation.

**Paxil (paroxetine):** Side effects most associated with this medication include dry mouth, constipation, nausea, decreased appetite, sleepiness, insomnia, tremor, dizziness, nervousness, weakness, sweating, and sexual dysfunction.

**Prozac (fluoxetine):** Dry mouth, nausea, diarrhea, sleepiness, insomnia, tremor, nervousness, headache, weakness, sweating, rash, and sexual dysfunction are among the more common side effects associated with this drug.

**Zoloft (sertraline):** Among the side effects most commonly reported while taking Zoloft are dry mouth, nausea, diarrhea, constipation, sleepiness, insomnia, tremor, dizziness, agitation, sweating, and sexual dysfunction.

**Celexa (Citalopram)** Side effects may include dry mouth, nausea, or drowsiness .

SSRIs should **never** be taken at the same time as MAOIs.

#### **How long should an individual take medication before judging its effectiveness?**

Some physicians make the mistake of prescribing a medication for only three or four weeks. That really isn't long enough. Medication should be tried consistently for 10 to 12 weeks before its effectiveness can be judged.

#### **What is behavior therapy, and can it effectively relieve symptoms of OCD?**

Behavior therapy is not traditional psychotherapy. It is "exposure and response prevention," and it is effective for many people with OCD. Consumers are deliberately exposed to a feared object or idea, either directly or by imagination, and are then discouraged or prevented from carrying out the usual compulsive response. For example, a compulsive hand-washer may be urged to touch an object he or she believes is contaminated and denied the opportunity to wash for several hours. When the treatment works well, the consumer gradually experiences less anxiety from the obsessive thoughts and becomes able to refrain from the compulsive actions for extended periods of time.

Several studies suggest that medication and behavior therapy are equally effective in alleviating symptoms of OCD. About half of the consumers with this disorder improve substantially with behavior therapy; the rest improve moderately.

#### **Will OCD symptoms go away completely with medication and behavior therapy?**

Response to treatment varies from person to person. Most people treated with effective medications find their symptoms reduced by about 40 percent to 50 percent. That can often be enough to change their lives, to transform them into functioning individuals.

A few consumers find that neither treatment produces significant change, and a small number of people are fortunate to go into total remission when treated with effective medication and/or behavior therapy.

*Reviewed by Judith Rapoport, MD May 2003*





## Panic Disorder

### What's happening?

- Imagine you've just stepped into an elevator and suddenly your heart races, your chest aches, you break out in a cold sweat and feel as if the elevator is about to crash to the ground. What's happening?
- Imagine you are driving home from the grocery store and suddenly things seem to be out of control. You feel hot flashes, things around you blur, you can't tell where you are, and you feel as if you're dying. What's happening?

What's happening is a panic attack, an uncontrollable panic response to ordinary, nonthreatening situations. Panic attacks are often an indication that a person has panic disorder.

### What is panic disorder?

A person who experiences recurrent panic attacks, at least one of which leads to at least a month of increased anxiety or avoidant behavior, is said to have panic disorder. Panic disorder may also be indicated if a person experiences fewer than four panic episodes but has recurrent or constant fears of having another panic attack.

Doctors often try to rule out every other possible alternative before diagnosing panic disorder. To be diagnosed as having panic disorder, a person must experience at least four of the following symptoms during a panic attack: sweating; hot or cold flashes; choking or smothering sensations; racing heart; labored breathing; trembling; chest pains; faintness; numbness; nausea; disorientation; or feelings of dying, losing control, or losing one's mind. Panic attacks typically last about 10 minutes, but may be a few minutes shorter or longer. During the attack, the physical and emotional symptoms increase quickly in a crescendo-like way and then subside. A person may feel anxious and jittery for many hours after experiencing a panic attack.

Panic attacks can occur in anyone. Chemical or hormonal imbalances, drugs or alcohol, stress, or other situational events can cause panic attacks, which are often mistaken for heart attacks, heart disease, or respiratory problems.

### What are phobias?

Phobias are irrational, involuntary, and inappropriate fears of (or responses to) ordinary situations or things. People who have phobias can experience panic attacks when confronted with the situation or object about which they feel phobic. A category of symptoms called phobic disorder falls within the broader field of anxiety disorders.

### Phobias are divided into three types:

**Specific (simple) phobia:** an unreasonable fear of specific circumstances or objects, such as traffic jams or snakes.

**Social phobia:** extreme fear of looking foolish or stupid or unacceptable in public that causes people to avoid public occasions or areas.

**Agoraphobia:** an intense fear of feeling trapped in a situation, especially in public places, combined with an overwhelming fear of having a panic attack in unfamiliar surroundings. This word means, literally (in Greek), "fear of the marketplace."

Phobias are usually chronic (long-term), distressing disorders that keep people from ordinary activities and places. They can lead to other serious problems, such as depression. In fact, at least half of those who suffer with phobias and panic disorders also have depression. Alcoholism, loss of productivity, secretiveness, and feelings of shame and low self-esteem also occur with this illness. Some people are unable to go anywhere or do anything outside their homes without the help of others they trust.

### What does it mean to "fear the fear"?

Many people with phobias or panic disorder "fear the fear," or worry about when the next attack is coming. The fear of more panic attacks can lead to a very limited life. People who have panic attacks often begin to avoid the things they think triggered the panic attack and then stop doing the things they used to do or the places they used to go.

### Am I the only one?

It is estimated that 2 percent to 5 percent of Americans have panic disorder, so you are not alone if you, too have these symptoms. Usually panic disorder first strikes people in their early twenties. Severe stress, such as the death of a loved one, can bring on panic attacks.

A 1986 study by the National Institute of Mental Health showed that 5.1 percent to 12.5 percent of people surveyed had experienced phobias in the past six months. The study estimated that 24 million Americans will experience some phobias in their lifetimes.

Phobias are the leading psychiatric disorders among women of all ages. One survey showed that 4.9 percent of women and 1.8 percent of men have panic disorder, agoraphobia, or any other phobias.

### **What causes panic disorder?**

No one really knows what causes panic disorder, but several ideas are being researched. Panic disorder seems to run in families, which suggests that it has at least some genetic basis. Some theories suggest that panic disorder is part of a more generalized anxiety in the people who have panic attacks or that severe separation anxiety can develop into panic disorder or phobias, most often agoraphobia.

*Biological theories* point to possible physical defects in a person's autonomic (or automatic) nervous system. General hypersensitivity in the nervous system, increased arousal, or a sudden chemical imbalance can trigger panic attacks. Caffeine, alcohol, and several other agents can also trigger these symptoms.

### **Is panic disorder treatable?**

Recovery from panic disorder can be achieved either by taking medication or by cognitive behavioral therapy that is specific for panic disorder. Studies suggest that medication and cognitive behavioral therapy are about equally effective and the decision about which to take depends largely on the preference of the person with the panic disorder. Medication probably works a bit faster, but has more adverse side effects than cognitive behavioral therapy. Also, when successful treatment is finished, people who have had cognitive behavioral therapy tend to remain well longer than people who have taken medication. There is some evidence that the combination of cognitive behavioral therapy and medication may offer some benefits over either one alone.

**Cognitive therapy** is used to help people think and behave appropriately. Patients learn to make the feared object or situation less threatening as they are exposed to, and slowly get used to, whatever is so frightening to them. Family members and friends help a great deal in this process when they are supportive and encouraging.

**Medication** is most effective when it is used as part of an overall treatment plan that includes supportive therapy. Antidepressants and anti-anxiety medications are the most successful medications for this disorder. Ask your doctor about these medications or others that may help you.

Healthy living habits may also help people overcome panic disorder. Exercise, a proper and balanced diet, moderate use of caffeine and alcohol, and learning how to reduce stress are all important.

Peer support is a vital part of overcoming panic disorder. Family and friends can play a significant role in the treatment process and should be informed of the treatment plan and of the ways they can be most helpful.

*Reviewed by Jack Gorman, MD May 2003*

## What are specific phobias?

A specific phobia is characterized by an irrational fear of a particular object or situation. Specific phobias have two main components. The first is a strong and consistent fear of an object or situation that the individual realizes poses no actual threat. Secondly, this fear results in the intentional avoidance of the object or situation, causing difficulties in the individual's life as decisions are made in order to avoid the feared stimulus.

In many cases, the phobic object is something that might be dangerous or unsafe in certain situations. Many people without specific phobias may also avoid these objects to some degree; however, the difference in a specific phobia is the intensity of the fear response and the level of dysfunction that it causes in a person's life. Furthermore, people with specific phobias often experience physical symptoms that can include shortness of breath, nausea or heart palpitations. In severe cases, they may experience panic attacks that can leave them feeling embarrassed, worthless or incapacitated. They may also experience difficulties at work, school or in their social lives.

## What are most common specific phobias?

The *DSM-IV-TR* describes five subtypes of specific phobias as listed below:

- Fear of animals—this can include pets, wild animals and insects.
- Fear of natural environment—this can include natural disasters as well as fear of being in unstable places within the environment.
- Fear of blood/injections/injury—this can include fear of seeing the blood of other people as well as fear of experiencing this stimuli oneself.
- Fear of situations—this can include fear of traveling by different means as well as claustrophobia (fear of being in enclosed places).
- Other Fears—this can include fear of dying by illness, fear of incontinence and fear of other bodily sensations.

## Who gets a specific phobia?

Specific phobias often begin in childhood and can last throughout one's lifetime. Some estimates suggest that up to 15 to 20 percent of people experience symptoms of specific phobia at some time their lives. Specific phobias affect people of all ages, races, genders, cultures and socioeconomic status, although it is thought that younger people with less income are more likely to be affected. Many studies suggest that women are more likely to experience specific phobias, although men may be more likely to seek treatment.

Specific phobias often occur in people with other mental illnesses including anxiety disorders and mood disorders. As drugs and alcohol can often be used as a "self-

medication” to decrease the fear or anxiety associated with their illness, people with specific phobias are at increased risk of substance abuse and substance dependency.

Scientists have not identified a single gene that causes specific phobia; however, individuals with a parent or close relative who experienced this illness are more likely to develop it themselves. Scientific studies have demonstrated that people with specific phobias have changes in their brain functioning. The amygdala, a specific region of the brain associated with the fight-or-flight response, may be a key to further understanding this illness.

### **What are the treatments and prognosis for people with specific phobias?**

Mental health professionals agree that the primary treatment for specific phobias is behavioral therapy. Exposure therapy is a specific kind of behavioral therapy where a person is brought into contact with the feared object or situation. By gradually increasing the level of exposure to the source of fear, the severity of symptoms is decreased in a process called extinction.

Another common treatment is called systematic desensitization. This treatment has many overlaps with traditional exposure therapy but also focuses on using relaxation techniques such as deep breathing and progressive muscle relaxation to help a person cope with the anxiety and stress of the therapeutic process.

In general, medications are not used to treat specific phobia as behavioral therapy is so successful. In some extreme cases or during the initial stages of treatment, medications such as benzodiazapines (e.g., diazepam [Valium], clonazepam [Klonopin], lorazepam [Ativan]) or beta-blockers (e.g., propranolol [Inderal]) may be used. These medications are not long-term or curative treatments for specific phobias, and all medication decisions should be discussed with a doctor.

Unfortunately, many people with specific phobia will not seek treatment for their illness. For people who do not seek treatment, many will continue to experience the disabling symptoms of their illness. In spite of this, a significant percentage still often experience a decrease in the severity of their symptoms over time, and up to 20 percent will experience full recovery. For people seeking treatment, the majority will experience a significant decrease in their symptoms, with many experiencing a near complete resolution of their symptoms.

With proper treatment and the support of their loved ones, most people with specific phobias can expect to live meaningful and productive lives and see a significant decrease in the severity of their symptoms.

*Reviewed by Ken Duckworth, M.D., Jacob Freedman, M.D., and Frederick Kahn, B.S.,  
January 2013*

### What are psychosocial treatments?

Psychosocial treatments—including certain forms of psychotherapy (often called “talk-therapy”) and social and vocational training—are helpful in providing support, education, and guidance to people with mental illnesses and their families. Studies tell us that psychosocial treatments for mental illnesses can help individuals decrease the negative effects of their illnesses and increase their functioning (leading to fewer hospitalizations and less difficulties at home, at school, and at work).

**Individual psychotherapy** involves regularly scheduled sessions between the patient and a mental health professional. The goal of this treatment is to help individuals understand why they are acting and thinking in ways that are troubling or dangerous to themselves (or others). This allows a person to have more control over their behaviors and to change these behaviors when possible. Talk-therapy sessions may focus on a person's current or past problems, experiences, thoughts, feelings or relationships.

**Psychoeducation** involves teaching people about their illnesses and how they are treated. This allows people and their families to recognize signs of relapse in order to get necessary treatment before mental illness worsens or occurs again. Family psychoeducation includes teaching coping strategies and problem-solving skills to families (and friends) of people with mental illnesses to help them deal more effectively with their friends and relatives.

