

Electroconvulsive Therapy (ECT)

Patient Information Sheet

What is Electroconvulsive Therapy?

Electroconvulsive Therapy, more commonly known as "ECT", is a medical treatment for severe mental illnesses. The brain works through complex electrochemical processes. These processes may be affected in certain types of mental illnesses. ECT works by inducing a brief and mild seizure under general anesthesia. The seizure releases neurochemicals in the brain, downregulates receptors resulting in antidepressant action, increases blood flow and helps with neuroplasticity (the brain's ability to adapt and change). These mechanisms help improve the patient's symptoms.

Patients require an average of six to twelve treatments given up to three times a week (Monday, Wednesday and Friday). Some patients may require more sessions to complete a course of treatment.

Why do I need this procedure?

Your doctor may recommend this course of treatment if you have depression, mania, psychosis, or other psychiatric and neurological disorders that are not responding well to oral medications or if you are unable to tolerate medications.

ECT has been found to be successful in patients with:

- Severe depression, especially those with psychotic symptoms or strong suicidal thoughts (70% response)
- Mania (84-94% response), especially in patients who are resistant to medications
- Schizophrenia (64.5% response), especially helpful where patients are treatment resistant or speed of response is important

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What are the preparations?

- You will have your blood tests and electrocardiogram (ECG) checked prior to the procedure. These tests are usually done to provide the doctor with information regarding your physical health.
- Notify your doctor if you are sensitive to or are allergic to any medications.
- Notify your doctor of any medical conditions you are suffering from. Patients with a recent heart attack, poorly controlled heart conditions, recent abnormalities in the brain (e.g. stroke) may not be suitable for ECT.
- Some medications may need to be withheld before or during ECT treatment.
- As general anesthesia is planned, there will be an overnight fast before the ECT (ECT is usually planned in the early part of the morning in TTSH).

How is the procedure performed?

- ECT is performed in the operating theatre (OT). Before each treatment, general anesthesia (to put the patient into a sleep-like state), and a muscle relaxant (to prevent injuries that can be caused by a seizure) will be given to you through an intravenous line.
- Your heart rate, blood pressure and breathing will be monitored closely. An oxygen mask and a plastic device inserted into your mouth may be used to assist with your breathing. When the anesthetic medications have taken effect, a short electrical pulse will be delivered to the front part of the brain through the skin across the temple region of your head. This will stimulate a controlled seizure that usually lasts less than a minute.
- You may remember the preparation required before the anesthetic medications take effect but you will not feel or remember the seizure because of the anesthetic medications administered.
- You will wake up after five to ten minutes, after which you will be monitored in the OT before you return to the ward.

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What are the risks and complications of ECT?

ECT is a safe treatment with a mortality rate of <2 per 100,000 treatments.

Minor side effects that are common:

- Headache, muscle soreness, nausea, confusion

These side effects get better after a while, and can be helped with simple treatment and medication.

Memory effects:

- ECT has been associated with memory difficulties; such as in remembering newly learned information or partial loss of memory for events before ECT. This usually improves over the following days and weeks. Most of these memories return over a period of days to months, with longer lasting problems reportedly rare.
- In most patients where the mental illness results in poor concentration and forgetfulness, memory improves after treatment with ECT.
- The concerns about memory difficulties can be mitigated by ECT techniques to ensure that the treatment is tailored to what your brain needs.

More serious but rare side effects:

- Heart rhythm abnormalities
- Treatment-emergent mania or hypomania - this uncommon side effect occurs in patients who may have depression associated with bipolar disorder
- Musculoskeletal complications such as fractures and dislocations are very rare as a muscle relaxant is provided
- Oral and dental complications are rare
- Prolonged seizure – this is closely monitored for and medications can be given to terminate the seizure

Anesthetic complications:

- Although rare, unexpected severe complications can occur with all general anaesthesia. These include severe allergic reactions to drugs given, heart attack, stroke and even death. An assessment of fitness for anaesthesia is conducted before the procedure.
- The risk of awareness correlates with depth of anaesthesia. Adequate anaesthetic agents adjusted to the dose you require will be given.

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What do I expect after the procedure?

You will be monitored in the Operating Theatre for about half an hour after the ECT, after which you will return to your ward. You may have your breakfast on return to the ward. Your blood pressure and heart rate will be monitored closely, and you are advised to let your nurse or doctor know if you feel unwell. Your doctor will review you for any side effects after you return to the ward and your doctor will assess and adjust the dose required for the next treatment. Some patients benefit from spacing out or tapering of ECT treatment after they are discharged from the current hospital stay.

What are the Options?

The alternative option would be to continue medication adjustment. However, medications may not be as effective or may take a longer time to take effect. ECT is usually recommended when patients have not responded well to several trials of medication or speed of response is required.

Repetitive transcranial magnetic stimulation (rTMS) is another less invasive alternative. However, it is only suitable for a select patient group and is less effective than ECT.

What will happen if I do not undergo the procedure?

Your doctor will continue your treatment with medication.