Royal National Throat Nose and Ear Hospital

Adult cochlear implant programme

Cochlear Implant
If you need a large print, audio or translated copy of the document, please contact us on 020 3456 5305. We will try our best to meet your needs.

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1 Ethos
We offer a specialist service to people from a wide age range, from babies just a few months old, to adults over the age of 80. Our service aims to be accessible to those from a wide range of social and cultural backgrounds. We are able to provide information in a range of languages, including British Sign Language. Our current implant population is made up of many nationalities, speaking a wide variety of languages. We believe in a multi-disciplinary team approach that allows the implanted person and their family to achieve the benefit through a thorough assessment and well planned rehabilitation and individual goals.

2 What is a cochlear implant and how does it work?
A cochlear implant (CI) is an electronic device, which can provide a sensation of sound to children and adults who receive no useful benefit from conventional hearing aids. At the Royal National Throat, Nose and Ear Hospital (RNTNEH), where possible, we offer our patients a choice of different implant systems. A cochlear implant has several different parts, some are internal (cannot be seen) and some are external (worn behind the ear). A cochlear implant works by turning sounds into tiny electrical pulses, which are sent directly to the hearing nerve. The implant therefore bypasses the inner ear structures which are not working. The implant therefore bypasses the inner ear structures which are not working. It is important to remember that no electronic device can be expected to restore function to the level experienced by a normally hearing ear.
3 Components of a cochlear implant

**Internal component**
1. Electrode array
2. Radio receiver
3. Magnet
4. Electronics

**External component**
5. Head coil
6. Programme and volume control
7. Sound processor
8. Microphone
9. Battery
4 Who is suitable for a cochlear implant?
Not all severe to profoundly deaf people are appropriate candidates for implantation.

Cochlear implants are usually suitable for people who have;

- Severe to profound deafness in both ears.
- Received minimal or no benefit from high power digital hearing aids.
- Good general health.
- Established spoken language.
- Increased perception of environmental sounds.
- Understanding of spoken conversation with lip reading in a quiet setting.
- Increased understanding of familiar phrases without lip reading in quiet.
- Better phone use for some people.
- Music appreciation for some people.

A thorough assessment is needed before we can establish whether you are a suitable candidate for implant surgery and what the benefits might be for you.
5 Adult assessment
When you are referred to the Cochlear Implant Department, you will undergo a comprehensive cochlear implant assessment, and may be required to attend a number of different appointments.

These include some or all of the following:

- Medical examination
- Hearing tests
- Hearing aid assessment
- Lip reading and listening assessments
- Speech and language assessment
- Psychology appointment
- Balance testing (occasionally)
- CT / MRI scan of the inner ears

6 What does surgery involve?
The internal part of the cochlear implant is inserted into the inner ear under general anaesthetic. This takes approximately two hours, depending on individual factors. The hospital stay is around one to two days. After the operation, once the swelling has gone down and the scar has healed and your hair has started to grow back, there will be little physical evidence that the implant is in place apart from a slight bump behind the ear. The risks from the surgery are similar to most other types of ear operations and these will be discussed by the surgeon.
7 What are the risks?

- Facial nerve bruising: The facial nerve is carefully monitored throughout the operation. This ensures that bruising or damage rarely occurs.

- The electrode array cannot be fully inserted due to a blockage (although the CT will usually tell us in advance whether or not to expect this).

- Infections, requiring treatment with antibiotics.

- Temporary dizziness that may occur if you turn your head quickly or bend down suddenly.

- A change in taste sensation. This usually gradually improves over time.

- Tinnitus may vary after the operation.

- Risk of meningitis (rare but a possible complication).

- Numbness around the area of the scar.

- Occasionally the implant itself may fail or stop working. This would require further surgery to replace it.

- The long term effects of electrical stimulation are not known. The amount of electricity involved is minimal. There have been in nearly 30 years of experience with no indications of long term damage.
8 The adult cochlea

Approx. 20mm
9 Adult rehabilitation

Rehabilitation will vary according to the individual’s needs. For example, the length of time the person has been deaf, hearing aid history, the medical, social and psychological status of a person can all affect the need for support from the cochlear implant team.

- The main aims of adult rehabilitation are:
  - To give information about the cochlear implant and speech processor to both the adult and their family.
  - To enable understanding and make use of the new type of sound heard through the cochlear implant.
  - To provide training in speech perception.
  - To monitor speech and voice production.
  - To maximise communication strategies.
  - To ensure that the device can be used effectively and that the accessories are used appropriately.
10 Programming of the cochlear implant
After four or five weeks post-surgery, an Audiologist will ‘switch on’ the speech processor. Regular appointments are needed to programme the processor to meet the hearing needs of the person. Also the Audiologist will demonstrate how to use and to On-going adjustments to the programme will be needed although most of these will be during the first year.

11 Social events
Every year the department arranges a social event for newly implanted individuals and those on the waiting list, in order to meet and discuss their experiences and expectations with each other as well as with the RNTNEH team members.
12 The cochlear implant team consists of:
- Cochlear implant coordinator
- ENT surgeons
- Clinical psychologists
- Speech and language therapists
- Audiologists / clinical scientists
- Hearing therapist
- Administrators

13 Where can I get more information?
- www.uclh.nhs.uk
- www.hccig.org.uk
- www.cochlear.com
- www.advancedbionics.com
- www.bcig.org.uk
- www.nice.org.uk
- www.rnid.org.uk
- www.medel.com
- www.nice.org.uk

UCLH cannot accept responsibility for information provided by external organisations.
14 Contact details

Cochlear Implant Department
Direct line: 020 3456 5001
Switchboard: 0845 155 5000
Extension: 65001
Text: 07899 748917 (Please no voice mail)
Fax: 020 3456 5003
Address: Cochlear Implant Department
Royal National Throat Nose and Ear Hospital
University College Hospital NHS Foundation Trust
330 Grays Inn Road,
London
WC1X 8DA
15 How to get here

The hospital is near King’s Cross Station. There is no car parking at the hospital. Pay and display parking areas are available nearby but these are frequently full. You are advised to travel by public transport.

Bus Stops

- **D**: 45, 46, 63
- **L/N**: 17, 45, 46, 63, 259
- **R**: 10, 30, 59, 73, 91, 205, 390, 476
- **E/X**: 30, 73, 205, 214, 476
- **M**: 10, 59, 91, 390

Congestion Charge Zone

Main entrance