**Self-help and support groups** for people and families dealing with mental illnesses are becoming increasingly common. Although not led by a professional therapist, these groups may be therapeutic because members give each other ongoing support. These groups also are comforting because ill people learn that others have problems similar to theirs: they are not alone in this world with their mental illness.

### What are examples of specific psychotherapies?

Therapists offer many different types of psychotherapy. In general no one type of therapy is necessarily “better” than another type, although certain mental illnesses have been shown to respond better to specific psychotherapies. When deciding which therapy, or therapies, will likely be the most successful treatment option for an individual, a psychotherapist considers the nature of the problem to be treated and the individual's personality, cultural and family background, and personal experiences.

**Interpersonal therapy** focuses on the relationships a person has with others. The goal of interpersonal therapy is, of course, to improve interpersonal skills. The therapist actively teaches individuals to evaluate their interactions with others and to become aware of self-isolation and difficulties getting along with, relating to, or understanding others. He or she

also offers advice and helps individuals make decisions about the best way to deal with other people.

Interpersonal therapy is a psychosocial treatment used most frequently to help people with bipolar disorder, ADHD, depression, eating disorders and generalized anxiety disorder. It is often expected to last for approximately 3-4 months and to target specific symptoms over this time period.

**Cognitive behavioral therapy (CBT)** is a treatment that focuses on the relationship between an individual's thoughts, feelings, and behaviors. A CBT therapist will try to explore the links between the thoughts and emotions that occur prior to disruptive behaviors in people with mental illness. By establishing these connections, individuals learn to identify and change inappropriate or negative thought patterns and as a consequence, can address the behaviors associated with their illness. CBT is often thought of as a "first-line treatment" in many anxiety disorders (including OCD, Panic Disorder, and PTSD).

A type of behavioral therapy known as **exposure therapy** (or exposure and response prevention) is specifically useful for treating obsessive-compulsive disorder (OCD) and posttraumatic stress disorder (PTSD). During exposure therapy, an individual is deliberately exposed to whatever triggers the obsessive thoughts or reaction to a previous traumatic experience under controlled conditions. The individual is then taught techniques to avoid performing the compulsive rituals or to work through the trauma.

**Dialectical behavior therapy (DBT)** was initially developed to treat chronically suicidal individuals with Borderline Personality Disorder (BPD). Over time, DBT has evolved into a treatment for individuals with multiple different disorders, although many people who are treated with DBT have borderline personality disorder (BPD) as a primary diagnosis. DBT combines the basic strategies of behavior therapy with a philosophy that focuses on the idea that 'opposites may really not be opposite when looked at differently.'

**Psychodynamic Psychotherapy** has its fundamental roots in the teachings of Sigmund Freud, Carl Jung, and other psychiatrists who practiced in the early twentieth century. Yet most therapists who offer this treatment are no longer driven by the rigid rules of traditional "psychoanalysis." Psychodynamic psychotherapy is practiced differently by different therapists and will likely vary depending on the needs of their client. There is not as much scientific data supporting the effectiveness of psychodynamic psychotherapy in some illnesses (such as schizophrenia) as opposed to other treatments (including CBT).

*Reviewed by Ken Duckworth, M.D., and Jacob Freedman, M.D., July 2012*

### What is schizoaffective disorder?

Schizoaffective disorder is a serious mental illness that affects about one in 100 people. Schizoaffective disorder as a diagnostic entity has features that resemble both schizophrenia and also serious mood (affective) symptoms. Many of the strategies used to treat both schizophrenia and affective conditions can be employed for this condition. These include antipsychotic and mood stabilizing medications, family involvement, psychosocial strategies, self-care peer support, psychotherapy and integrated care for co-occurring substance abuse (when appropriate).

A person who has schizoaffective disorder will experience delusions, hallucinations, other symptoms that are characteristic of schizophrenia and significant disturbances in their mood (e.g., affective symptoms). According to the *DSM-IV-TR*, people who experience more than two weeks of psychotic symptoms in the absence of severe mood disturbances—and then have symptoms of either depression or bipolar disorder—may have schizoaffective disorder. Schizoaffective disorder is thought to be between the bipolar and schizophrenia diagnoses as it has features of both.

Depressive symptoms associated with schizoaffective disorder can include—but are not limited to—hopelessness, helplessness, guilt, worthlessness, disrupted appetite, disturbed sleep, inability to concentrate, and depressed mood (with or without suicidal thoughts). Manic symptoms associated with schizoaffective disorder can include increased energy, decreased sleep (or decreased need for sleep), distractibility, fast (“pressured”) speech, and increased impulsive behaviors (e.g., sexual activities, drug and alcohol abuse or gambling).

While it is a hot-topic of debate within the mental health field, most experts believe that schizoaffective disorder is a type of chronic mental illness that has psychotic symptoms at the core and with depressive and manic symptoms as a secondary—but equally debilitating—component. Because it consists of a wide range of symptoms, some people may be inappropriately diagnosed with schizoaffective disorder. This is problematic because it can lead to unnecessary treatments, specifically medication-treatment with antipsychotics when they are *not* otherwise indicated.

People who have depression or mania as their primary mental illness may experience symptoms of psychosis (including disorganized speech, disorganized behavior, delusions, or hallucinations) during severe episodes of their mood disorder but will not have these symptoms if their mood disorder is well treated. Sometimes people with other mental illnesses including borderline personality disorder may also be incorrectly diagnosed with schizoaffective disorder. This further underscores how important it is to have regular and complete mental health assessments from one’s doctors, preferably over time so that patterns of what is happening and what works can be fully understood together.

### What treatments are available?

For most people with schizoaffective disorder, treatment will be very similar to treatment of schizophrenia and will include antipsychotic medications to help address symptoms of psychosis. Finding the right type and dose of antipsychotic medication is important and requires collaboration with a doctor. In some cases, people with schizoaffective disorder will be offered treatment with long-acting-injectable (also called *LAI*, *decanoate*) formulations of antipsychotic medications. These FDA approved medications—including haloperidol (Haldol Decanoate), risperidone (Risperdal Consta), paliperidone (Invega Sustenna)—are given in the form of an intramuscular injection (“shot”) approximately once or twice each month and have been shown to decrease the rates of relapse and hospitalization.

Treatments such as cognitive behavioral therapy to target psychotic symptoms, support groups including NAMI’s Family-to-Family to increase family and community support, peer support and connection, and work-and-school rehabilitation, such as social skills training, are very helpful for people with schizoaffective disorder. Maintaining a healthy lifestyle is also of critical importance: the role of good sleep hygiene, regular exercise, and a balanced diet cannot be underestimated. Omega-3 fatty acids (commonly marketed as “Fish Oil”) are an over-the-counter supplement that some may find useful.

Symptoms of depression—in people with schizoaffective disorder—may be treated with antidepressant medications or lithium in addition to antipsychotic medications. People with bipolar symptoms may be treated with mood-stabilizers such as lithium or anti-convulsants, including valproic acid (Depakote), lamotrigine (Lamictal), and carbamazepine (Tegretol), in addition to their antipsychotic medications.

There are some studies that suggest that older (“first-generation,” “typical”) antipsychotic medications are not as effective in controlling the mood symptoms associated with schizoaffective disorder as newer (“second-generation,” “atypical”) antipsychotic medications. Newer antipsychotic medications may be less likely to cause side effects such as tardive dyskinesia but they are more likely to cause weight gain, high cholesterol, and increased blood sugars, which can lead to diabetes. Given how complicated these choices may be, it is necessary for any individual with schizoaffective disorder and their loved ones to discuss medication management strategies with their doctors.

Families, friends, and others can be most helpful in providing empathic and non-judgmental support of their loved one. With this support, the proper medications, and effective psychosocial treatments, many people with schizoaffective disorder will do well and will be able to actively participate in a recovery journey.

*Reviewed by Ken Duckworth, M.D., and Jacob L. Freedman, M.D., November 2012*

---



### What is schizophrenia?

Schizophrenia is a serious mental illness that interferes with a person's ability to think clearly, manage emotions, make decisions and relate to others. Research has linked schizophrenia to changes in brain chemistry and structure. Like diabetes, schizophrenia is a complex, long-term medical illness that affects everybody differently. The course of the illness is unique for each person.

### How is schizophrenia diagnosed?

There is no single laboratory or brain imaging test for schizophrenia. Treatment professionals must rule out multiple factors such as brain tumors, possible medical conditions and other psychiatric diagnoses, such as bipolar disorder.

Individuals with schizophrenia have two or more of the following symptoms occurring persistently. However, delusions or hallucinations alone can often be enough to lead to a diagnosis of schizophrenia.

**Positive symptoms** are also known as “psychotic” symptoms because the person has lost touch with reality in certain ways.

- Delusions or the belief in things not real or true.
- Hallucinations are hearing or seeing things that are not real.
- Disorganized speech exhibited as an inability to generate a logical sequence of ideas.
- Disorganized or catatonic behavior is a dramatic reduction or increase in movement.

**Negative symptoms** refer to a reduction of a capacity, such as motivation.

- Emotional flatness or lack of expressiveness.
- Inability to start and follow through with activities.
- Lack of pleasure or interest in life.

**Cognitive symptoms** pertain to thinking processes.

- Trouble with prioritizing tasks, memory and organizing thoughts.
- Anosognosia or “lack of insight” being unaware of having an illness.

## **What causes schizophrenia?**

Research strongly suggests that schizophrenia involves problems with brain chemistry and structure and is thought to be caused by a combination of genetic and environmental factors, as are many other medical illnesses. One in every 100 people will develop schizophrenia. About 75 percent of people with schizophrenia develop the disorder between the ages of 16 to 40; women typically have a later onset. It is uncommon to be diagnosed before 12 years of age or after the age of 40.

## **What treatments are available?**

The treatment of schizophrenia requires an all-encompassing approach that includes medication, therapy and psychosocial rehabilitation.

Medication is an important aspect of symptom management. Antipsychotic or neuroleptic medication help to relieve the hallucinations, delusions and, to a lesser extent, the thinking problems people can experience.

Therapy has been shown to be an effective part of a treatment plan. In particular, cognitive behavioral therapy (CBT), which engages the person living with schizophrenia in developing proactive coping strategies for persistent symptoms, is particularly effective.

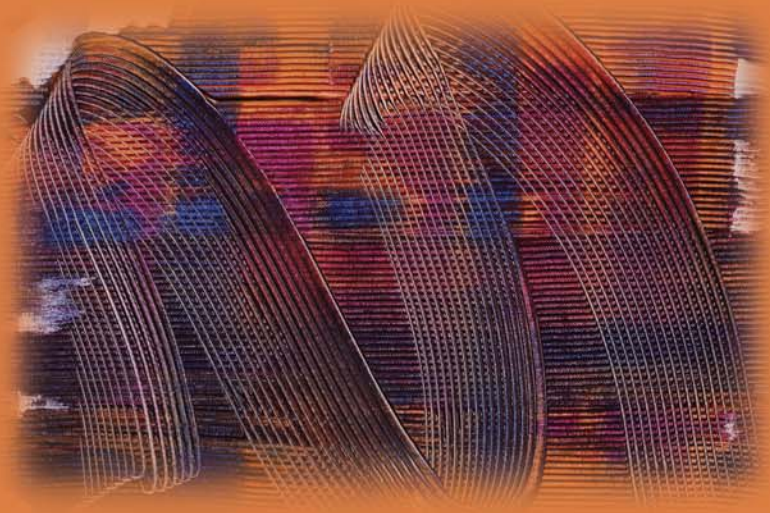
Psychosocial rehabilitation helps with the achievement of life goals often involving relationships, work and living. Most often delivered through community mental health services, it employs strategies that help people successfully live in independent housing, pursue education, find jobs and improve social interaction.

## **Will people with schizophrenia get better?**

Long-term research demonstrates that, over time, individuals living with schizophrenia often do better in terms of coping with their symptoms, maximizing their functioning while minimizing their relapses. Recovery is possible for most, though it is important to remember that some people have more trouble managing their symptoms.

Families who are educated about schizophrenia can offer strong support to their loved one and help reduce the likelihood of relapse. Caring for a loved one with schizophrenia can be challenging and families benefit from education and supportive programs. NAMI's Family-to-Family education program is taught by families who have first-hand experience and provides education and support nationwide through NAMI Affiliates.

*Reviewed by Ken Duckworth, M.D., April 2013*



# Schizophrenia

National Institute of Mental Health

---

## Contents

What is schizophrenia? .....	1
What are the symptoms of schizophrenia? .....	2
Positive symptoms .....	2
Negative symptoms.....	3
Cognitive symptoms.....	4
When does schizophrenia start and who gets it?.....	4
Are people with schizophrenia violent?.....	5
What about substance abuse?.....	5
What causes schizophrenia? .....	6
How is schizophrenia treated?.....	8
Antipsychotic medications .....	8
Psychosocial treatments .....	11
How can you help a person with schizophrenia? .....	14
What is the outlook for the future?.....	15
Citations.....	16
For more information on schizophrenia .....	18

# Schizophrenia



## What is schizophrenia?

Schizophrenia is a chronic, severe, and disabling brain disorder that has affected people throughout history. About 1 percent of Americans have this illness.<sup>1</sup>

People with the disorder may hear voices other people don't hear. They may believe other people are reading their minds, controlling their thoughts, or plotting to harm them. This can terrify people with the illness and make them withdrawn or extremely agitated.

