Electroconvulsive therapy (ECT)

This information is for anyone who is considering electroconvulsive therapy (ECT) and their family, friends or carers.

Before starting ECT, it is important that you are provided with clear information. We hope that this information will help to inform you about ECT, and support you in making your decision.

About our information

We publish information to help people understand more about mental health and mental illness, and the kind of care they are entitled to.

Our information isn't a substitute for personalised medical advice from a doctor or other qualified healthcare professional.

We encourage you to speak to a medical professional if you need more information or support. Please read our disclaimer.

What is ECT, why is it used and how does it work?

Electroconvulsive therapy (ECT) is used to treat some types of severe mental illness. It is usually considered when other treatment options, such as psychotherapy and medication, have not been successful or when someone is very unwell and needs urgent treatment.

ECT is given as a course of treatments, typically twice a week for between 3 and 7 weeks. If you have ECT, it will take place under general anaesthetic. This means that you will be asleep while it happens.

While you are asleep, your brain will be stimulated with short electric pulses. This causes a controlled seizure that usually lasts about 30 to 40 seconds. As well as an anaesthetic, you will be given a muscle relaxant which reduces how much your body moves during the seizure.

What conditions can ECT be used for?

ECT is most commonly used for moderate to severe depression that hasn't responded to other treatments, or when urgent treatment is needed. It is also used to treat catatonia, a condition in which a patient may stop talking, eating or moving.

Occasionally, ECT is used to treat people in the manic or mixed phases of bipolar disorder. ECT is sometimes offered to people with schizophrenia whose symptoms have not improved with other treatments.

ECT is not recommended for the treatment of anxiety disorders or most psychiatric conditions other than those listed above.

When might my doctor suggest ECT?

ECT might be suggested if your condition:

- is life-threatening and you need to get better quickly to prevent damage to your health
- is causing you a high level of distress
- has not responded to other treatments, such as medication and psychological therapy
- has responded well to ECT in the past.

How effective is ECT?

Doctors treating people with ECT report that most people see an improvement in their symptoms.

Data from 2023 shows that of the people who received ECT:

- 67% (or 67 in 100 people) were “much improved” or “very much improved” at the end of treatment
- 1% (or 1 in 100 people) were “much worse” or “very much worse” at the end of treatment.

Treating depression

Evidence shows that ECT is more successful in treating the most severe cases of depression than any other treatments that it has been compared to. These include:

- antidepressants
- neuromodulation treatments such as repetitive transcranial magnetic stimulation (rTMS).

Evidence shows that ECT is also more effective than placebos. A placebo is when someone is given a substance or procedure that has no physical effect to test the effectiveness of new treatments.

The risk of suicide is lower in people who have ECT than in people with similar symptoms who do not have ECT.

Staying well

ECT can help people who are very unwell to get better enough to have other kinds of treatments. This can help them stay well for longer.

Research suggests that people who have severe depression that hasn’t got better with medication are more likely to get better and stay well for longer if they have ECT.

Of people who get better after having ECT, half stay well for at least a year following their treatment course. This is more likely when people start or continue other treatments after they finish ECT, such as antidepressants or lithium. Additional ECT sessions, spaced further apart, may also improve the chance of staying well.

There is more information about additional ECT sessions later in this resource.

How does ECT work?

ECT causes certain brain chemicals to be released. These seem to stimulate the growth of some areas in the brain that tend to shrink with depression. The effects of ECT gradually build with each treatment.

ECT also appears to change how parts of the brain that are involved in emotions interact with each other. There is ongoing research into this area.

Are there different types of ECT?

There are two different types of ECT:

- bilateral ECT
- unilateral ECT.

Your doctor will be able to explain these to you and advise you on which type of ECT would suit you better.

In ECT, two electrodes deliver the stimulating electrical pulses to your brain. This is either done with hand-held paddles or with small adhesive pads.

In **bilateral ECT** the stimulating electrical pulses pass across your head, usually between your temples.

In **unilateral ECT**, the stimulating electrical pulses pass between your right temple and the top of your head.

High-dose **unilateral ECT** is as effective in treating depression as bilateral ECT. It also has fewer negative effects on memory. There is further information about side-effects later in this resource.

Despite this, there are situations when the ECT specialist might advise using **bilateral ECT.** These situations include:

- when treating illnesses that might respond better to bilateral ECT
- if you are left-handed. If you would like to know more about why this is, speak to your psychiatrist.

