

# A Guide to Electroconvulsive Therapy (ECT) for Consumers and Carers



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# Foreword

Queensland Health highly regards and values the role consumers, carers and families play in treatment and care, as well as in the planning, delivery and evaluation of mental health services across the State.

Mental illness affects people differently. Some may find their illness impacts only moderately on their wellbeing and life, whereas others may be severely affected by their illness and finding an effective treatment may be more challenging. In many cases, Electroconvulsive Therapy (ECT) has become an accepted, safe and effective treatment for these consumers to consider. Queensland Health recommends and supports the involvement of carers and families in discussions with the consumer and mental health staff regarding treatment options including ECT.

The delivery of ECT in mental health services has improved over the years since it was first introduced in 1938. Psychiatrists are provided with specialised training, the equipment used has improved in its quality and efficiency and the side effects of the treatment have reduced. Research continues to reveal new insights on how medication and other treatments, including ECT, affect the brain. The delivery of ECT has improved for the benefit of consumers, their carers and families.

Please read this guide and write down any questions you might have to ask your doctor. Ensure that you have all the information you need and feel satisfied that you wish to proceed with ECT treatment before you sign the consent to receive ECT.

This guide aims to give you the information you need and to dispel the common misconceptions about a treatment that has historically been poorly understood. I hope that you, your carers and family will find this information useful.

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# Part 1

## 1. The history of electroconvulsive therapy (ECT)

Low level electric current was first used to induce seizures in 1938. By 1940, ECT was widely used.

During the 1950s, psychotropic medications, including sedatives, antidepressants, antipsychotics and mood stabilisers, were introduced to treat mental disorders that were previously treated with ECT. However, ECT emerged again two decades later as an effective treatment option for patients with treatment resistant illnesses and those who had adverse reactions to medication.

Since then, there has been a lot of research to make ECT safer and more effective; to be clear about the reasons for the use of ECT; and to better understand how and why ECT works.

## 2. Improvements made to ECT over the years

### 2.1 Use of muscle relaxants and anaesthesia

All patients receive an anaesthetic prior to the electrical stimulus being applied. The procedure is therefore painless.

Furthermore, to prevent muscle aches and potential injuries from ECT, muscle relaxants are given to patients immediately after the anaesthetic has been administered.

### 2.2 Placement of electrodes

In order to maximise the effectiveness of ECT, modern equipment allows doctors to choose different ways to deliver treatment. Newer alternatives can reduce memory side effect problems seen with the older treatments. Among these alternatives is the placement of the electrodes used to stimulate the brain.

ECT equipment allows the electrodes to be placed in the following positions on the patient's head:

- bitemporal – one electrode is placed on each temple
- unilateral – one electrode is placed on one of the temples, usually on the right side and one on the top of the head
- bifrontal – both electrodes are placed on the forehead.

The decision on where to place the electrodes depends on several factors, including the effectiveness of the seizure during previous ECT sessions, whether or not prior memory impairment was experienced by the patient, and the level of impairment from the illness.

### 2.3 Delivery of electrical stimulus

ECT equipment provides pulses of electric charge which can be adjusted to suit the individual patient. It is important for the doctor to tailor treatment to each individual patient and be able to choose individual stimulus doses, as patients have different levels of response to the applied stimulus. A patient's response is influenced by several factors, including the thickness of the



patient's hair and skull. These factors may impede the entry of the stimulus into the brain area which initiates the modified seizure response needed for the treatment to work effectively.

The delivered 'dose' of stimulus has to be sufficient to start the required response in the patient and be above the so called 'seizure threshold' - which may be quite different for each individual. The seizure threshold (ST) depends on the age of the patient and whether the patient has previously had ECT. With the modern ECT equipment, doctors can gradually increase the amount of stimulus applied to the patient's brain and measure the subsequent brain activity.

## 2.4 Patient monitoring during ECT

ECT is always carried out under a general anaesthetic. The anaesthetist will be informed about the patient's level of general health in advance of the ECT and any potential risks will be discussed with the patient. During ECT, the patient will be fully monitored:

- an electroencephalogram (EEG) records the electrical activity in the brain before, during and after ECT and it indicates when the seizure threshold has been reached
- a pulse oximeter monitors heart rate and the level of oxygen in the blood
- the amount of carbon dioxide in exhaled breath is measured
- blood pressure is monitored.