People with schizophrenia may not make sense when they talk. They may sit for hours without moving or talking. Sometimes people with schizophrenia seem perfectly fine until they talk about what they are really thinking.

Families and society are affected by schizophrenia too. Many people with schizophrenia have difficulty holding a job or caring for themselves, so they rely on others for help.

Treatment helps relieve many symptoms of schizophrenia, but most people who have the disorder cope with symptoms throughout their lives. However, many people with schizophrenia can lead rewarding and meaningful lives in their communities. Researchers are developing more effective medications and using new research tools to understand the causes of schizophrenia. In the years to come, this work may help prevent and better treat the illness.

## What are the symptoms of schizophrenia?

---

The symptoms of schizophrenia fall into three broad categories: positive symptoms, negative symptoms, and cognitive symptoms.

### Positive symptoms

Positive symptoms are psychotic behaviors not seen in healthy people. People with positive symptoms often “lose touch” with reality. These symptoms can come and go. Sometimes they are severe and at other times hardly noticeable, depending on whether the individual is receiving treatment. They include the following:

**Hallucinations** are things a person sees, hears, smells, or feels that no one else can see, hear, smell, or feel. “Voices” are the most common type of hallucination in schizophrenia. Many people with the disorder hear voices. The voices may talk to the person about his or her behavior, order the person to do things, or warn the person of danger. Sometimes the voices talk to each other. People with schizophrenia may hear voices for a long time before family and friends notice the problem.

Other types of hallucinations include seeing people or objects that are not there, smelling odors that no one else detects, and feeling things like invisible fingers touching their bodies when no one is near.

**Delusions** are false beliefs that are not part of the person’s culture and do not change. The person believes delusions even after other people prove that the beliefs are not true or logical. People with schizophrenia can have delusions that seem bizarre, such as believing that neighbors can control their behavior with magnetic waves. They may also believe that people on television are directing special messages to them, or that radio stations are broadcasting their thoughts aloud to others. Sometimes they believe they are someone else, such as a famous historical figure. They may have paranoid delusions and believe that others are trying to harm them, such as by cheating, harassing, poisoning, spying on, or plotting against them or the people they care about. These beliefs are called “delusions of persecution.”



## “Voices”

ARE THE MOST  
COMMON TYPE OF  
HALUCINATION IN  
SCHIZOPHRENIA.

**Thought disorders** are unusual or dysfunctional ways of thinking. One form of thought disorder is called “disorganized thinking.” This is when a person has trouble organizing his or her thoughts or connecting them logically. They may talk in a garbled way that is hard to understand. Another form is called “thought blocking.” This is when a person stops speaking abruptly in the middle of a thought. When asked why he or she stopped talking, the person may say that it felt as if the thought had been taken out of his or her head. Finally, a person with a thought disorder might make up meaningless words, or “neologisms.”

**Movement disorders** may appear as agitated body movements. A person with a movement disorder may repeat certain motions over and over. In the other extreme, a person may become catatonic. Catatonia is a state in which a person does not move and does not respond to others. Catatonia is rare today, but it was more common when treatment for schizophrenia was not available.<sup>2</sup>

### Negative symptoms

Negative symptoms are associated with disruptions to normal emotions and behaviors. These symptoms are harder to recognize as part of the disorder and can be mistaken for depression or other conditions. These symptoms include the following:

- “Flat affect” (a person’s face does not move or he or she talks in a dull or monotonous voice)
- Lack of pleasure in everyday life
- Lack of ability to begin and sustain planned activities
- Speaking little, even when forced to interact.

People with negative symptoms need help with everyday tasks. They often neglect basic personal hygiene. This may make them seem lazy or unwilling to help themselves, but the problems are symptoms caused by the schizophrenia.

## Cognitive symptoms

Cognitive symptoms are subtle. Like negative symptoms, cognitive symptoms may be difficult to recognize as part of the disorder. Often, they are detected only when other tests are performed. Cognitive symptoms include the following:

- Poor “executive functioning” (the ability to understand information and use it to make decisions)
- Trouble focusing or paying attention
- Problems with “working memory” (the ability to use information immediately after learning it).

Cognitive symptoms often make it hard to lead a normal life and earn a living. They can cause great emotional distress.

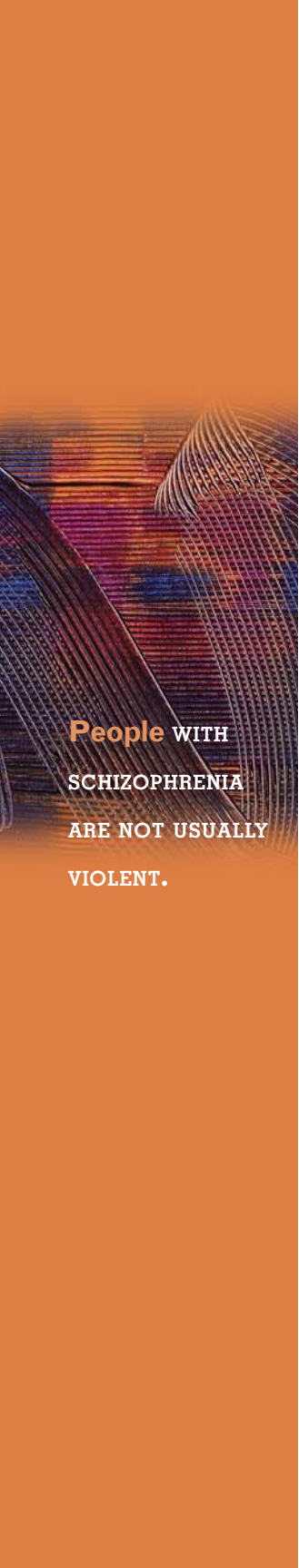
## When does schizophrenia start and who gets it?

---

Schizophrenia affects men and women equally. It occurs at similar rates in all ethnic groups around the world. Symptoms such as hallucinations and delusions usually start between ages 16 and 30. Men tend to experience symptoms a little earlier than women. Most of the time, people do not get schizophrenia after age 45.<sup>3</sup> Schizophrenia rarely occurs in children, but awareness of childhood-onset schizophrenia is increasing.<sup>4,5</sup>

It can be difficult to diagnose schizophrenia in teens. This is because the first signs can include a change of friends, a drop in grades, sleep problems, and irritability—behaviors that are common among teens. A combination of factors can predict schizophrenia in up to 80 percent of youth who are at high risk of developing the illness. These factors include isolating oneself and withdrawing from others, an increase in unusual thoughts and suspicions, and a family history of psychosis.<sup>6</sup> In young people who develop the disease, this stage of the disorder is called the “prodromal” period.





**People WITH  
SCHIZOPHRENIA  
ARE NOT USUALLY  
VIOLENT.**

## Are people with schizophrenia violent?

---

People with schizophrenia are not usually violent. In fact, most violent crimes are not committed by people with schizophrenia.<sup>7</sup> However, some symptoms are associated with violence, such as delusions of persecution. Substance abuse may also increase the chance a person will become violent.<sup>8</sup> If a person with schizophrenia becomes violent, the violence is usually directed at family members and tends to take place at home.

The risk of violence among people with schizophrenia is small. But people with the illness attempt suicide much more often than others. About 10 percent (especially young adult males) die by suicide.<sup>9,10</sup> It is hard to predict which people with schizophrenia are prone to suicide. If you know someone who talks about or attempts suicide, help him or her find professional help right away.

## What about substance abuse?

---

Some people who abuse drugs show symptoms similar to those of schizophrenia. Therefore, people with schizophrenia may be mistaken for people who are affected by drugs. Most researchers do not believe that substance abuse causes schizophrenia. However, people who have schizophrenia are much more likely to have a substance or alcohol abuse problem than the general population.<sup>11</sup>

Substance abuse can make treatment for schizophrenia less effective. Some drugs, like marijuana and stimulants such as amphetamines or cocaine, may make symptoms worse. In fact, research has found increasing evidence of a link between marijuana and schizophrenia symptoms.<sup>12,13</sup> In addition, people who abuse drugs are less likely to follow their treatment plan.

### **Schizophrenia and smoking**

Addiction to nicotine is the most common form of substance abuse in people with schizophrenia. They are addicted to nicotine at three times the rate of the general population (75 to 90 percent vs. 25 to 30 percent).<sup>14</sup>

The relationship between smoking and schizophrenia is complex. People with schizophrenia seem to be driven to smoke, and researchers are exploring whether there is a biological basis for this need. In addition to its known health hazards, several studies have found that smoking may make antipsychotic drugs less effective.

Quitting smoking may be very difficult for people with schizophrenia because nicotine withdrawal may cause their psychotic symptoms to get worse for a while. Quitting strategies that include nicotine replacement methods may be easier for patients to handle. Doctors who treat people with schizophrenia should watch their patients' response to antipsychotic medication carefully if the patient decides to start or stop smoking.

## What causes schizophrenia?

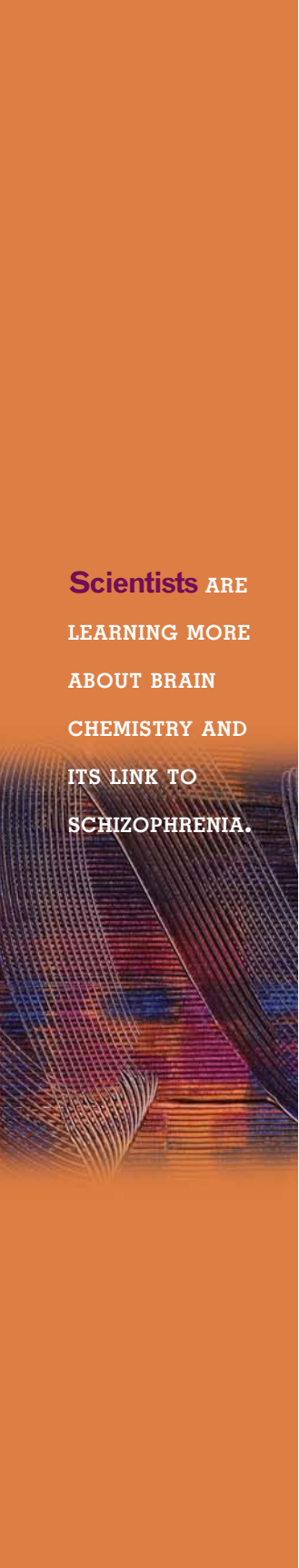
---

Experts think schizophrenia is caused by several factors.

**Genes and environment.** Scientists have long known that schizophrenia runs in families. The illness occurs in 1 percent of the general population, but it occurs in 10 percent of people who have a first-degree relative with the disorder, such as a parent, brother, or sister. People who have second-degree relatives (aunts, uncles, grandparents, or cousins) with the disease also develop schizophrenia more often than the general population. The risk is highest for an identical twin of a person with schizophrenia. He or she has a 40 to 65 percent chance of developing the disorder.<sup>15</sup>

We inherit our genes from both parents. Scientists believe several genes are associated with an increased risk of schizophrenia, but that no gene causes the disease by itself.<sup>16</sup> In fact, recent research has found that people with schizophrenia tend to have higher rates of rare genetic mutations. These genetic differences involve hundreds of different genes and probably disrupt brain development.<sup>17</sup>

Other recent studies suggest that schizophrenia may result in part when a certain gene that is key to making important brain chemicals malfunctions. This problem may affect the



**Scientists ARE**  
LEARNING MORE  
ABOUT BRAIN  
CHEMISTRY AND  
ITS LINK TO  
SCHIZOPHRENIA.

part of the brain involved in developing higher functioning skills.<sup>18</sup> Research into this gene is ongoing, so it is not yet possible to use the genetic information to predict who will develop the disease.

Despite this, tests that scan a person's genes can be bought without a prescription or a health professional's advice. Ads for the tests suggest that with a saliva sample, a company can determine if a client is at risk for developing specific diseases, including schizophrenia. However, scientists don't yet know all of the gene variations that contribute to schizophrenia. Those that are known raise the risk only by very small amounts. Therefore, these "genome scans" are unlikely to provide a complete picture of a person's risk for developing a mental disorder like schizophrenia.

In addition, it probably takes more than genes to cause the disorder. Scientists think interactions between genes and the environment are necessary for schizophrenia to develop. Many environmental factors may be involved, such as exposure to viruses or malnutrition before birth, problems during birth, and other not yet known psychosocial factors.

