

# Electroconvulsive Therapy

## WHAT IS ELECTROCONVULSIVE THERAPY?

**E**lectroconvulsive therapy (ECT) is a medical treatment that psychiatrists use to treat mood disorders such as severe depression, mania, schizophrenia, and other psychiatric and neurological disorders.

ECT is administered under safe and highly controlled medical circumstances, sometimes with the assistance of an anesthesiologist. During the treatment and the recovery period, the person's pulse, blood pressure, heart rhythm, and blood oxygen concentration are carefully monitored. When the ECT is given, a sophisticated machine passes a precisely controlled electric current through a person's scalp and induces a seizure throughout the brain. Because the patient has received anesthesia and a drug that briefly paralyzes the muscles, an observer will notice only small movements of the patient's fingers, toes, and eyelids. However, the seizure activity will be very apparent on the ECT machine's brain wave monitor, where a characteristic pattern of waves can be seen. The seizure lasts about a minute and is followed by a quiet, relaxed state. When the person awakes, he or she is comfortable but a little disoriented, a problem that resolves within minutes. After the treatment, the person is given liquids and light food, and he or she is promptly able to walk around without help.

Most patients receive six to 12 ECT treatments, which usually are administered three times per week. After these initial ECT treatments, continued care is essential to prevent return of symptoms. Such treatment usually involves medications (such as antidepressants or mood stabilizers) and psychotherapy. Some people, especially those who have not responded to medications or who cannot tolerate the side effects of medications, may benefit from receiving further treatment with ECT. For such individuals, ECT is administered far less frequently (once a month as a maintenance dose, for example).

## HOW DOES ECT WORK?

Early in the 20th century, scientists discovered that mood improved in some people with psychiatric illnesses after they had a seizure. This led to the development of methods by which seizures could be electrically induced.

Scientists still do not know the exact mechanism by which ECT produces its benefits. However, they do know that a seizure mobilizes brain chemicals called neurotransmitters. The effect is that brain cell activity is changed in much the same way as it is by antidepressant medications and perhaps by other mechanisms of action as well. However, ECT works more quickly than antidepressants and is often successful when antidepressants have not worked. Like many effective treatments in medicine, the effectiveness of ECT continues to lack an exact explanation, but this does not diminish its value in providing relief from mental pain and suffering.

## WHAT CONDITIONS DOES ECT HELP?

ECT is highly effective in treating depression. Studies have shown that 70 to 80 percent of people improve after six to 12 treatments, with even higher rates of improvement for people receiving ECT as a first-line treatment. For most people with depression, however, medications are the first-line treatment. ECT is an important alternative for those who do not improve after taking medications, who cannot tolerate side effects of medications, or who are at high risk of suicide or medical complications of severe depression.

ECT is also the most effective treatment available for depression that is accompanied by agitation or psychosis or that is characterized by acute and discrete episodes of illness. With psychotic depression, people cannot distinguish what is real from their unreal thoughts and perceptions. They may have hallucinations (hearing, seeing, or feeling things that are not



there) or delusions (persistent false beliefs, such as thinking someone is trying to hurt them). Catatonia (in which a person is immobile and does not react to his or her surroundings) is also very responsive to ECT.

Although used less commonly, ECT also can effectively treat severe mania (in which excitement, sleeplessness, impulsiveness, and severe irritability threaten the well-being of the individual and those around him or her). Symptoms of schizophrenia, particularly psychosis, may also respond to ECT when medications have not been helpful. Recent studies also show that ECT can be effective in other medical and neurological disorders, such as Parkinson's disease or seizures (caused by neurological disease) that cannot be stopped by treatment with medications.

### WHAT ARE THE SIDE EFFECTS OF ECT?

ECT is a remarkably safe treatment that is provided under carefully controlled medical conditions. As with any medical treatment, people who receive ECT differ considerably in the extent to which they experience side effects. However, a thorough medical evaluation before the start of ECT and extensive monitoring at the time of ECT reduce the chance of medical complications. Occasionally, ECT results in irregularities in heart rate or rhythm, but these are usually mild and short lasting. Very rarely, ECT can result in serious medical complications, and there are the potential complications of general anesthesia, which are explained to the patient as a part of the consent process (see below).

Immediately after treatment, some people experience headache, mild nausea, or muscle soreness. Confusion is another common side effect that goes away in a few minutes to a few hours, depending on the person. Problems with memory also occur but improve after the completion of ECT. Some patients will have spotty gaps in memory of events that occurred in the weeks before the course of treatment. More frequently, people who receive ECT will have trouble remembering events immediately before and during the day of each treatment. Their recall of the weeks from the beginning to the end of the treatments will be hazy. This happens because ECT temporarily interferes with the storage of new memories. However, studies show that ECT does not impair future learning. In fact, because depression and other mental illnesses interfere greatly with concentration and memory, many people will report improved mental functioning after ECT.

### CAN ECT BE GIVEN AGAINST A PERSON'S WILL?

As with all medical procedures, ECT requires informed, written permission (consent). There are protections built into state law, which vary from state to state. A psychiatrist must explain the treatment and what to expect as well as the risks and benefits of ECT

compared with other treatment options. Any patient who gives written permission for ECT can withdraw that consent at any time, thereby ending the treatment. The American Psychiatric Association (APA) recently updated its recommendations for obtaining written consent for ECT. In addition to the need for written permission, key elements of the APA consent recommendations include the importance of a careful explanation of all aspects of the treatment and the patient's right to refuse ECT.

When a person is too ill or confused to provide informed consent, specific state laws and regulations outline the procedure that must be followed. Typically, this involves having a judge decide whether the treatment should occur or having a family member or other individual appointed by the court as a temporary guardian who can give or withhold consent on the patient's behalf.

### ECT HAS BEEN PORTRAYED AS CRUEL AND BARBARIC. IS IT?

Decades ago, when ECT was first used to treat psychiatric illnesses, effective short-acting anesthesia and muscle-relaxing medications were not available. Consequently, ECT would produce a violent grand mal seizure in which patients could be injured. In *One Flew Over the Cuckoo's Nest*, the 1975 movie starring Jack Nicholson that was set in a psychiatric hospital in 1950s, ECT was portrayed as a painful and excessive treatment. Consequently, many people still think of ECT as barbaric.

Today, however, people are given a short-acting anesthetic, which puts them to sleep for several minutes, before they receive ECT. They also receive muscle-relaxing medication so the brain seizure does not cause major muscle spasms in the rest of the body. The effect of the treatment is hardly visible beyond brief contractions of the eyelids, fingers, and toes. In addition, substantial scientific evidence indicates that ECT does not cause any damage to the brain, nor does it increase a person's risk of developing a seizure disorder. Unfortunately, many old-fashioned ideas about ECT persist, frightening people whose mental illness already causes them great distress.

If your physician or psychiatrist recommends ECT, don't rule it out because of outdated stereotypes. The truth is that ECT works rapidly and is extremely effective. As administered today, ECT is also quite safe and sometimes has fewer side effects than medications. Get the facts about your treatment options, and ask your psychiatrist about the benefits and safety of ECT.

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