

What is a Cochlear Implant?

North East Regional Cochlear Implant Programme

Patient Information



Audiology
Planned Care Centre



What is a cochlear implant?

A prosthetic device that uses **electrical stimulation** to provide sound to patients with **severe to profound** hearing loss who gain **little or no benefit** from conventional hearing aids.



There two parts to a cochlear implant:

An external part ...



And an internal part ...



The external bit

This is the part that looks like a hearing aid.

It is made up of two main parts:

1. The sound processor ...
2. The headpiece ...



The internal bit

- Surgically implanted on the mastoid bone behind the ear
- Made up of the 'receiver package (right) and the electrode array (below)
- The receiver package (right) receives signals from the speech processor through the headpiece (which is held in place with a magnet) and converts them into electrical pulses.



The electrode array (right) sends these impulses to different parts of the hearing nerve and they are interpreted as sounds



What the assessment may include

- **Audiological assessment** – this involves a detailed history of your hearing and measures how you are hearing both with and without your hearing aids.
- **Implant centre keyworker assessment** – this appointment is where you will be given a lot of information about what you could expect from a cochlear implant. For adults this appointment looks at your current lifestyle and your expectations from a cochlear implant. For children this appointment looks at speech and language development and the support which is currently in place at home and from other local professionals.
- **Medical assessment** – this is the chance to meet the surgeon and ask them any questions you have. The surgeon will ask you questions about your medical health and explain the surgery.
- **CT / MRI scan of your head** – this is to check the structure of the inner parts of the ear and hearing nerve.
- **Balance assessment** – adults and some children may need a balance assessment for information about which ear would be best to implant.

Decision

- Once all the assessments are finished the Cochlear Implant Team meets to discuss each person under assessment.
- The decision is made by the whole team as to whether each person is suitable for a cochlear implant.
- It is usually the keyworker who will inform you of the team's decision.

Surgery

- The surgery takes around one and a half to three hours (for children who are having two implants this may be longer).
- The hair is shaved on the side where the implant will be (hair grows back following surgery).
- The implant is tested during the surgery to make sure it is working.
- An x-ray is done after surgery (usually the following day) to check the position of the implant.

Switch-on

- The cochlear implant is 'switched on' around three weeks after surgery. This is to give the area time to heal.
- During the switch on appointment the audiologist will do several tests to check the implant is working and to set it correctly for each person.
- After this appointment there are regular appointments with the audiologist and keyworker.
- These appointments last around an hour each and it is important that all appointments are attended. Commitment is required from the patient and their family/friends to get the most from their cochlear implant.
- For children the keyworker will work closely with other professionals, such as education, when devising a rehabilitation plan.
- A cochlear implant is a lifetime commitment. Reviews will be offered over the lifetime of a recipient to check the functioning of their implant.

Frequently asked questions

Everyone referred for a cochlear implant assessment has many questions. Most people have very little knowledge about cochlear implants before they come for an assessment. Here are some of the most common questions. You will be able to ask as many questions as you like during your assessment.

If I come for an assessment am I committed to having a cochlear implant?

No. You can withdraw from the process at any time, including after the team have met to discuss your case.

Can I bring someone with me to my assessment appointments?

Yes of course. It is very useful to bring a family member or close friend with you to your appointments. This means you have someone to talk things over with as it is a big decision.

Is there an age limit for cochlear implants?

No. We will consider individuals of any age for a cochlear implant.

What would I hear with a cochlear implant?

A cochlear implant does not give you back normal hearing. Everyone is different and some people get more benefit from their cochlear implant than others. What you are likely to hear depends on your hearing history and will be discussed in detail with you during the assessment.

When an implant is first switched on it sounds very strange. Some people just hear beeping noises and some people say that all speech sounds like a robot or a cartoon character. The sound improves with time and it takes time and effort from the individual to get the best from their implant.

If I got a cochlear implant and didn't like it could I go back to my hearing aids?

No, a cochlear implant replaces your hearing so you would not be able to go back to hearing aids. This is why we are so careful that the people we implant are suitable candidates.

Adults are only fitted with one cochlear implant so if you wear two hearing aids you would keep the hearing aid in the other ear.

Will a cochlear implant help me hear in background noise?

A cochlear implant may help you to hear better in background noise compared to your hearing aids. However, the majority of cochlear implant users still struggle to hear in background noise to some degree.

Would I be able to use the phone with a cochlear implant?

Some people with a cochlear implant are able to use the phone, but many cannot. It is by no means guaranteed.

Are there different models of cochlear implant available and do I get a choice?

Yes, there are different models available and you would get to express your preference as to which you prefer. The final decision regarding which model you will receive will be made by the implant team

Does the cochlear implant last forever?

No. An implant is like any electrical device, at some point it will need to be replaced. The companies expect the internal part of the implant to last at least 10 years but some people need their implant replacing before then and some people's last longer than this.

If the internal part of the implant needed to be replaced there would be a further operation involved to replace it.

Does it run on batteries?

Yes. The sound processor needs batteries to work. These are usually rechargeable.

Can I use a loop system with a cochlear implant?

A cochlear implant can be used with existing loop systems or with blue tooth devices.

Contact us

Cochlear Office telephone/fax: 01642 854068

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Email: NECIP@stees.nhs.uk or JCUH.NECIP@nhs.net

Comments, compliments, concerns or complaints

South Tees Hospitals NHS Foundation Trust is concerned about the quality of care you receive and strives to maintain high standards of health care.

However we do appreciate that there may be an occasion where you, or your family, feel dissatisfied with the standard of service you receive. Please do not hesitate to tell us about your concerns as this helps us to learn from your experience and to improve services for future patients.

Patient Advice and Liaison Service (PALS)

This service aims to advise and support patients, families and carers and help sort out problems quickly on your behalf.

This service is available, and based, at The James Cook University Hospital but also covers the Friarage Hospital in Northallerton, our community hospitals and community health services. Please ask a member of staff for further information.

Author: Audiology. Images taken from Oticon and Cochlear websites

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