**Different brain chemistry and structure.** Scientists think that an imbalance in the complex, interrelated chemical reactions of the brain involving the neurotransmitters dopamine and glutamate, and possibly others, plays a role in schizophrenia. Neurotransmitters are substances that allow brain cells to communicate with each other. Scientists are learning more about brain chemistry and its link to schizophrenia.

Also, in small ways the brains of people with schizophrenia look different than those of healthy people. For example, fluid-filled cavities at the center of the brain, called ventricles, are larger in some people with schizophrenia. The brains of people with the illness also tend to have less gray matter, and some areas of the brain may have less or more activity.

Studies of brain tissue after death also have revealed differences in the brains of people with schizophrenia. Scientists found small changes in the distribution or characteristics of brain cells that likely occurred before birth.<sup>3</sup> Some experts think problems during brain development before birth may lead to faulty connections. The problem may not show up in a person until puberty. The brain undergoes major changes during puberty, and these changes could trigger psychotic symptoms. Scientists have learned a lot about schizophrenia, but more research is needed to help explain how it develops.

## How is schizophrenia treated?

---

Because the causes of schizophrenia are still unknown, treatments focus on eliminating the symptoms of the disease. Treatments include antipsychotic medications and various psychosocial treatments.

### Antipsychotic medications

Antipsychotic medications have been available since the mid-1950's. The older types are called conventional or “typical” antipsychotics. Some of the more commonly used typical medications include:

- Chlorpromazine (Thorazine)
- Haloperidol (Haldol)
- Perphenazine (Etrafon, Trilafon)
- Fluphenazine (Prolixin).

In the 1990's, new antipsychotic medications were developed. These new medications are called second generation, or “atypical” antipsychotics.

One of these medications, clozapine (Clozaril) is an effective medication that treats psychotic symptoms, hallucinations, and breaks with reality. But clozapine can sometimes cause a serious problem called agranulocytosis, which is a loss of the white blood cells that help a person fight infection. People who take clozapine must get their white blood cell counts checked every week or two. This problem and the cost of



## Scientists

HAVE LEARNED  
A LOT ABOUT  
SCHIZOPHRENIA,  
BUT MORE  
RESEARCH IS  
NEEDED TO HELP  
EXPLAIN HOW IT  
DEVELOPS.

blood tests make treatment with clozapine difficult for many people. But clozapine is potentially helpful for people who do not respond to other antipsychotic medications.<sup>19</sup>

Other atypical antipsychotics were also developed. None cause agranulocytosis. Examples include:

- Risperidone (Risperdal)
- Olanzapine (Zyprexa)
- Quetiapine (Seroquel)
- Ziprasidone (Geodon)
- Aripiprazole (Abilify)
- Paliperidone (Invega).

### **What are the side effects?**

Some people have side effects when they start taking these medications. Most side effects go away after a few days and often can be managed successfully. People who are taking antipsychotics should not drive until they adjust to their new medication. Side effects of many antipsychotics include:

- Drowsiness
- Dizziness when changing positions
- Blurred vision
- Rapid heartbeat
- Sensitivity to the sun
- Skin rashes
- Menstrual problems for women.

Atypical antipsychotic medications can cause major weight gain and changes in a person's metabolism. This may increase a person's risk of getting diabetes and high cholesterol.<sup>20</sup> A person's weight, glucose levels, and lipid levels should be monitored regularly by a doctor while taking an atypical antipsychotic medication.

Typical antipsychotic medications can cause side effects related to physical movement, such as:

- Rigidity
- Persistent muscle spasms
- Tremors
- Restlessness.

Long-term use of typical antipsychotic medications may lead to a condition called tardive dyskinesia (TD). TD causes muscle movements a person can't control. The movements commonly happen around the mouth. TD can range from mild to severe, and in some people the problem cannot be cured. Sometimes people with TD recover partially or fully after they stop taking the medication.

TD happens to fewer people who take the atypical antipsychotics, but some people may still get TD. People who think that they might have TD should check with their doctor before stopping their medication.

### **How are antipsychotics taken and how do people respond to them?**

Antipsychotics are usually in pill or liquid form. Some antipsychotics are shots that are given once or twice a month.

Symptoms of schizophrenia, such as feeling agitated and having hallucinations, usually go away within days. Symptoms like delusions usually go away within a few weeks. After about six weeks, many people will see a lot of improvement.

However, people respond in different ways to antipsychotic medications, and no one can tell beforehand how a person will respond. Sometimes a person needs to try several medications before finding the right one. Doctors and patients can work together to find the best medication or medication combination, as well as the right dose.

Some people may have a relapse—their symptoms come back or get worse. Usually, relapses happen when people stop taking their medication, or when they only take it sometimes.

**When a doctor  
SAYS IT IS OKAY  
TO STOP TAKING  
A MEDICATION,  
IT SHOULD BE  
GRADUALLY  
TAPERED OFF,  
NEVER STOPPED  
SUDDENLY.**

Some people stop taking the medication because they feel better or they may feel they don't need it anymore. But no one should stop taking an antipsychotic medication without talking to his or her doctor. When a doctor says it is okay to stop taking a medication, it should be gradually tapered off, never stopped suddenly.

### **How do antipsychotics interact with other medications?**

Antipsychotics can produce unpleasant or dangerous side effects when taken with certain medications. For this reason, all doctors treating a patient need to be aware of all the medications that person is taking. Doctors need to know about prescription and over-the-counter medicine, vitamins, minerals, and herbal supplements. People also need to discuss any alcohol or other drug use with their doctor.

To find out more about how antipsychotics work, the National Institute of Mental Health (NIMH) funded a study called CATIE (Clinical Antipsychotic Trials of Intervention Effectiveness). This study compared the effectiveness and side effects of five antipsychotics used to treat people with schizophrenia. In general, the study found that the older typical antipsychotic perphenazine (Trilafon) worked as well as the newer, atypical medications. But because people respond differently to different medications, it is important that treatments be designed carefully for each person. More information about CATIE is on the NIMH Web site at <http://www.nimh.nih.gov/health/trials/practical/catie/index.shtml>.

### **Psychosocial treatments**

Psychosocial treatments can help people with schizophrenia who are already stabilized on antipsychotic medication. Psychosocial treatments help these patients deal with the everyday challenges of the illness, such as difficulty with communication, self-care, work, and forming and keeping relationships. Learning and using coping mechanisms to address these problems allow people with schizophrenia to socialize and attend school and work.

Patients who receive regular psychosocial treatment also are more likely to keep taking their medication, and they are less likely to have relapses or be hospitalized. A therapist can help patients better understand and adjust to living with schizophrenia. The therapist can provide education about the disorder, common symptoms or problems patients may experience, and the importance of staying on medications. For more information on psychosocial treatments, see the psychotherapies section on the NIMH Web site at <http://www.nimh.nih.gov/health/topics/psychotherapies/index.shtml>.

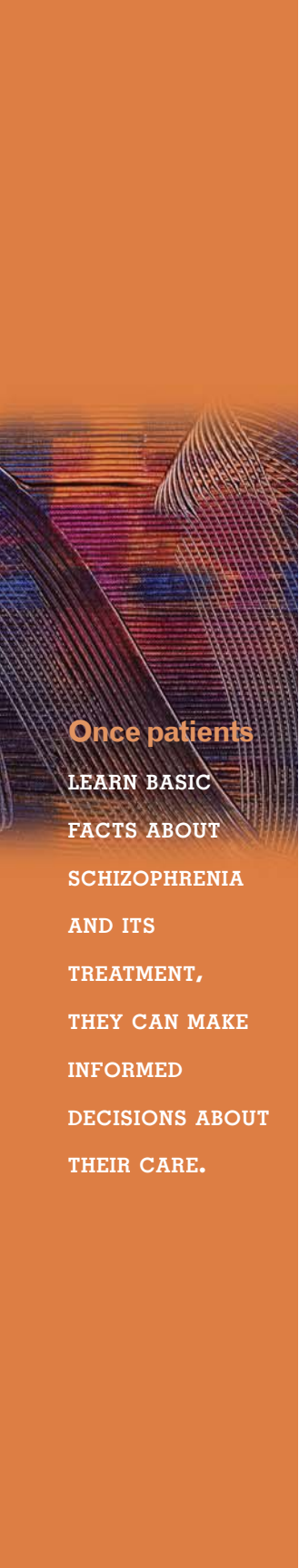
**Illness management skills.** People with schizophrenia can take an active role in managing their own illness. Once patients learn basic facts about schizophrenia and its treatment, they can make informed decisions about their care. If they know how to watch for the early warning signs of relapse and make a plan to respond, patients can learn to prevent relapses. Patients can also use coping skills to deal with persistent symptoms.

**Integrated treatment for co-occurring substance abuse.** Substance abuse is the most common co-occurring disorder in people with schizophrenia. But ordinary substance abuse treatment programs usually do not address this population's special needs. When schizophrenia treatment programs and drug treatment programs are used together, patients get better results.

**Rehabilitation.** Rehabilitation emphasizes social and vocational training to help people with schizophrenia function better in their communities. Because schizophrenia usually develops in people during the critical career-forming years of life (ages 18 to 35), and because the disease makes normal thinking and functioning difficult, most patients do not receive training in the skills needed for a job.

Rehabilitation programs can include job counseling and training, money management counseling, help in learning to use public transportation, and opportunities to practice communication skills. Rehabilitation programs work well when





## Once patients

LEARN BASIC

FACTS ABOUT

SCHIZOPHRENIA

AND ITS

TREATMENT,

THEY CAN MAKE

INFORMED

DECISIONS ABOUT

THEIR CARE.

they include both job training and specific therapy designed to improve cognitive or thinking skills. Programs like this help patients hold jobs, remember important details, and improve their functioning.<sup>21,22,23</sup>

**Family education.** People with schizophrenia are often discharged from the hospital into the care of their families. So it is important that family members know as much as possible about the disease. With the help of a therapist, family members can learn coping strategies and problem-solving skills. In this way the family can help make sure their loved one sticks with treatment and stays on his or her medication. Families should learn where to find outpatient and family services.

**Cognitive behavioral therapy.** Cognitive behavioral therapy (CBT) is a type of psychotherapy that focuses on thinking and behavior. CBT helps patients with symptoms that do not go away even when they take medication. The therapist teaches people with schizophrenia how to test the reality of their thoughts and perceptions, how to “not listen” to their voices, and how to manage their symptoms overall. CBT can help reduce the severity of symptoms and reduce the risk of relapse.

**Self-help groups.** Self-help groups for people with schizophrenia and their families are becoming more common. Professional therapists usually are not involved, but group members support and comfort each other. People in self-help groups know that others are facing the same problems, which can help everyone feel less isolated. The networking that takes place in self-help groups can also prompt families to work together to advocate for research and more hospital and community treatment programs. Also, groups may be able to draw public attention to the discrimination many people with mental illnesses face.

## How can you help a person with schizophrenia?

---

People with schizophrenia can get help from professional case managers and caregivers at residential or day programs. However, family members usually are a patient's primary caregivers.

People with schizophrenia often resist treatment. They may not think they need help because they believe their delusions or hallucinations are real. In these cases, family and friends may need to take action to keep their loved one safe. Laws vary from state to state, and it can be difficult to force a person with a mental disorder into treatment or hospitalization. But when a person becomes dangerous to himself or herself, or to others, family members or friends may have to call the police to take their loved one to the hospital.

**Treatment at the hospital.** In the emergency room, a mental health professional will assess the patient and determine whether a voluntary or involuntary admission is needed. For a person to be admitted involuntarily, the law states that the professional must witness psychotic behavior and hear the person voice delusional thoughts. Family and friends can provide needed information to help a mental health professional make a decision.

**After a loved one leaves the hospital.** Family and friends can help their loved ones get treatment and take their medication once they go home. If patients stop taking their medication or stop going to follow-up appointments, their symptoms likely will return. Sometimes symptoms become severe for people who stop their medication and treatment. This is dangerous, since they may become unable to care for themselves. Some people end up on the street or in jail, where they rarely receive the kind of help they need.



**People with  
SCHIZOPHRENIA  
CAN GET  
HELP FROM  
PROFESSIONAL  
CASE MANAGERS  
AND CAREGIVERS  
AT RESIDENTIAL  
OR DAY  
PROGRAMS.**

Family and friends can also help patients set realistic goals and learn to function in the world. Each step toward these goals should be small and taken one at a time. The patient will need support during this time. When people with a mental illness are pressured and criticized, they usually do not get well. Often, their symptoms may get worse. Telling them when they are doing something right is the best way to help them move forward.

It can be difficult to know how to respond to someone with schizophrenia who makes strange or clearly false statements. Remember that these beliefs or hallucinations seem very real to the person. It is not helpful to say they are wrong or imaginary. But going along with the delusions is not helpful, either. Instead, calmly say that you see things differently. Tell them that you acknowledge that everyone has the right to see things his or her own way. In addition, it is important to understand that schizophrenia is a biological illness. Being respectful, supportive, and kind without tolerating dangerous or inappropriate behavior is the best way to approach people with this disorder.