In addition, the anaesthetist inserts a cannula into a vein which is used to administer the anaesthetic and also enables, in the event of an emergency, any necessary medications to be administered quickly.

## 3. What effect does ECT have on the brain?

In many conditions, including severe depression, there is a change in the normal brain function and in some brain chemicals including adrenaline, serotonin and dopamine. ECT appears to balance the activity of these chemicals or 'neurotransmitters'.

The precise action of ECT, like many other treatments in medicine, remains a subject of research and discussion.

## 4. When is ECT prescribed?

### 4.1 Which medical conditions would indicate the need for ECT?

ECT is prescribed for major depression, mania, some forms of schizophrenia and a few other mental and neurological disorders, especially when the condition is causing significant distress. It is used in situations where medications have not worked; where medications may not work quickly enough when the situation is life-threatening; or where the medications might produce unacceptable side effects.

### 4.2 How can ECT improve those conditions?

A course of ECT can improve the patient's ability to think and make plans. It can improve the patient's emotional state. The doctor will discuss any further treatment that might be needed after

the course of ECT ends including medication, psychotherapy and continuation or maintenance ECT.

### 4.3 Which alternative treatments should be considered prior to ECT?

Available treatment options including medication and other forms of therapy suitable for each individual should be discussed with the doctor.

## 5. Your rights as a patient who is prescribed ECT

### 5.1 *Mental Health Act 2016 (MHA 2016)*

The MHA2016 provides a clear explanation of the regulations regarding ECT. A doctor may perform ECT on a person at an authorised mental health service (AMHS) in the following circumstances:

- for a person who is an adult–
  - with the approval of the Mental Health Review Tribunal (MHRT) if the adult is:
    - unable to give informed consent whether or not they are subject to a treatment authority, forensic order or treatment support order, or
    - subject to a treatment authority, forensic order or treatment support order, or
  - with the informed consent of the adult,
- for a person who is a minor (any person under the age of 18 years old in Queensland is considered a minor)–with the approval of the MHRT, or
- for certain involuntary patients in emergency circumstances.

A doctor must not perform ECT on a person who has the capacity to give informed consent where the doctor knows the person objects to the therapy.

### 5.2 Informed Consent

Patients who give informed consent to ECT are requested to sign an Electroconvulsive Therapy Consent form which allows for up to 12 treatments over a period of three months for acute or six months for maintenance ECT depending on the type of treatment being delivered. Patients can withdraw their consent at any time during the course of the treatment.

The following criteria are necessary for informed consent:

- consent must be in writing and signed by the patient
- consent must be given freely and voluntarily by the patient
- to have the capacity to give informed consent, the patient must be capable of the following:
  - understanding the nature and effect of decisions about their assessment and treatment; and understanding the right to consent, or not consent to healthcare
  - freely and voluntarily making decisions about their personal assessment, treatment or choosing of a nominated support person to communicate their decision to the treating doctor in some way.



If you are unable to give informed consent, you can only be given ECT following approval from the MHRT or in an emergency situation as explained below.

If you want to withdraw your consent for ECT, you should talk to your psychiatrist. In any case, you can have a friend, family member, lawyer or advocate with you for support or to represent you.

### **5.3 Emergency situations**

In exceptional circumstances, ECT can be performed without the patient's consent. This is where the ECT is necessary to save the patient's life or prevent the patient from suffering irreparable harm. A psychiatrist and the senior medical administrator for the health service must certify in writing that the ECT is necessary. This emergency certificate authorises the ECT for up to five days.

However, the psychiatrist must still also apply to the MHRT for approval for the ECT. The tribunal will have a hearing as soon as possible, usually within a few days, to decide whether the ECT can continue. Further information on the role of the MHRT is available at <http://www.mhrt.qld.gov.au/>.