Can ECT be used in children or young people?

ECT is not often used in patients under the age of 18 because children and adolescents rarely develop the types of illnesses that respond well to ECT. For the small number who do, ECT can be helpful. A formal, independent second opinion is always required before ECT can be given to patients under the age of 18.

What happens when I have ECT?

Where will I be given ECT?

ECT is given in hospital. It usually takes place in a set of rooms called the 'ECT suite'. Occasionally, if an ECT suite is unavailable, or if you have significant physical health problems, treatment might take place in:

- another area of the hospital
- a different hospital where there is a higher level of support, typically in an operating theatre

An ECT suite should have:

- a room where you can wait before your treatment
- a room where you have your treatment
- a room where you can recover before leaving.

Qualified staff will look after you all the time that you are in the ECT suite. They will answer any questions or concerns you might have before you have the treatment. They will also help you while you are waking up from the anaesthetic and during the time straight after your treatment.

Some people who have ECT are inpatients in hospital, while others have ECT as day patients. If you are a day patient, a named responsible adult will have to accompany you to and from the ECT suite. You will need someone to stay with you when you return home.

Preparing for ECT

Before your course of ECT starts, your doctor will arrange for some tests to make sure it is safe for you to have a general anaesthetic. These may include a record of your heartbeat (ECG) and blood tests.

You must not eat or drink for at least 6 hours before receiving ECT, although you may be allowed to drink sips of water. This is so you can have the anaesthetic safely.

If you would usually take medication during this time, the ECT team should advise you on whether you should still do this.

What happens on the day of my ECT treatment?

- If you are an inpatient, a member of staff from the ward you are staying on will come with you to the ECT suite. They should know about your illness and be able to explain what is happening.
- In many ECT suites a member of your family or a friend will be able to stay in the waiting room while you have your treatment.
- You will be met by a member of the ECT staff, who will carry out routine physical checks (if they have not already been done). They will do everything they can to make you feel at ease.
- You will be asked before each treatment about your memory and how good it is.
- If you are having ECT voluntarily, staff will check that you still wish to have it and will ask you if you have any further questions.
- When you are ready, the ECT staff will take you into the treatment area.
- If you have glasses or hearing aids, you will be asked to remove these.
- The staff will connect you to monitoring equipment to measure your heart rate, blood pressure, oxygen levels and brain waves.
- You will be given oxygen to breathe through a mask.
- The anaesthetist will give you an anaesthetic through an injection into a vein in your arm or the back of your hand.

What happens while I am asleep?

- While you are asleep, the anaesthetist will give you a muscle relaxant and a mouth guard will be put in your mouth to protect your teeth.
- The electrodes will be placed on your head, and the ECT machine will deliver a series of brief electrical pulses, for one to eight seconds. This will result in a controlled seizure, which typically lasts about 30 to 40 seconds, but may last up to 120 seconds.
- Your body will stiffen and then there will be twitching, usually seen in your hands, feet and face. The muscle relaxant greatly reduces how much your body moves.
- The dose of the electric pulses given is based on the amount needed to induce a seizure. Your response will be monitored, and the dose adjusted as necessary.

What happens when I wake up?

- The muscle relaxant will wear off within a couple of minutes. As you are starting to wake up, staff will take you through to the recovery area. Here, an experienced nurse will look after you until you are fully awake.
- You may wake up with an oxygen mask on. There will be a small monitor on your finger to measure the oxygen in your blood.
- It can take a while to wake up fully and, at first, you might not know where you are. The nurse will take your blood pressure and ask you simple questions to check how awake you are.
- After half an hour or so, these effects should have worn off and you will be asked some simple questions to check this.
- You will then be moved to a recovery area, where you will be offered light refreshments while the nursing staff continue to monitor and talk to you.

When can I leave?

You will leave the ECT suite when the team are satisfied that you are medically stable, and you feel ready to do so. The whole process of ECT usually takes about an hour and a half.

As with any general anaesthetic, in the 24 hours after each treatment, you should **not**:

- drink alcohol
- sign any legal documents
- make any important decisions.

You should have a responsible adult with you for 24 hours.

How frequently and how many times will I be given ECT?

ECT is usually given twice a week, with a few days in between each treatment. It can take several sessions before you notice an improvement.

It is not possible to predict, in advance, how many treatments you will need. On average, patients receive around 10 treatments in a course. However, you may have more or less than this.