### **What is the outlook for the future?**

---

The outlook for people with schizophrenia continues to improve. Although there is no cure, treatments that work well are available. Many people with schizophrenia improve enough to lead independent, satisfying lives.

Continued research and understanding in genetics, neuroscience, and behavioral science will help scientists and health professionals understand the causes of the disorder and how it may be predicted and prevented. This work will help experts develop better treatments to help people with schizophrenia achieve their full potential. Families and individuals who are living with schizophrenia are encouraged to participate in clinical research. For up-to-date information about the latest NIMH-funded research in schizophrenia, see the NIMH Web site at <http://www.nimh.nih.gov>.

## Citations

---

1. Regier DA, Narrow WE, Rae DS, Manderscheid RW, Locke BZ, Goodwin FK. The de facto US mental and addictive disorders service system. Epidemiologic catchment area prospective 1-year prevalence rates of disorders and services. *Archives of General Psychiatry*. 1993 Feb;50(2):85-94.
2. World Health Organization (WHO). Catatonic Schizophrenia. The ICD-10 Classification of Mental and Behavioural Disorders: Clinical descriptions and diagnostic guidelines.1992.Geneva, Switzerland: World Health Organization.
3. Mueser KT and McGurk SR. Schizophrenia. *Lancet*. 2004 Jun 19;363(9426):2063-2072.
4. Nicolson R, Lenane M, Hamburger SD, Fernandez T, Bedwell J, Rapoport JL. Lessons from childhood-onset schizophrenia. *Brain Research Review*. 2000;31(2-3):147-156.
5. Masi G, Mucci M, Pari C. Children with schizophrenia: clinical picture and pharmacological treatment. *CNS Drugs*. 2006;20(10):841-866.
6. Cannon TD, Cadenhead K, Cornblatt B, Woods SW, Addington J, Walker E, Seidman LJ, Perkins D, Tsuang M, McGlashan T, Heinsen R. Prediction of psychosis in high-risk youth: A Multi-site longitudinal study in North America. *Archives of General Psychiatry*. 2008 Jan;65(1):28-37.
7. Walsh E, Buchanan A, Fahy T. Violence and schizophrenia: examining the evidence. *British Journal of Psychiatry*. 2002 Jun;180:490-495.
8. Swanson JW, Swartz MS, Van Dorn RA, Elbogen E, Wager HR, Rosenheck RA, Stroup S, McEvoy JP, Lieberman JA. A national study of violent behavior in persons with schizophrenia. *Archives of General Psychiatry*. 2006 May;63(5):490-499.
9. Meltzer HY, Alphas L, Green AI, Altamura AC, Anand R, Bertoldi A, Bourgeois M, Chouinard G, Islam MZ, Kane J, Krishnan R, Lindenmayer JP, Potkin S, International Suicide Prevention Trial Study Group. Clozapine treatment for suicidality in schizophrenia: International Suicide Prevention Trial (InterSePT). *Archives of General Psychiatry*. 2003 Jan;60(1):82-91.
10. Meltzer HY and Baldessarini RJ. Reducing the risk for suicide in schizophrenia and affective disorders. *Journal of Clinical Psychiatry*. 2003 Sep;64(9):1122-1129.
11. Blanchard JJ, Brown SA, Horan WP, Sherwood AR. Substance use disorders in schizophrenia: Reviews, integration and a proposed model. *Clinical Psychological Review*. 2000;20:207-234.
12. Zullino DF, Waber L, Khazaal Y. Cannabis and the course of schizophrenia. *American Journal of Psychiatry*. 2008;165(10):1357-1358.
13. Muller-Vahl KR and Emrich HM. Cannabis and schizophrenia: towards a cannabinoid hypothesis of schizophrenia. *Expert Review of Neurotherapeutics*. 2008;8(7):1037-1048.
14. Jones RT and Benowitz NL. Therapeutics for Nicotine Addiction. In Davis KL, Charney D, Coyle JT & Nemeroff C (Eds.), *Neuropsychopharmacology: The Fifth Generation of Progress* (pp1533-1544). 2002. Nashville, TN:American College of Neuropsychopharmacology.
15. Cardno AG and Gottesman II. Twin studies of schizophrenia: from bow-and-arrow concordances to star wars Mx and functional genomics. *American Journal of Medical Genetics*. 2000 Spring;97(1):12-17.

16. Harrison PJ and Weinberger DR. Schizophrenia genes, gene expression, and neuropathology: on the matter of their convergence. *Molecular Psychiatry*. 2005;10(1):40–68.
17. Walsh T, McClellan JM, McCarthy SE, Addington AM, Pierce SB, Cooper GM, Nord AS, Kusenda M, Malhotra D, Bhandari A, Stray SM, Rippey CF, Roccanova P, Makarov V, Lakshmi B, Findling RL, Sikich L, Stromberg T, Merriman B, Gogtay N, Butler P, Eckstrand K, Noory L, Gochman P, Long R, Chen Z, Davis S, Baker C, Eichler EE, Meltzer PS, Nelson SF, Singleton AB, Lee MK, Rapoport JL, King MC, Sebat J. Rare structural variants disrupt multiple genes in neurodevelopmental pathways in schizophrenia. *Science*. 2008 Apr 25;320(5875):539–543.
18. Huang HS, Matevosian A, Whittle C, Kim SY, Schumacher A, Baker SP, Akbarian S. Prefrontal dysfunction in schizophrenia involves missed-lineage leukemia 1-regulated histone methylation at GABAergic gene promoters. *Journal of Neuroscience*. 2007 Oct 17;27(42):11254–11262.
19. Gogtay N and Rapoport J. Clozapine use in children and adolescents. *Expert Opinion on Pharmacotherapy*. 2008;9(3):459–465.
20. Lieberman JA, Stroup TS, McEvoy JP, Swartz MS, Rosenheck RA, Perkins DO, Keefe RS, Davis SM, Davis CE, Lebowitz BD, Severe J, Hsiao JK, Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE). Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *New England Journal of Medicine*. 2005 Sep 22;353(12):1209–1223.
21. Greig TC, Zito W, Wexler BE, Fiszdon J, Bell MD. Improved cognitive function in schizophrenia after one year of cognitive training and vocational services. *Schizophrenia Research*. 2007 Nov;96(1–3):156–161.
22. Bell M, Fiszdon J, Greig T, Wexler B, Bryson G. Neurocognitive enhancement therapy with work therapy in schizophrenia: 6-month follow-up of neuropsychological performance. *Journal of Rehabilitation Research and Development*. 2007;44(5):761–770.
23. Hogarty GE, Flesher S, Ulrich R, Carter M, Greenwald D, Poque-Geile M, Kechavan M, Cooley S, DiBarry AL, Garrett A, Parepally H, Zoretich R. Cognitive enhancement therapy for schizophrenia: effects of a 2-year randomized trial on cognition and behavior. *Archives of General Psychiatry*. 2004 Sep;61(9):866–876.

## For more information on schizophrenia

Visit the National Library of Medicine's MedlinePlus

<http://medlineplus.gov>

En Español, <http://medlineplus.gov/spanish>

For information on clinical trials for schizophrenia

<http://www.nimh.nih.gov/health/trials/index.shtml>

National Library of Medicine Clinical Trials Database

<http://www.clinicaltrials.gov>

Clinical trials at NIMH in Bethesda, MD

<http://patientinfo.nimh.nih.gov> or call 1-888-674-6464

Information from NIMH is available in multiple formats. You can browse online, download documents in PDF, and order paper brochures through the mail. If you would like to have NIMH publications, you can order them online at <http://www.nimh.nih.gov>. If you do not have Internet access and wish to have information that supplements this publication, please contact the NIMH Information Resource Center at the numbers listed below.

### National Institute of Mental Health

Science Writing, Press & Dissemination Branch

6001 Executive Boulevard

Room 8184, MSC 9663

Bethesda, MD 20892-9663

Phone: 301-443-4513 or

1-866-615-NIMH (6464) toll-free

TTY: 301-443-8431 or

1-866-415-8051 toll-free

FAX: 301-443-4279

E-mail: [nimhinfo@nih.gov](mailto:nimhinfo@nih.gov)

Web site: <http://www.nimh.nih.gov>

## Reprints

NIMH publications are in the public domain and may be reproduced or copied without permission from the National Institute of Mental Health. NIMH encourages you to reproduce them and use them in your efforts to improve public health. Citation of the National Institute of Mental Health as a source is appreciated. However, using government materials inappropriately can raise legal or ethical concerns, so we ask you to use these guidelines:

- NIMH does not endorse or recommend any commercial products, processes, or services, and publications may not be used for advertising or endorsement purposes.
- NIMH does not provide specific medical advice or treatment recommendations or referrals; these materials may not be used in a manner that has the appearance of such information.
- NIMH requests that non-Federal organizations not alter publications in a way that will jeopardize the integrity and “brand” when using publications.
- Addition of non-Federal Government logos and Web site links may not have the appearance of NIMH endorsement of any specific commercial products or services or medical treatments or services.

If you have questions regarding these guidelines and use of NIMH publications, please contact the NIMH Information Resource Center at 1-866-615-6464 or e-mail at [nimhinfo@nih.gov](mailto:nimhinfo@nih.gov).

# NIMH

National Institute  
of Mental Health



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Mental Health

NIH Publication No. 09-3517

Revised 2009



## Latest Research

Every year new research is produced concerning schizophrenia. Although schizophrenia is not fully understood, new research is identifying some potential interventions and possible causes of schizophrenia.

### Prevention and Early Intervention Research

**One new study** found that taking a fish oil supplement prior to any symptoms of schizophrenia may actually help prevent psychosis from developing. Researchers tested the efficacy of taking long-chain Omega-3 fatty acids for the prevention of psychotic disorders. The results show that taking Omega-3 not only reduces the risk psychotic disorders developing further but may also provide a viable strategy of prevention in young children with a predisposition for psychotic states. Omega-3 fatty acids have lately become popular in mainstream society for potentially helping prevent heart disease and cancer. Often labeled as Omega-3 fish oil, it can be purchased in most supermarkets and pharmacies.

### Omega-3 fatty acids and the possible prevention of psychosis

In a randomized controlled study of at risk young adults, a European study showed that Omega-3 fatty acids (found in fish oil) reduced the number of young adults who develop psychosis. The effect was powerful but the total number of subjects was only 81, so the promising study needs to be replicated with a larger sample. Despite this sample limitation, this is a powerful piece of the prevention literature and more needs to be understood about dosing and effect. At this time, NAMI's medical director advises individuals in the teen to young adult developmental stage who have early symptoms or prodrome of psychosis to take omega three fatty acids as there appear to be few risks in this strategy with potential benefit. The study can be found in the February 2010 edition of the *Archives of General Psychiatry*.

### The RAISE Project

The Recovery After Initial Schizophrenia Episode (RAISE) Project is a research initiative started by the National Institute of Mental Health (NIMH) in 2009 to explore the benefits of early and aggressive treatment in reducing the symptoms of schizophrenia. Previous research has shown that stepping in during the early stages of psychosis proves to be most beneficial because symptoms are the most responsive to treatment. By addressing the illness early and designing a personalized program, individuals may have more success in accepting and maintaining treatment and consequently improved functional ability in life.

In August 2011 the RAISE Project began **full-scale clinical trials**. Two independent research groups are working in parallel to develop and test potential intervention approaches. The treatments are similar but the research approaches and settings are different, allowing RAISE researchers to rigorously test interventions under a variety of conditions. One group, led by John M. Kane, M.D., of the Feinstein Institute for Medical Research, is called the **RAISE Early Treatment Program (ETP)**. The ETP will compare two different ways of providing care to people in early stages of schizophrenia. Treatment may include personalized medication treatment, individual resiliency training and supportive services such as family psychoeducation and education or employment assistance.

The second team, the **RAISE Connection Program**, headed by Susan Essock, Ph.D., of Columbia University, aims to engage participants in individually tailored treatment, illness management strategies, education and/or employment assistance, supportive services and follow-up care for up to two years.

## Research into the Causes of Schizophrenia

### Marijuana as Trigger in Some Individuals

There are two broad areas of causation for schizophrenia, genetic and environmental. One of these environmental factors that have been studied of late is the effect that smoking marijuana has on the increased risk of experiencing psychotic symptoms. Environmental causes act by triggering specific genes, causing them to "turn on or off." According to a **study published in March 2011** by Dr. Jim van Os, researchers found that not only did smoking marijuana increase the risk psychotic incidents but increased the risk of ongoing psychotic experiences. Further results pointed to the notion that smoking marijuana was a causal factor to the onset of schizophrenia rather than a form of self-medication.

Corroborating this evidence is a **study released in February of 2011**, which found that the smoking of marijuana led to earlier onset of schizophrenia and almost always preceded the manifestation of the illness. The opinion that marijuana is a cause of schizophrenia as opposed to a byproduct is qualified by **another study**, also released this past February, which found that certain genetic variations increased the effects that marijuana had on triggering psychosis. This body of literature is strengthening the evidence for the risks that marijuana poses for the development of schizophrenia.