## **6. Where is ECT carried out?**

### **6.1 Hospitals or medical facilities**

ECT can be administered in a dedicated suite in an authorised mental health service, declared under the MHA 2016. It is also carried out in hospitals that do not have a dedicated ECT suite. In such cases, the ECT will be delivered in an operating theatre and the patient will be returned to the mental health unit following treatment.

## 7. ECT sessions

### 7.1 The ECT medical team

Everyone on the ECT team will have completed ECT training and be credentialed in their particular field of specialty. An ECT team consists of the following:

- a psychiatrist, who either administers or supervises a medical officer who administers the ECT
- an anaesthetist, who administers the anaesthetic and monitors the patient during ECT
- a nurse, who prepares the patient for ECT and monitors the patient afterwards.

### 7.2 How long does an individual ECT treatment last?

Your treating doctor will explain the ECT process to you during the signing of consent.

### 7.3 What must you do to prepare for each ECT session?

#### Medical examination and tests

Your treating doctor may ask your General Practitioner (GP) to arrange a series of tests, which may include blood tests, electrocardiogram (ECG) and chest x-ray. As an in-patient these tests will usually be done in hospital. The treating doctor will get information about your medical history, including any previous problems with anaesthetics, any heart problems, high blood pressure or other medical problems.

Very rarely, some people have an allergy to an anaesthetic. It is important you tell us if you or anyone in your family has had an allergic reaction to anaesthetics in the past.

#### Fasting

As a general anaesthetic will be administered prior to ECT, you must fast for a period of up to six hours before treatment. If you do eat or drink anything within the fasting period, you must tell the nursing or medical staff before the treatment. Medication required before ECT on that day may be taken with a sip of water (see below).

#### Smoking

You must also refrain from smoking before treatment. As in all medical procedures, evidence is clear that the likelihood of complications increases in those who smoke.

#### Clean hair

You should shower and wash your hair the night before treatment and not use any hair products after washing your hair.

#### Clothing

You can wear comfortable loose-fitting clothing, preferably with an open front and casual shoes.

#### Make-up

No make-up or nail polish should be worn.

#### Glasses and contact lenses



Glasses can be worn but you should not wear contact lenses or at least inform the staff that the lenses are there.

## **Dentures**

Dentures can be left in to make the delivery of oxygen easier before the treatment. The dentures may then be removed and safely stored in your possessions when you are asleep.

## **Medications**

The doctor will advise you if you need to change your medications before the scheduled ECT treatment. Some medications can affect how well the ECT works. However, it is important to continue taking certain medicines, including blood pressure tablets. On the morning of the treatment, some medication might be given but only with a sip of water.

### **7.4 What happens during the actual ECT Session?**

On the day of the procedure, you will have your identity confirmed and the details of your prescribed treatment checked. You may also be asked to confirm your consent for treatment on that day.

Before the treatment you will have had an examination of your physical status to ensure that you are ready and safely prepared for the treatment.

You will receive the procedure in a treatment room on a treatment table and will be assisted by nursing staff to remove your shoes and socks.

To prepare for treatment, you will have monitoring sensors placed on your finger, head and chest. This is done to monitor your heart rate, oxygen level and response to treatment. These recordings involve no pain or discomfort.

An intravenous line (cannula) is placed in a vein by the anaesthetist so that the anaesthetic agent can be administered and you will fall asleep quickly. A mask will be placed on your face before you fall asleep to give you extra oxygen to breathe. You will then be given a muscle relaxant while you are asleep.

While you are asleep, the ECT electrodes will be placed on your scalp, and the pulsed stimulus current will be delivered by a doctor.

The doctor will monitor your brain activity after the application of the stimulus and the induced seizure will be measured and observed on an EEG trace recording.

### **7.5 What happens immediately after ECT?**

You will wake up a few minutes after the seizure is over.

As the treatment is performed whilst you are asleep, you will not experience pain or discomfort during the procedure. You will not feel the stimulus and when you wake up you will have no memory of the actual treatment.

You will then be taken into the recovery room, where you will be closely monitored during your

recovery. You may initially experience some confusion; this usually goes away within the first few hours.