If you have experienced no improvement in your mental health after 6 treatments, your treatment plan will be reviewed by your doctor. They should discuss the options with you. They might include:

- continuing with the same treatment

- changing the form of ECT
- stopping ECT.

Your medical team will review your progress and any side-effects, usually every week. You will be asked about your memory and this will be tested regularly.

ECT will usually be stopped soon after you have made a full recovery, or if you say you don't want to have any more ECT and you are well enough to fully understand this decision.

What happens after a course of ECT?

ECT is one part of helping you to recover from your illness. You will usually continue or start medication after ECT. This will help to maintain the improvements you have had from your ECT treatment.

Talking therapies (also known as psychotherapies) might help you to understand why you became ill and to develop ways of staying well. Sometimes changes in your day-to-day lifestyle can be helpful. For example:

- regular exercise
- a balanced diet
- a regular sleep pattern
- using techniques like mindfulness and meditation.

Further ECT treatment might be offered to you to help prevent you from becoming unwell again. You are more likely to be offered this if you have previously become unwell again after a course of ECT. This is known as **continuation ECT** or **maintenance ECT**, and is given less often, for example every 2-4 weeks.

The ECT clinic or the psychiatrist who arranged your treatment will contact you to ask you about your memory a few weeks after the end of your course of treatment. If you are experiencing problems with your memory, speak to your psychiatrist. They will refer you for further testing if necessary.

What are the risks and potential side-effects of ECT?

All medical treatments can have side-effects and this includes ECT. The side-effects from ECT can range from mild to severe, and from immediate to long-term. However, ECT has changed and developed over the years. For example, the

amount and form of electricity used has changed. This has reduced the likelihood of side-effects.

ECT is always given under general anaesthetic, which can have side-effects and carries risks. If the anaesthetist considers it unsafe to give you an anaesthetic, then you will not be able to have ECT.

Death related to ECT is an extremely rare event, happening in 1 in every 50,000 to 100,000 treatments.

Depression is a serious illness than can sometimes directly or indirectly cause death if left untreated. People who have been admitted to hospital because of depression are less likely to die after having ECT than if they do not have ECT. This could be because ECT helps people recover, or because people who are given ECT receive closer medical attention.

The risk of side-effects is slightly increased if higher doses of stimulating pulses are needed. Giving shorter pulses of electricity can reduce this risk, but this means the treatment is less likely to be effective.

If you experience side-effects during a course of ECT, it may be possible to adjust the treatment.

Immediate side-effects

Immediately after ECT, it is very common for patients to experience headaches and muscle aching.

Some patients experience sickness or nausea although this is less common.

A nurse will be with you while you wake up after ECT and can give you simple pain relief, like paracetamol, or anti-sickness medication if you need it.

Patients very commonly feel confused and disorientated upon waking. This usually wears off within 30 minutes, but tends to last a little longer with bilateral ECT, rather than unilateral ECT.

Rarely, ECT can trigger a prolonged seizure. If this happens the seizure is immediately stopped by the medical staff present, using medication.

Short-term side-effects

Patients very commonly have problems with short-term memory during their treatment with ECT. For example, they might quickly forget conversations that they had during this time. The risk of this side-effect might be greater with bilateral ECT. The risk is also greater if a higher stimulus dose is needed.

However, mental illnesses, such as depression, can also affect memory and other brain functions. These functions are known as ‘cognition’. A few weeks after a

course of ECT, performance on most cognitive function tests is typically as good as, or better than, pre-ECT levels.

Long-term side-effects

Rigorous scientific research has not found any evidence of physical brain damage in patients who have had ECT. ECT does not increase your risk of having a stroke or developing dementia.

The most serious potential long-term side effect of ECT is that you might forget events from your past.

A small number of patients report gaps in their memory about events in their life that happened before they had ECT. This tends to affect memories of events that occurred during, or shortly before starting the course of ECT. This kind of memory problem is more likely with bilateral rather than unilateral ECT. Once these memories are gone, they are unlikely to return.

What might happen if I don't have ECT?

You and your doctor will need to balance the risk of you experiencing side-effects from ECT with the risk of you not having ECT. Not having ECT may mean that you are more likely to have:

- prolonged and disabling mental illness
- serious physical illness (and possibly death) from not eating or drinking
- an increased risk of death by suicide.