## Genetics

### Genes and Risk



**Ask the Doctor**  
Read a FAQ with NAMI's  
Medical Director,  
Dr. Ken Duckworth.

Read our report on schizophrenia

Take our quiz:  
How much do you know?

Download NAMI's  
schizophrenia brochure

Unlike some other conditions, schizophrenia is not caused by just one genetic variation but rather is a complex interplay of many genetic and environmental influences. New research continues to find other genetic mutations as potential contributing causes, albeit to only small populations. For example, one genetic difference recently identified appears to **increase the likelihood by 14 times**. However, this genetic variation only appears in about one percent of patients. This study represents a trend in understanding in more detail some genetic vulnerabilities, but they do not yet account for more than a small percentage of overall genetic factors to understand risk. Each study in this genetic risk area represents progress but the field has a long way to go.

## Schizophrenia Research Foundation

The [Schizophrenia Research Forum](#) website is a rich resource that fosters collaboration among researchers by providing an international online forum where ideas, research news and data can be presented and discussed. The website is independent of industry sponsorship and open to the public. Though geared toward researchers, they welcome other visitors-people with mental illnesses, families, the media and others who need accurate information on research into schizophrenia.

## Family Education

### NAMI Family Support Found To Be Effective

Dr. Lisa Dixon and her colleagues at the University of Maryland evaluated NAMI's own Family-to-Family program. She designed a randomized controlled study to evaluate the impact of family to family on those who took it and a randomly assigned group who had to wait. The individuals who took the course felt better educated, more empowered and showed better coping strategies. This is a groundbreaking study of the intervention. This study makes advocating for the popular program even easier, as it now has a scientifically validated evidence base.

## Treatment

A new antipsychotic medication named lurasidone was approved by the [U.S. Food and Drug Administration](#) (FDA) in February 2011 and is distributed under the brand name Latuda. Lurasidone has been shown to be effective on both positive and negative symptoms, as well as possibly be efficacious in treating cognitive and memory deficits.

New, more effective medications are always needed. Recent developments point to ones that will be effective on both positive and negative symptoms, as well as possibly being efficacious in treating cognitive and memory deficits.

Taking medication is not, and should not be the only way a serious mental illness such as schizophrenia is treated. Education and social support are also critical to recovery. However, support is not only crucial for the individual living with schizophrenia; the family and loved ones of this individual sometimes need support as well. [A recent study](#) published looked at the helpfulness of enrolling in [NAMI's Family-to-Family Program](#), an evidence-based practice. At the conclusion of the 12-week program, participants demonstrated greater feelings of empowerment and reduced displeasure and worry about the family member who live with mental illness. In a follow up six months later, these positive benefits were still maintained, pointing to the long term benefits of engaging in an education and support.

# Symptoms, Causes and Diagnosis

## Diagnosing Schizophrenia

Diagnosing schizophrenia is not easy. The first signs of its manifestation may only be a change of friends, a drop in grades or irritability and not even appear to be "typical" signs of psychosis. Complicating diagnosis further is that the symptoms of schizophrenia also resemble those of other mental and physical health problems, such as bipolar disorder and brain tumors. Schizophrenia symptoms can also be mimicked in the effects of illicit drugs, including the use of methamphetamines. As a consequence there is no one single physical or lab test that is able on its own to accurately diagnosis schizophrenia. However, a health care provider who evaluates the symptoms and the course of a person's illness over six months can help ensure a correct diagnosis.

The difficulty of diagnosing schizophrenia is compounded with the fact that many individuals who are diagnosed do not believe they have the disease. The *Diagnostic and Statistical Manual of Mental Disorders*, fourth-edition (DSM-IV), the book health care professionals use to diagnose mental illnesses, states that a majority of individuals with schizophrenia do not believe they have a psychotic illness. Evidence suggests that poor insight, or awareness, is an expression of the illness rather than a coping strategy. Named Anosognosia, this lack of insight according to some studies occurs in 50-80 percent of patients diagnosed with schizophrenia.

It is extremely important to identify schizophrenia as early as possible. According to research, identifying schizophrenia early-just like cancer-can increase the chances of managing the illness and recovery. If identified and treated early on, schizophrenia can be managed fairly well and the chances of subsequent psychotic episodes are greatly reduced.

The DSM-IV contains five sub-classifications of schizophrenia. However, as scientific knowledge changes the diagnostic criteria for diagnosing schizophrenia changes as well. The developers of the DSM-5, to be published in 2013, are recommended that the classifications be **dropped**.

## Ethnicity and its Effect on Diagnosis

Despite extreme similarity in genetics across race there is a surprisingly different rate of diagnosis. **One study** found that African Americans were three times more likely to be diagnosed with schizophrenia than whites; when socioeconomic status was adjusted for, there was still a two-fold difference. Other studies have suggested that this is because clinicians more readily diagnose African Americans with schizophrenia rather than an affective disorder because of the way symptoms are exhibited.

The expression of schizophrenia varies vastly across cultures, even among similar cultures. Studies conducted on Asian participants in East Asian countries revealed that there is a **relationship between symptoms of schizophrenia and culture**. For example, the content of hallucinations and delusions appeared to be culturally specific. This demonstrates that cultural differences, no matter how small, play an integral role in the appearances of diseases.

# Symptoms, Causes and Diagnosis

## Symptoms

No single symptom positively identifies schizophrenia. An individual may have any combination of symptoms. Furthermore, an individual's symptoms can change over time.

The symptoms of schizophrenia are divided into three categories: positive, negative and cognitive symptoms.

Positive Symptoms are also known as "psychotic symptoms" because the person has lost contact with reality in certain ways. ([read more](#))

## Causes

While an exact cause of schizophrenia is still unknown, researchers do know that the brains of people living with schizophrenia are different from those undiagnosed with the illness.

It is too early to classify schizophrenia as either a neurodevelopmental (impairment of the growth and development of the brain) or a neurodegenerative (progressive loss of structure or function of neurons) disorder, as both seem to occur over the course of the illness.

Research strongly suggests the emergence of schizophrenia is a result of both genetic and environmental factors. ([read more](#))

## Diagnosis

Diagnosing schizophrenia is not easy. The first signs of its manifestation may only be a change of friends, a drop in grades or irritability and not even appear to be "typical" signs of psychosis.

Complicating diagnosis further is that the symptoms of schizophrenia also resemble those of other mental and physical health problems, such as bipolar disorder and brain tumors.

Schizophrenia symptoms can also be mimicked in the effects of illicit drugs, including the use of methamphetamines. As a consequence there is no one single physical or lab test that is able on its own to accurately diagnosis schizophrenia.

# The Diagnosis, Symptoms and Causes of Schizophrenia

## The Symptoms of Schizophrenia

No single symptom positively identifies schizophrenia. An individual may have any combination of symptoms. Furthermore, an individual's symptoms can change over time. The symptoms of schizophrenia are divided into three categories: positive, negative and cognitive symptoms.

**Positive Symptoms** are also known as "psychotic symptoms" because the person has lost contact with reality in certain ways. Positive symptoms can include:

*Delusions*, which occur when someone believes ideas that are clearly false (e.g. people are reading their thoughts or that they can control other people's minds). These beliefs are frequently unusual and/or impossible. As found by a [2010 study](#), people living with schizophrenia are more prone to produce confabulations, the production of false memories without a deliberate intent to lie. However, unlike neurological disorders, memory impairment is not a prerequisite for confabulation.

*Hallucinations*, which are imagined voices or images inside or outside an individual's head.

**Negative Symptoms** are deficits or normal behavior and "take away" from the person's ability and usual way of interacting with the world. As a 2000 study in *Advances in Psychiatric Treatment* found, these symptoms can often be confused with depression. These symptoms can include:

- *Emotional flatness*
- *Inability to start or follow through with activities*
- *Lack of content in speech*
- *Inability to experience pleasure*

**Cognitive Symptoms** pertain to thinking processes. People living with schizophrenia often struggle with executive functioning, memory and organizing thoughts. Another common cognitive deficit associated with schizophrenia is Anosognosia, as explained previously.

According to the DSM-IV, before diagnosis can be made, two of the following must be present for at least one month: delusions, hallucinations, disorganized speech, catatonic behavior and negative symptoms.

## Schizophrenia vs. Schizoaffective Disorder

Often differentiating between mental illnesses can be difficult. Two similar, yet different, disorders are schizophrenia and schizoaffective disorder. While schizophrenia is characterized by the above symptoms, people living with schizoaffective disorder also experience symptoms of a mood disorder, such as mania or depression. To learn more about schizoaffective disorder go to NAMI's page on [Schizoaffective Disorder](#).

# Treatment, Services and Support

## Treating Schizophrenia

While there is still no cure for schizophrenia, treatments have been developed that help reduce many symptoms of the disease. There are many medications now available to help treat schizophrenia. Psychosocial rehabilitation and family support are also key aspects in providing a successful treatment. Perhaps most important is to address schizophrenia as soon as it is detected. Early treatment has been shown to be effective in limiting the development and severity of symptoms.

## Medication

With the advent of antipsychotic medications in the 1950s, the outlook for people diagnosed with schizophrenia greatly improved. Although these medications, now called conventional or typical antipsychotics, did not provide a cure for schizophrenia, they were able to help improve the positive symptoms linked with the illness. Many people living with mental illness now were able to be released from psychiatric institutions as their positive symptoms-hallucinations, delusions-were relieved with these drugs.

These earlier medications often had side effects. Some of these side-effects included restless motion (called akathisia), Parkinson-like symptoms (e.g., stiffness, dry mouth, sedation) and tardive dyskinesia, a disabling and untreatable movement disorder.

Some first-generation medications used to treat schizophrenia are:

<b>Generic Name</b>	<b>Brand Name</b>
Chlorpromazine	Thorazine
Fluphenazine*	Prolixin
<b>Haloperidol*</b>	<b>Haldol</b>
Loxapine	Loxitane
Perphenazine	Trilafon
Thioridazine	Mellaril
Thiothixene	Navane
Trifluoperazine	Stelazine

Second-generation antipsychotics (SGA), called atypical antipsychotics because they do not cause most of the movement problems related to the first generation of antipsychotics, have been available since the early 1990s. The first of these, clozapine, which was more effective than the previous anti-psychotics by addressing difficult-to-treat symptoms, however, could possibly produce the severe side effect agranulocytosis, which is the loss of white blood cells.

Some of the newest atypical antipsychotics include:

Generic Name	Brand Name
Aripiprazole	Abilify
Asenapine	Saphris
Clozapine	Clozaril
lloperidone	Fanapt
Lurasidone	Latuda
Olanzapine	Zyprexa*
Paliperidone	Invega*
Risperidone	Risperdal
Quetiapine	Seroquel
Ziprasidone	Geodon

\* Also available in long-acting injectable as of 2/2011.

Some second-generation antipsychotics can sometimes **cause metabolic syndrome**, which includes dyslipidemia, an abnormal amount of lipids in the blood, abdominal obesity and elevated blood pressure. However, these symptoms are largely preventable. Other initial side effects of antipsychotics include drowsiness, blurred vision, rapid heartbeat and sensitivity to the sun.

Two of these medications, risperidone (Risperdal) and aripiprazole (Abilify), are approved by the FDA for use in teenagers aged 13-17. The FDA periodically approves new medications. For a current list, visit [www.fda.gov](http://www.fda.gov).

Overall, however, these medications have led to significant improvement in the quality of life of many individuals living with schizophrenia. New developments in medicine include the introduction of paliperidone palmitate (Invega Sustenna), which can be administered monthly instead of bi-weekly.

## Choosing an Antipsychotic

The Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) study, funded by the National Institute of Mental Health, released in 2006, looks at medication adherence in individuals with chronic schizophrenia. The study, which raises more questions than it answers, confirms that the differences in side effects in and between these newer and older medications are substantial, which further emphasizes the need to individually tailor the treatment to the individual. Another noteworthy aspect is that among severely ill individuals who did not respond to other treatments, most subjects in the study did not continue their treatments. This is another argument for letting the individual and the doctor choose the best medicine.

## Psychosocial Rehabilitation

People living with schizophrenia typically have important goals for themselves similar to those of individuals who are not diagnosed with schizophrenia. They want to be successful in relationships, work and living. Psychiatric rehabilitation

strategies are designed to enable people to compensate for, or eliminate, the environmental and interpersonal barriers and the functional deficits created by this illness. By addressing these facets, people can learn to successfully live in independent housing, pursue education, find a job and improve social interactions.

Assertive Community Treatment (ACT) is a service-delivery model that provides comprehensive, locally based treatment to people with serious mental illnesses, such as schizophrenia. Unlike other community-based programs, ACT is not a linkage or brokerage case-management program that connects individuals to mental health or other services, but rather, it provides highly individualized services directly to individuals.