Shortly after treatment, you may have a headache, muscle soreness or nausea. These symptoms usually respond to simple treatment. Please ask the staff for pain relief if needed.

The nurse will measure your blood pressure, pulse, respiration rate and will monitor your recovery from the anaesthetic.

When you have recovered adequately, you will usually be ready to eat something.

You are required to remain in the surgical care unit or ECT suite until you are able to be escorted home or back to the ward.

## 7.6 How long is a course of ECT?

The ECT consent form allows for up to 12 treatments, depending on the type of course, for up to three or six months. Typically, six to 12 treatments are administered in total. ECT treatments are usually administered two or three times a week.

The doctor will discuss with you the benefits of having received the course of ECT. They will weigh up the positives and negatives of having further treatments at regular intervals. Your opinion about your treatment response to the ECT that you had in the acute treatment course is very important and should help guide future decisions about the choice of ECT, if it is being considered. The observations and opinion of your family or other carers may also be important when deciding about further ECT.

Maintenance or Continuation ECT are sometimes the most effective way of staying well when the illness has a strong risk of recurrence. You will need to discuss the details of ECT with your doctor and complete a new consent form if further ECT is being considered.

Your doctor will discuss with you any further treatment you might need, including medication, psychotherapy and further ECT.

## 8. What are the potential side effects?

### 8.1 Immediately after the treatment

It is normal for patients to have difficulty remembering events that happened immediately before and after ECT treatments. There may be an initial short period of confusion during recovery. However, you will be carefully looked after at that time by staff to ensure safety and offer reassurance.

Some patients may have physical side effects. The most common are nausea, headache and muscle stiffness. Muscle stiffness occurs after the first ECT due to the muscle relaxing agents used. Nausea and headache can be treated with the right medications (ondansetron, paracetamol) the first time they happen. These medications can be given as preventative treatment before the next ECT.

There is a less common risk of medical complications, such as irregular heart rate and rhythm. There might be a temporary rise in blood pressure and heart rate followed by a slowing of the heart rate.

## 8.2 Short-term

Day-to-day memory can be affected (forgetfulness) and patients may initially need more reminders than usual. This is usually temporary, but can last for a few weeks.

Over the course of ECT, it might be more difficult to remember newly learned information. However this difficulty usually disappears over the days and weeks following completion of the course of ECT.

In many cases memory problems exist because of the illness being treated and ECT can actually improve memory function.

## 8.3 Effects of anaesthesia

Following anaesthesia, your judgment will be affected for the first 24 hours. During this time, you should NOT do the following:

- drive any type of vehicle
- operate machinery
- make important decisions or sign legal documents
- drink alcohol, take other mind-altering substances or smoke, as this might react with the anaesthetic medication
- exercise excessively.

As with any general anaesthetic, there is a very small risk of death. However, with the short anaesthetic required for modern ECT, complications are rare.

## 8.4 Other risks

Heart attack, stroke or injury related to muscle spasms are also extremely rare. Resuscitation equipment and emergency procedures are immediately available if medical complications arise.

## 8.5 Pre-existing medical conditions that increase the risk of side effects

There are many medical conditions that can increase the incidence of side effects during and after ECT, including:

- obesity
- heart problems
- breathing difficulties
- high blood pressure
- epilepsy
- diabetes
- certain allergies.

It is important to discuss any pre-existing conditions with your doctor.

## 8.6 Is ECT harmful during pregnancy?

You must tell the doctor if there is any chance you might be pregnant. The decision whether or not to treat pregnant women with ECT needs to take into account the risks associated with alternative treatments; the risks to the mother and foetus of withholding ECT; and any complications of the pregnancy which might increase the risks of ECT, or the risks of the anaesthetic.

## 9. What to do if ECT is recommended for you

- Discuss all your concerns with your treating doctor.
- Involve your family or friends in the process.
- Visit an ECT suite.
- Speak to patients who have already received ECT.
- Get a second opinion from another psychiatrist.
- Obtain more information about ECT e.g. from the ECT team, your doctor, research papers, DVDs, articles, and trustworthy websites.
- You may obtain legal advice if there is a serious unresolved objection to the ECT treatment recommended.

