

What is electroconvulsive therapy (ECT)?

Electroconvulsive therapy (ECT) is one of the most studied and most effective treatments for selected severe mental illness such as major depression with psychotic feature. ECT has received much attention in the mainstream media: both negative and positive. While ECT carries a long history of negative connotations, it can be a life-saving procedure for many people and is a relatively safe procedure that is only performed under the supervision of trained healthcare professionals. In some illnesses, ECT can be up to 90 percent effective in reducing the severity of symptoms. ECT has important risks to weigh as well, including the medical risks of the procedure itself (typically small) and problems with memory that may continue after the treatments end (sometimes related to the number of treatments).

ECT is a treatment of choice for over tens of thousands of Americans each year. Since it was first performed, ECT has become safer and more successful in helping people who require immediate treatment, people who cannot be treated with psychiatric medications, and people who have not responded to other psychiatric treatments. While it carries significant risks, many potential consequences of ECT can be prevented by a thorough consultation with a non-psychiatric medical doctor prior to beginning treatment. The cognitive and memory side-effects of ECT are usually not permanent, but it is advised that any person considering treatment with ECT discuss this and other issues with their psychiatrist.

ECT is regularly performed in hospitals by a medical team that consists of psychiatrists, anesthesiologists, nurses and other healthcare professionals. ECT begins when an anesthesiologist administers medications to cause the patient to lose consciousness. This ensures that the patient will not experience any physical pain associated with their treatment. The psychiatrist will then use a machine that delivers an electrical shock to the patient's brain. This causes the patient to experience a controlled seizure that lasts in most situations for less than one to two minutes.

The seizure causes activation of neurons throughout the brain and changes in many of the chemicals in a person's brain. It is thought that these actions then result in a decrease in the symptoms of mental illness. Usually ECT is "unilateral" in that a seizure is started only on one side of the brain. Sometimes when people are not responding to this treatment alone, ECT is done "bilaterally" and seizures are started on both sides of the brain. This can be more effective but also carries a greater risk of side-effects, especially memory and cognitive-related side effects.

Depending on their illness, most people will have between four and six treatments before their symptoms show significant improvement. Most patients will continue to have regular treatments until their symptoms are significantly decreased. Some patients will then continue to have "maintenance ECT" on a less frequent schedule (e.g., once per week, once every other week, once per month).

Who will benefit from treatment with ECT?

Treatment with ECT is highly effective and works rapidly when compared with other psychiatric treatments for the right conditions. While some antidepressants may take between two to three months to have a complete effect, some people who are treated with ECT may begin to feel better within one week of beginning their treatment.

ECT is specifically valuable in the treatment of severe depression and depression with psychosis. In some patients who do not improve with multiple medication treatments, ECT may be the only treatment that effectively controls their symptoms. ECT is often used in patients with severe suicidal thoughts or behaviors as it works significantly faster than other treatments to decrease these distressing symptoms. It can also work to reverse complex symptoms of mania that may have been treatment resistant. ECT can be employed for a presentation known as catatonia. It is not indicated for anxiety disorders, substance abuse disorders, and personality disorders.

What are the risks of ECT?

As it is now practiced, ECT is a much safer procedure than it was in earlier decades. In fact, while ECT may be associated with significant side-effects, the most common side-effects of ECT are headaches and muscle pain that normally go away shortly after each treatment. Cognitive and memory side-effects may require regular assessment by a clinician. As with any other medical or surgical procedure requiring anesthesia, there are risks associated with receiving the sedating medications involved in anesthesia. Therefore, ECT may not be recommended in people with other severe medical illnesses including heart, lung and neurological diseases.

Many patients undergoing ECT will notice that they have some trouble with their thinking around the time that they are receiving treatment with ECT. The most common symptom is being confused following the procedure. In most people, this lasts for less than a few hours and is the result of having had a seizure and having received anesthesia.

Somewhere between one-quarter to two-thirds of people receiving ECT will have memory problems as a result of ECT. Some people will experience trouble forming new memories and remembering things that happen after they start receiving ECT but usually disappears within a few days to weeks of stopping treatment. Some people will experience trouble remembering things that happened to them before they started ECT and this often lasts longer. The risks of ECT are substantial but so is its power to reverse life threatening symptoms for selected severe mental illnesses.

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