ACT is an evidence-based service that includes fidelity standards, meaning that research has substantiated the effectiveness of the program, when it meets certain standards of practice. Professionals work with individuals living with mental illness to address problems proactively, helping to make sure that crises' do not happen, ensure medications are being properly taken and assist in helping individuals meet the routine challenges of daily life.

Engaging in psychosocial rehabilitation encourages individuals to be more likely to continue taking their medication and less likely to be re-hospitalized in the future because of a relapse.

## Medical Care and Co-occurring Disorders

People living with schizophrenia are subject to many medical risks and typically receive poor medical care. High rates of smoking are found in patients with schizophrenia. Beyond the "traditional" health risks of smoking, i.e., lung disease, a study conducted in 2010 found patients who smoke are more likely to relapse and be **readmitted to a hospital than non-smoking patients**.

About 25 percent of people living with schizophrenia also have a substance abuse disorder. This is frequently referred to as a "dual diagnosis." While it may seem that substance abuse is a method of escape from the distressing experiences associated with the illness, substance abuse is often a byproduct of schizophrenia and can moreover make treatment less effective and patients less likely to follow their treatment plan.

Multiple studies have shown that patients diagnosed with schizophrenia also have an increased risk of diabetes and cardiovascular problems regardless of gender and particularly at a younger age. Research shows that monitoring is often not adequate for these metabolic side effects.

Better and more integrated care is essential for people living with schizophrenia. On the **NAMI Hearts & Minds** website, you can find tools and information on fostering a culture of activity, self-care and support around maintaining a healthier lifestyle.

When someone is diagnosed with schizophrenia it is not uncommon that another medical or psychiatric condition also occur. Understandably it is important that all aspects of care are coordinated, especially medications. Other medications can include over the counter medicine, vitamins, minerals and herbal supplements.

As mentioned previously, it is not uncommon for people living with schizophrenia to experience depression, although it may be difficult to distinguish depression from negative symptoms that affect someone's ability to display emotions. However, if symptoms of depression are being experienced, it is important to address them as it may significantly increase the likelihood of suicide.

## Cognitive Therapy

While medication can provide benefits in alleviating some of the symptoms of schizophrenia, according to multiple scientific **studies**, psychiatric rehabilitation, which can include practice, special training and other treatment-like procedures, is a vital aspect for helping patients learn social and living skills to aid in their entrance into everyday society.

**Cognitive Behavioral Therapy (CBT)** has been shown to be an effective part of a treatment for some people living with affective disorders. With more serious disorders, including schizophrenia and psychoses, additional cognitive therapy is added to basic CBT and is known as CBTp. CBT is commonly used in the United Kingdom, but is becoming more widely available in the US. Individuals turn to CBTp to help prevent relapse, prevent the further development of psychosis and to develop proactive coping strategies to help handle persistent symptoms that do not respond to medicine. However, while CBTp has been effective in the latter, it has not been shown to be as effective in preventing relapse.

Peer support groups like **NAMI Peer-to-Peer** and **WRAP** (Wellness Recovery Action Plan) encourage involvement in recovery by working on social skills with others. The Illness Management Recovery (IMR) model is an evidence-based approach that emphasizes setting goals and acquiring skills to meet those goals.

Complimentary and Alternative Medicine (CAM) is another option when considering how to treat schizophrenia. Defining



what CAM is difficult largely because "unconventional" medicine has not been studied to the degree that conventional medicine has. Conventional medicine is generally characterized as Western medicine. Examples of this alternative therapy include yoga, meditation and acupuncture. While many people often dismiss CAM, 38 percent of adults used some feature of CAM. Many CAM practices embody the idea of connecting the mind and body in an attempt to provide greater recovery. To learn more about the basics of what CAM is, go to the National Institute of Health's, [National Center for Complementary and Alternative Medicine](#).

## The Social Aspect of Schizophrenia

### Family-specific Support

For people living with schizophrenia, support from family and loved ones is some of the most important medication that can be provided. Families who are educated about schizophrenia can offer strong support and help reduce the likelihood of relapse. The key is to be in tune with what the person is open to at any given time. For example, arguing with an individual about delusions when they do not believe they are having any creates distances and is usually ineffective. Instead, empathizing with someone's distress or success is more likely to foster positive outcomes.

A person providing care for a person living with schizophrenia faces many challenges. One of the hardest is finding ways to support and protect their loved one while allowing room for self-reliance. Every family is different, but family structures tend to vary from culture to culture, with certain groups, like Latino cultures, tending to benefit from treatment solutions that involve the entire family. However, when the stress of care giving is placed on only a few individuals, they themselves may begin to exhibit signs of psychological distress. Mood disorders, **such as depression**, can occur 40 percent of the time, three times the rate of the general Latino population. Caregiver burnout is not only found in Latino populations but in **all groups** providing support to patients living with schizophrenia.

Families should also become educated about health privacy laws and legal aspects of providing care for an adult living with schizophrenia who does not understand that they may need treatment.

The [Treatment Advocacy Center](#) has state-by-state information regarding commitment laws. Psychiatric advance directives, which allow individuals to designate treatment and contact persons in case they are unable to make their own decisions, can be another tool. State-by-state information on psychiatric advance directives is available at [The National Resource Center on Psychiatric Advance Directives](#).

Because of the confusing path and strain that providing help for a loved one with schizophrenia entails, family members often find it helpful to maintain a journal of all medications, medical visits, treatments and legal actions that have they have undertaken. Having this information can be useful when switching providers or dealing with a crisis.

For all of these reasons, family members should seek support for their own needs from groups specially designed for families, such as [NAMI's Family-to-Family](#) educational group.

### Employment

**Seventy-three percent to 90 percent** of individuals diagnosed with schizophrenia are unemployed, and those who are employed only work part time or are employed in non-competitive jobs. However, this is not because people living with schizophrenia do not wish to be employed. Research suggests that as many as 70 percent of patients would like to be engaged in competitive employment.

Being employed not only produces a sense of accomplishment but also improves social skills by providing the individual with in social situations than in isolated settings, which tends to exacerbate negative symptoms. As a [review of schizophrenia research](#) notes, unemployment is not symptomatic of schizophrenia but rather a byproduct of the social and economic pressures that individuals living with schizophrenia face.

However, supported employment opportunities are scarce. A good place to begin searching for employment aid is your local Office of Vocational Rehabilitation (OVR) or hospitals, which also occasionally offer supported employment opportunities or referrals.

People receiving Social Security benefits used to the run the risk of losing their eligibility if they began to work, but the new [Ticket to Work program](#) gives people more freedom to pursue employment.

# Psychotherapies

---

## What is psychotherapy?

Psychotherapy, or "talk therapy", is a way to treat people with a mental disorder by helping them understand their illness. It teaches people strategies and gives them tools to deal with stress and unhealthy thoughts and behaviors. Psychotherapy helps patients manage their symptoms better and function at their best in everyday life.

Sometimes psychotherapy alone may be the best treatment for a person, depending on the illness and its severity. Other times psychotherapy is combined with medications. Therapists work with an individual or families to devise an appropriate treatment plan.

## What are the different types of psychotherapy?

Many kinds of psychotherapy exist. There is no "one-size-fits-all" approach. In addition, some therapies have been scientifically tested more than others. Some people may have a treatment plan that includes only one type of psychotherapy. Others receive treatment that includes elements of several different types. The kind of psychotherapy a person receives depends on his or her needs.

This section explains several of the most commonly used psychotherapies. However, it does not cover every detail about psychotherapy. Patients should talk to their doctor or a psychotherapist about planning treatment that meets their needs.

### Cognitive Behavioral Therapy

Cognitive behavioral therapy (CBT) is a blend of two therapies: cognitive therapy (CT) and behavioral therapy. CT was developed by psychotherapist Aaron Beck, M.D., in the 1960's. CT focuses on a person's thoughts and beliefs how they influence a person's mood and actions, and aims to change a person's thinking to be more adaptive and healthy. Behavioral therapy focuses on a person's actions and aims to change unhealthy behavior patterns.

CBT helps a person focus on his or her current problems and how to solve them. Both patient and therapist need to be actively involved in this process. The therapist helps the patient learn how to identify distorted or unhelpful thinking patterns, recognize and change inaccurate beliefs, relate to others in more positive ways, and change behaviors accordingly.

CBT can be applied and adapted to treat many specific mental disorders.

#### **CBT for depression**

Many studies have shown that CBT is a particularly effective treatment for depression, especially minor or moderate depression. Some people with depression may be successfully treated with CBT only. Others may need both CBT and medication. CBT helps people with depression restructure negative thought patterns. Doing so helps people interpret their environment and interactions with others in a positive and realistic way. It may also help a person recognize things that may be contributing to the depression or help him or her change behaviors that may be making the depression worse.

#### **CBT for anxiety disorders**

CBT for anxiety disorders aims to help a person develop a more adaptive response to a fear. A CBT therapist may use exposure therapy to treat certain anxiety disorders, such as a specific phobia, post-traumatic stress disorder, or obsessive compulsive disorder. Exposure therapy has been found to be effective in treating anxiety-related disorders.<sup>1</sup> It works by helping a person confront a specific fear or memory while in a safe and supportive environment. The main goals of exposure therapy are to help patients learn that anxiety can lessen over time and give him or her the tools to cope with fear or traumatic memories.

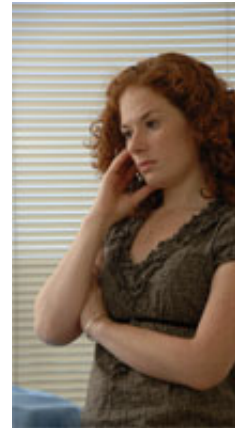
A [recent study](#) sponsored by the Centers for Disease Control and Prevention concluded that CBT is effective in treating trauma-related disorders in children and teens.

#### **CBT for bipolar disorder**

People with bipolar disorder usually need to take medication, such as a mood stabilizer. But CBT is often used as an added treatment. The medication can help stabilize a person's mood so that he or she is receptive to psychotherapy and can get the most out of it. CBT can help a person cope with bipolar symptoms and learn to recognize when a mood shift is about to occur. CBT also helps a person with bipolar disorder stick with a treatment plan to reduce the chances of relapse (e.g., when symptoms return).

#### **CBT for eating disorders**

Eating disorders can be very difficult to treat. However, some small studies have found that CBT can help reduce the risk of relapse in adults with anorexia who have restored their weight.<sup>3</sup> CBT may also reduce some symptoms of bulimia, and it may also help



Treating schizophrenia with CBT is challenging. The disorder usually requires medication first. But research has shown that CBT as an add-on to medication, can help a patient cope with schizophrenia.<sup>5</sup> CBT helps patients learn more adaptive and realistic interpretations of events. Patients are also taught various coping techniques for dealing with "voices" or other hallucinations. They learn how to identify what triggers episodes of the illness, which can prevent or reduce the chances of relapse.

CBT for schizophrenia also stresses skill-oriented therapies. Patients learn skills to cope with life's challenges. The therapist teaches social, daily functioning, and problem-solving skills. This can help patients with schizophrenia minimize the types of stressors that can lead to outbursts and hospitalizations.

### **Dialectical Behavior Therapy**

Dialectical behavior therapy (DBT), a form of CBT, was developed by Marsha Linehan, Ph.D. At first, it was developed to treat people with suicidal thoughts and actions. It is now also used to treat people with [borderline personality disorder](#) (BPD). BPD is an illness in which suicidal thinking and actions are more common.

The term "dialectical" refers to a philosophic exercise in which two opposing views are discussed until a logical blending or balance of the two extremes—the middle way—is found. In keeping with that philosophy, the therapist assures the patient that the patient's behavior and feelings are valid and understandable. At the same time, the therapist coaches the patient to understand that it is his or her personal responsibility to change unhealthy or disruptive behavior.

DBT emphasizes the value of a strong and equal relationship between patient and therapist. The therapist consistently reminds the patient when his or her behavior is unhealthy or disruptive—when boundaries are overstepped—and then teaches the skills needed to better deal with future similar situations. DBT involves both individual and group therapy. Individual sessions are used to teach new skills, while group sessions provide the opportunity to practice these skills.

Research suggests that DBT is an effective treatment for people with BPD. A recent NIMH-funded study found that DBT reduced suicide attempts by half compared to other types of treatment for patients with BPD.<sup>6</sup>

### **Interpersonal Therapy**

Interpersonal therapy (IPT) is most often used on a one-on-one basis to treat depression or dysthymia (a more persistent but less severe form of depression). The current manual-based form of IPT used today was developed in the 1980's by Gerald Klerman, M.D., and Myrna Weissman, M.D.

IPT is based on the idea that improving communication patterns and the ways people relate to others will effectively treat depression. IPT helps identify how a person interacts with other people. When a behavior is causing problems, IPT guides the person to change the behavior. IPT explores major issues that may add to a person's depression, such as grief, or times of upheaval or transition. Sometimes IPT is used along with antidepressant medications.