# Part 2

## 1. Rights and responsibilities



### 1.1 Rights

The *Mental Health Act 2016* (MHA 2016) provides a legislative framework for the treatment and care of persons with a mental illness without their consent. In recognition of this, the MHA 2016 contains extensive safeguards for the treatment and care of patients, including provisions which ensure the protection of patient rights. Chapter 9 of the MHA 2016 deals specifically with some of these rights.

If your treating doctor or psychiatrist recommends that you have ECT, you have the following rights:

- To accept that ECT is a safe and high quality modern treatment with longstanding results recommended to treat your condition, as discussed with your psychiatrist.
- To expect that your treatment will be given in an authorised mental health service equipped to deliver ECT safely by well-trained specialist staff.
- To expect that your privacy and dignity will be respected, and consideration will be given to your feelings and cultural and linguistic background.
- To have the process explained in as much detail as you require by the professional staff involved in your care.
- To provide informed consent to allow a course of ECT treatment, individually designed as appropriate for you under general anaesthesia.



- To refuse ECT, if you are capable of giving informed consent and thereby capable of making an informed decision.
- If your capacity to make a decision to provide consent is in question, your case may be referred to the Mental Health Review Tribunal (MHRT). This is to ensure that your rights and opinion are properly considered. You must be allowed time to make the decision and not feel threatened or coerced.
- To have a friend, family member, advocate or lawyer represent you at the MHRT hearing if you are choosing not to have the ECT treatment and feel the need for someone else to help.
- To know that other people (apart from the MHRT) cannot give consent on your behalf. It is your decision.
- To be treated under an advance health directive or with the consent of an attorney or guardian and not under a treatment authority, if your needs can be met that way.
- To obtain further medical and legal advice or a second opinion from another psychiatrist preferably someone that is well informed about your condition and is familiar with ECT.
- You can and should have support from your family or other carers if you feel that is important. Support persons are afforded important rights and responsibilities, outlined in the Queensland Health Rights of Family, Carers and other Support Persons fact sheet accessible at <https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/clinical-staff/mental-health/act>.
- To be provided up to date information about ECT from relevant and available sources.
- To complain about your treatment. Contact your local Queensland Health facility to resolve the issue locally. Ask to be referred to the Hospital and Health Service complaints coordinator, who reviews feedback for all the facilities in their area.

## 1.2 Responsibilities

If you are to have ECT treatment you must agree to the following:

- To give full information to staff about any health matters that could affect your safety during the treatment.
- Provide a careful history and undertake certain tests and examinations to reduce any foreseeable risk factors that could apply to you.
- Follow instructions about food and fluid restrictions before each treatment session and take any prescribed protective medication on that morning.
- To refrain from smoking prior to treatment.
- To report to your doctor any new physical illness symptoms that might emerge during the course of treatment.
- To report to your doctor any side effects that you think may be due to the treatment to ensure action can be taken to help resolve them.
- To give feedback to your treating team about your response to treatment (your opinion is most important).
- Report to your doctor any particular discomforts that you may experience.
- Abide with warnings and restrictions to your activities on the treatment days. This is particularly important for people who have day procedure ECT and then go home under the supervision of another person after the period of recovery in the hospital. These restrictions

are for your safety and wellbeing. They are listed for you and include things like driving or using dangerous machinery which could be risky after the anaesthetic.

- To consider carefully the treatment offered to you and not refuse it because of fear or lack of knowledge or misinformation. You can get help from others to come to a decision. For some people ECT is an effective treatment which can be life saving.
- To talk with your doctors about future ECT treatment, other treatments and recovery plans after the completion of the prescribed course of ECT.

ECT may be able to improve your particular mental illness in the present situation. However many forms of mental illness are recurrent in nature and are likely to relapse without active ongoing management. This is for you to think about, to get reliably informed and talk about future treatment options with your doctor. Remember that you are a most important contributor to your overall ongoing care.

**Further information about ECT is available online, including;**

Queensland Health Brochure: Information about Electroconvulsive Therapy (ECT). A fact sheet for you and your family: <https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/clinical-staff/mental-health/act/topics/treatment-care>.