Driving and ECT

If ECT is being considered to treat your symptoms, you are probably too unwell to be driving. You should ask your psychiatrist if you should inform the Driver and Vehicle Licensing Agency (DVLA) of your condition.

The DVLA advice is that patients should not drive during a course of ECT. After you have finished your course of ECT, it will probably be a little while before you are considered fit to drive again. The DVLA, with advice from your doctor, will make this decision about when you can drive again.

If you receive continuation or maintenance ECT to help keep you well, you may be able to drive. You should ask your psychiatrist about this. However, you should not drive, ride a bike or operate heavy machinery for at least 48 hours after each ECT treatment.

Making your decision about ECT

Consenting to having ECT

Like any significant treatment in medicine or surgery, you will be asked for your consent, or permission, to have ECT. The ECT treatment, the reasons for doing it and the possible benefits and side-effects will be explained to you.

If you decide to go ahead, you will be given a consent form to sign. This is a record that:

- ECT has been explained to you
- you understand what is going to happen
- you understand the risk and benefits
- you give your consent to receiving ECT.

Unless it is an emergency, you will be given at least 24 hours to think about your decision and to discuss it with your relatives, friends or advisors if you wish to.

You can withdraw your consent and refuse ECT at any point, even just before the first treatment. You should be given information explaining your rights about consenting to treatment.

Can I make my wishes about having ECT known in advance?

If you have a view about whether or not you want to receive ECT, it is important that you tell the doctors and nurses providing your care. You might also want to tell friends, family members or anyone else that is supporting you or that you have asked to speak for you. Doctors must consider these views when they consider whether or not ECT is in your best interests.

Some people decide when they are well that they would not want to receive ECT if they became ill again. If you feel this way, you might choose to write a statement setting out your wishes. This can be known as an 'advance decision' in England, Northern Ireland and Wales, or an 'advance statement' in Scotland. The wishes in your statement should be followed except under very specific circumstances. This is a complicated topic and beyond the scope of this resource. You can find out more about advance decisions on the Mind website.

Some people who have been treated with ECT have found it so helpful that they have chosen to record that they would want to receive it in the future even if they say otherwise when they are unwell.

Can ECT be given to me without my permission?

Whether ECT can be given without your permission depends on whether you have 'capacity' or not. Having capacity means that you have the ability to make your own decision about something.

If you have the capacity to decide whether or not to have ECT, then it cannot be given to you without your fully informed consent.

However, some people become so unwell they are said to ‘lack capacity’ to make decisions about ECT. Someone lacking capacity cannot do one or more of the following things:

- understand the information they are given about the nature, purpose or effects of ECT
- remember this information
- weigh up the pros and cons of receiving ECT
- communicate their decision.

There are laws in the UK that allow doctors to make decisions about giving ECT treatment to people in this situation. These come with legal safeguards to ensure treatment is only given if it is absolutely necessary.

This is the case for around half of people who receive ECT treatment. People who have ECT in this way do just as well as those who have been able to give consent.

Prior to every ECT treatment your capacity will be assessed. If the symptoms of your mental illness improve and you regain capacity, your consent must be sought to find out whether you want to continue to receive ECT.

How is the quality of ECT in my hospital assessed?

The ECT Accreditation Service (ECTAS) is a voluntary network of mental health services in England, Wales and Northern Ireland that promotes best practice in ECT treatment. The network helps to improve quality of care by supporting ECT clinics to meet a set of agreed standards, such as on safety and legal issues.

The Scottish ECT Accreditation Network (SEAN) performs a similar function and covers every ECT service in Scotland.

ECTAS and SEAN are not the statutory regulators of ECT services. This is the responsibility of the Care Quality Commission in England, the Healthcare

Inspectorate Wales in Wales, Healthcare Improvement Scotland in Scotland and the Regulation and Quality Improvement Authority in Northern Ireland.

Where can I get more information?

You can find out more information via the links below:

- MIND information on ECT
- Rethink Mental Illness factsheet on ECT

Further reading

- Depression in adults: treatment and management. NICE guideline [NG222]
- Scottish ECT Accreditation Network (SEAN)
- Electroconvulsive Therapy Accreditation Services (ECTAS)

Credits

This information was produced by the Royal College of Psychiatrists' Public Engagement Editorial Board (PEEB). It reflects the best available evidence at the time of writing.

Expert review and contributors: Committee on ECT and Related Treatments

Expert by experience: Lucy Jenkinson

Full references available on request.