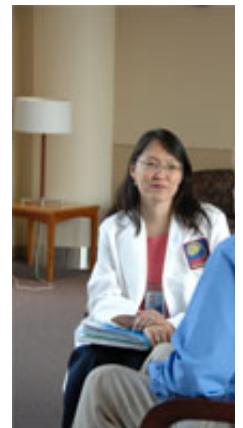
IPT varies depending on the needs of the patient and the relationship between the therapist and patient. Basically, a therapist uses IPT to help the patient identify troubling emotions and their triggers. The therapist helps the patient learn to express appropriate emotions in a healthy way. The patient may also examine relationships in his or her past that may have been affected by distorted mood and behavior. Doing so can help the patient learn to be more objective about current relationships. Studies vary as to the effectiveness of IPT. It may depend on the patient, the disorder, the severity of the disorder, and other variables. In general, however, IPT is found to be effective in treating depression.<sup>7</sup>

A variation of IPT called interpersonal and social rhythm therapy (IPSRT) was developed to treat bipolar disorder. IPSRT combines the basic principles of IPT with behavioral psychoeducation designed to help patients adopt regular daily routines and sleep/wake cycles, stick with medication treatment, and improve relationships. Research has found that when IPSRT is combined with medication, it is an effective treatment for bipolar disorder. IPSRT is as effective as other types of psychotherapy combined with medication in helping to prevent a relapse of bipolar symptoms.<sup>8</sup>

### **Family-focused Therapy**

Family-focused therapy (FFT) was developed by David Miklowitz, Ph.D., and Michael Goldstein, Ph.D., for treating bipolar disorder. It was designed with the assumption that a patient's relationship with his or her family is vital to the success of managing the illness. FFT includes family members in therapy sessions to improve family relationships, which may support better treatment results.

Therapists trained in FFT work to identify difficulties and conflicts among family members that may be worsening the patient's illness. Therapy is meant to help members find more effective ways to resolve those difficulties. The therapist educates family members about their loved one's disorder, its symptoms and course, and how to help their relative manage it more effectively. When families learn about the disorder, they may be able to spot early signs of a relapse and create an action plan that involves family members. During therapy, the therapist will help family members recognize when they express unhelpful criticism or hostility.



FFT also focuses on the stress family members feel when they care for a relative with bipolar disorder. The therapy aims to protect family members from "burning out" or disengaging from the effort. The therapist helps the family accept how bipolar disorder can limit their relative. At the same time, the therapist holds the patient responsible for his or her own well being and actions to a level that is appropriate for the person's age.

Generally, the family and patient attend sessions together. The needs of each patient and family are different, and those needs determine the exact course of treatment. However, the main components of a structured FFT usually include:

- Family education on bipolar disorder
- Building communication skills to better deal with stress, and
- Solving problems together as a family.

It is important to acknowledge and address the needs of family members. Research has shown that primary caregivers of people with bipolar disorder are at increased risk for illness themselves. For example, a 2007 study based on results from the NIMH-funded [Systematic Treatment Enhancement Program for Bipolar Disorder \(STEP-BD\)](#) trial found that primary caregivers of participants were at high risk for developing sleep problems and chronic conditions, such as high blood pressure. However, the caregivers were less likely to see a doctor for their own health issues.<sup>12</sup> In addition, a 2005 study found that 33 percent of caregivers of bipolar patients had clinically significant levels of depression.<sup>13</sup>

### **Are psychotherapies different for children and adolescents?**

Psychotherapies can be adapted to the needs of children and adolescents, depending on the mental disorder. For example, the NIMH-funded [Treatment of Adolescents with Depression Study \(TADS\)](#) found that CBT, when combined with antidepressant medication, was the most effective treatment over the short term for teens with major depression.<sup>14</sup> CBT by itself was also an effective treatment, especially over the long term. Studies have found that individual and group-based CBT are effective treatments for child and adolescent anxiety disorders.<sup>15</sup> Other studies have found that IPT is an effective treatment for child and adolescent depression.<sup>16,17</sup>

Psychosocial treatments that involve a child's parents and family also have been shown to be effective, especially for disruptive disorders such as conduct disorder or oppositional defiant disorder. Some effective treatments are designed to reduce the child's problem behaviors and improve parent-child interactions. Focusing on behavioral parent management training, parents are taught the skills they need to encourage and reward positive behaviors in their children.<sup>18</sup> Similar training helps parents manage their child's attention deficit/hyperactivity disorder (ADHD). This approach, which has been shown to be effective, can be combined with approaches directed at children to help them learn problem-solving, anger management and social interaction skills.<sup>19</sup>



Family-based therapy may also be used to treat adolescents with eating disorders. One type is called the Maudsley approach, named after the Maudsley Hospital in London, where the approach was developed. This type of outpatient family therapy is used to treat anorexia nervosa in adolescents. It considers the active participation of parents to be essential in the recovery of their teen. The Maudsley approach proceeds through three phases:

*Weight restoration.* Parents become fully responsible for ensuring that their teen eats. A therapist helps parents better understand their teen's disease. Parents learn how to avoid criticizing their teen, but they also learn to make sure that their teen eats.

*Returning control over eating to the teen.* Once the teen accepts the control parents have over his or her eating habits, parents may begin giving up that control. Parents are encouraged to help their teen take more control over eating again.

*Establishing healthy adolescent identity.* When the teen has reached and maintained a healthy weight, the therapist helps the teen or her begin developing a healthy sense of identity and autonomy.

Several studies have found the Maudsley approach to be successful in treating teens with anorexia.<sup>20,21</sup> Currently a [large-scale](#)

## What other types of therapies are used?

In addition to the therapies listed above, many more approaches exist. Some types have been scientifically tested more than others. Also, some of these therapies are constantly evolving. They are often combined with more established psychotherapies; a few examples of other therapies are described here.

**Psychodynamic therapy.** Historically, psychodynamic therapy was tied to the principles of psychoanalytic theory, which assert that a person's behavior is affected by his or her unconscious mind and past experiences. Now therapists who use psychodynamic therapy rarely include psychoanalytic methods. Rather, psychodynamic therapy helps people gain greater self-awareness and understanding about their own actions. It helps patients identify and explore how their nonconscious emotions and motivations influence their behavior. Sometimes ideas from psychodynamic therapy are interwoven with other types of therapy, like CBT or to treat various types of mental disorders. Research on psychodynamic therapy is mixed. However, a review of 23 clinical trials involving psychodynamic therapy found it to be as effective as other established psychotherapies.<sup>22</sup>

**Light therapy.** Light therapy is used to treat seasonal affective disorder (SAD), a form of depression that usually occurs during autumn and winter months, when the amount of natural sunlight decreases. Scientists think SAD occurs in some people when their bodies' daily rhythms are upset by short days and long nights. Research has found that the hormone melatonin is affected by this seasonal change. Melatonin normally works to regulate the body's rhythms and responses to light and dark. During light therapy, a person sits in front of a "light box" for periods of time, usually in the morning. The box emits a full spectrum light, and sitting in front of it appears to help reset the body's daily rhythms. Also, some research indicates that a low dose of melatonin, taken at specific times of the day, can also help treat SAD.<sup>23</sup>

Other types of therapies sometimes used in conjunction with the more established therapies include:

**Expressive or creative arts therapy.** Expressive or creative arts therapy is based on the idea that people can help heal themselves through art, music, dance, writing, or other expressive acts. One study has found that expressive writing can reduce depression symptoms among women who were victims of domestic violence.<sup>24</sup> It also helps college students at risk for depression.<sup>25</sup>

**Animal-assisted therapy.** Working with animals, such as horses, dogs, or cats, may help some people cope with trauma, develop empathy, and encourage better communication. Companion animals are sometimes introduced in hospitals, psychiatric wards, nursing homes, and other places where they may bring comfort and have a mild therapeutic effect. Animal-assisted therapy has also been used as an added therapy for children with mental disorders. Research on the approach is limited, but a recent study found it to be moderately effective in easing behavioral problems and promoting emotional well-being.<sup>26</sup>

**Play therapy.** This therapy is used with children. It involves the use of toys and games to help a child identify and talk about his or her feelings, as well as establish communication with a therapist. A therapist can sometimes better understand a child's problems by watching how he or she plays. Research in play therapy is minimal.

## What research is underway to improve psychotherapies?

Researchers are continually studying ways to better treat mental disorders with psychotherapy, and many NIMH-funded studies are underway. For more information about NIMH-funded clinical trials involving psychotherapies, see the [NIMH Clinical Trials](#) page.

## What is tardive dyskinesia?

Tardive dyskinesia (TD) is one of the most disturbing potential side effects of antipsychotic medications. Tardive (late) Dyskinesia (bad movement) is a movement disorder that occurs over months, years and even decades. TD is a principle concern of first generation antipsychotic medication but has been reported in second generation antipsychotic medication and needs to be monitored for all people who take these medications.

TD is one of a group of side effects called “extrapyramidal symptoms” that includes akathisia (restlessness), dystonia (sudden and painful muscle stiffness) and Parkinsonism (tremors and slowing down of all body muscles. TD is perhaps the most severe of these side effects and does not occur until after many months or years of taking antipsychotic drugs. TD is primarily characterized by random movements of different muscles within the body and can occur in the tongue, lips or jaw (e.g., facial grimacing), or consist of purposeless movements of arms, legs, fingers and toes. In some severe cases, TD can include swaying movements of the trunk or hips or affect the muscles associated with breathing. TD can be quite embarrassing and—depending on its severity—can be disabling as well.

Because there are a number of other medical and neurological conditions that can cause uncontrollable or strange body movements, a long history of treatment with antipsychotics must be documented before diagnosis with TD is even considered. For example, a number of neurological and muscular may cause uncontrollable body movements including Parkinson’s disease, Huntington’s disease and strokes. Therefore, any person with the onset of uncontrollable movements should discuss these symptoms with their doctors.

## Who is at risk for developing tardive dyskinesia?

Many people with serious and chronic mental illness, such as [schizophrenia](#), require long term treatment with antipsychotic medications. While ongoing antipsychotic treatment can be very helpful or even life-saving for many people, it comes with the risk of developing TD. Not all people exposed to long term treatment with antipsychotics will develop TD and some people are at increased risk for developing this side effect when compared with others. Some common risk factors for developing TD are:

- Longer duration of treatment with [antipsychotic medications](#).
- Exposure to high-potency first generation antipsychotics (e.g., haloperidol (Haldol), fluphenazine (Prolixin), risperidone (Risperdal]) as opposed to certain newer—“Second Generation”—antipsychotics (e.g., clozapine (Clozaril), quetiapine (Seroquel)).
- Older age of the individual receiving these medications (sp. post-menopausal females).
- Having alcoholism or another [substance abuse disorder](#).
- Being female.

- Being of African-American or Asian ethnicity.

The exact neurological basis of TD is still unknown despite extensive research. All antipsychotic medications change the activity of a chemical within the brain involved in communication between neurons (a neurotransmitter called “Dopamine”). While this is useful in decreasing the [symptoms of psychosis](#), such as delusions and hallucinations, it also changes the brain’s ability to coordinate the body’s muscular movements.

Due to a number of factors, it is very difficult to determine exactly who will develop TD or what the exact risk of developing TD might be for a person treated with antipsychotic medications. Some scientific studies suggest that approximately 5 percent of people treated with antipsychotics will develop TD for each year of treatment and that the overall risk of developing TD over the course of one’s ongoing treatment is between 30 to 50 percent.

### **Are there effective treatments for tardive dyskinesia?**

The most effective treatment for TD is *prevention*. Because usually months to years of antipsychotic treatment pass before the onset of TD, a person taking medications should see their psychiatrist for regular evaluations to ensure that any signs of TD are recognized before they become severe. Most psychiatrists will use a standardized rating scale called “The Abnormal Involuntary Movement Scale”—*AIMS* for short—to screen for TD at least once each year. This can help to stop TD before it starts.

The majority of people who develop TD will find that it is mild and reversible and the percentage of patients who develop severe or irreversible TD is quite low. For people who are developing the signs and symptoms of TD, the most important thing to do is to talk with their psychiatrist. Decreasing the dose of one’s antipsychotic medications is often the most effective treatment. Many people will find that their symptoms improve significantly at lower doses of antipsychotics. If this is not possible or does not relieve the symptoms of TD, some psychiatrists may recommend switching from one medication to a different one. However, this can also lead to the worsening of psychotic symptoms, which further emphasizes the importance of having a long discussion with one’s psychiatrist prior to making any changes.

Unfortunately there is no medication that can cure TD. A number of different medications have been studied—including benzodiazepines (e.g., lorazepam (Ativan), clonazepam (Klonopin)), anticholinergic medications (e.g., benzotropine (Cogentin)), and supplements (e.g., Vitamin E, branched chain amino acids, Gingko Biloba)—but it remains unclear whether any of them can prevent or treat TD at the current time. The antipsychotic clozapine may have some efficacy in selected cases of TD.

*Reviewed by Ken Duckworth, M.D. and Jacob L. Freedman, M.D., October 2012*