

ECT, TMS and Other Brain Stimulation Therapies



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Brain stimulation therapies use electricity, magnets, or implants directly on the brain. A psychiatrist might suggest electroconvulsive therapy (ECT) or other forms of brain stimulation when medication and therapy are not able to take away the symptoms of a mental health condition or mental illness.

Electroconvulsive Therapy (ECT)

ECT is a procedure where electric currents are passed through the brain, giving the person a short, controlled seizure. The person is given some anesthesia to be asleep during the procedure. They will wake up after 5-10 minutes. They can go back to their regular activities in about an hour.

ECT is often used to treat severe depression and depression with psychosis, and some cases of bipolar disorder. Most people have 4-6 treatments before major improvement is seen. Side effects may include:

- Headaches, muscle pain, nausea
- Confusion, which may last a few minutes or hours
- Memory loss, which can be as small as forgetting conversations or forgetting events right before/after a treatment, forgetting things from weeks or months ago, and less commonly, from years before.

Transcranial Magnetic Stimulation (TMS)

TMS is used to improve symptoms of depression. A large coil is placed on a person's forehead and short pulses are sent into an area of the brain believed to control moods. TMS takes about 40 minutes and does not need anesthesia so, a person will be awake during the session. Multiple sessions are needed over a period of weeks.

TMS should not be used to treat anyone who has depression with psychosis, bipolar disorder, or are at a high risk of suicide. It is not for persons who have a pacemaker or other metal objects in their body. Side effects of TMS are usually mild and may include:

- Muscle contractions or tingling in the face or the jaw
- Headache or light-headedness
- Seizures, if a person has a history of seizures

Other Brain Stimulation Therapies

ECT and TMS are the most used brain stimulation therapies, but there are two other options available. However, they are still being studied so their effectiveness and safety remain unknown.

- **Vagus Nerve Stimulation (VNS).** A pulse generator, about the size of a stopwatch, is placed in the upper left side of the chest. With electrical pulses, messages are carried to parts of the brain that control mood and sleep, with electrical impulses. VNS can be used to treat depression, and other medical conditions, including epilepsy. VNS is controversial and rarely used.
- **Deep Brain Stimulation (DBS).** Surgery is done to put metal plates directly in the brain and a pulse generator in a person's chest. There are possible side effects from either the surgery or stimulation. DBS is FDA approved for use in treating obsessive-compulsive disorder (OCD).