Khoo Teck Puat Hospital
NHG Health

Yishun Community Hospital
NHG Health

Adding Years of Healthy Life

Department of
Otorhinolaryngology

Cochlear Implants

A guide for patients and their families

What is a cochlear implant?

A cochlear implant is an electronic hearing device designed for people with severe to profound hearing loss who receive limited benefit from hearing aids.

Unlike a hearing aid, which makes sounds louder, a cochlear implant bypasses the damaged parts of the inner ear (cochlea) and directly stimulates the hearing nerve using small electrical signals. These signals are then interpreted by the brain as sound.

Internal Implant

Placed under the skin during surgery. Receives signals and delivers electrical stimulation directly to the hearing nerve via an electrode array inserted into the cochlea.

External Sound Processor

Worn behind the ear or off the ear. Captures sounds from the environment and sends the information wirelessly to the internal implant.



Together, these components allow many people to hear speech more clearly and reconnect with everyday sounds.

Who may benefit?

A cochlear implant may be suitable if you meet the following criteria:

Degree of hearing loss

Have severe or profound hearing loss in one or both ears.

Limited benefit from hearing aids

Struggle to understand speech even when using well-fitted hearing aids.

Impact on daily life

Find that hearing loss significantly affects communication and daily life.

Medical suitability

Are medically suitable for surgery.

Motivation for rehabilitation

Are motivated to participate in rehabilitation after implantation.

Not everyone with hearing loss requires a cochlear implant. Many people continue to do very well with hearing aids alone.

What are the benefits?

Every person's experience is different, but **potential** benefits include:



Speech understanding

Improved understanding of speech in everyday situations.



Communication

Better communication with family and friends.



Social confidence

Greater confidence in social situations.



Environmental sounds

Improved ability to hear environmental sounds.



Telephone use

Better hearing on the telephone for some people.



Quality of life

Improved overall quality of life and reduced listening effort after successful rehabilitation.

What can't a cochlear implant do?

A cochlear implant does not **restore normal hearing**.

Initially, sounds often seem unfamiliar or electronic. Over time, the brain learns to interpret these new signals more naturally through practice and rehabilitation.

Factors that influence outcomes

- The cause of hearing loss.
- How long hearing has been reduced.
- Previous hearing aid use.
- Consistent use of the implant.
- Participation in rehabilitation.

Learning to hear with a cochlear implant is similar to learning a new skill — it improves with time, practice and support. Progress is individual and ongoing.

The cochlear implant journey

01

Assessment

Consultation with an ENT surgeon, hearing tests, hearing aid assessment, speech understanding tests, CT and/or MRI scans, and review by an audiologist.

02

Surgery

Performed under general anaesthesia, usually 2–3 hours. The implant is placed behind the ear and an electrode array is inserted into the cochlea. Most patients stay overnight or are discharged the same day.

03

Healing

The implant remains switched off for approximately 2–4 weeks while the wound heals. Most people return to normal daily activities within a few weeks.

04

Switch-on (Activation)

The external sound processor is fitted, the implant is switched on, and initial programming ("mapping") is performed. Most people hear sounds immediately.

05

Rehabilitation

Regular appointments for fine-tuning, hearing assessments, listening practice, and communication training. Hearing continues to improve as the brain adapts.

What are the risks of surgery?

Cochlear implantation is a well-established and generally safe operation. Potential risks include:

More common risks

- Infection.
- Bleeding.
- Dizziness or imbalance.
- Temporary changes in taste.
- Ringing in the ear (tinnitus).
- Loss of any remaining natural hearing in the implanted ear.

Less common risks

- Weakness of the facial muscles (rare).
- Leakage of cerebrospinal fluid (rare).
- Device failure requiring replacement (uncommon).

ⓘ Your surgeon will discuss these risks with you in detail before surgery, giving you the opportunity to ask questions and make an informed decision.

Frequently asked questions

Will I hear normally again?

No. A cochlear implant provides a different way of hearing. Most people notice significant improvements in speech understanding, but hearing is not identical to natural hearing.

How long does it take to adapt?

Everyone is different. Some people notice improvements within days, while others continue to improve for months or even years. **Regular use and rehabilitation are key**.

Will I still need my hearing aid?

Some people continue to wear a hearing aid in the opposite ear (bimodal/binaural hearing), which can improve hearing in noise and sound localisation. Your audiologist will advise you.

Can I have MRI scans?

Many modern cochlear implants are MRI compatible under specific conditions. Always inform healthcare professionals that you have a cochlear implant before undergoing an MRI scan.

Can I play sports?

Yes. Most everyday activities can be resumed after healing. You may want to avoid contact sports if possible, if not, you may require additional head protection.

Will airport security affect my implant?

The implant is safe around airport security systems. Carry your cochlear implant identification card when travelling.

Looking after your cochlear implant

To keep your implant working well:

→ **Wear consistently**

Wear your processor consistently to maximise hearing benefit and support the brain's adaptation to new signals.

→ **Attend follow-up appointments**

Attend regular follow-up appointments for programming adjustments and hearing assessments.

→ **Keep it clean and dry**

Keep the processor clean and dry. Protect it from knocks and excessive moisture.

→ **Contact your implant centre**

Contact your implant centre if you experience changes in hearing or equipment problems.

Key messages

Designed for patients with limited hearing aid benefit

A cochlear implant is designed for people who receive limited benefit from hearing aids.

Significant improvement, not normal hearing

It does not restore normal hearing but can provide significant improvements in speech understanding and quality of life.

Rehabilitation is essential

Surgery is only one part of the journey — rehabilitation and regular programming are essential to achieving the best outcomes.

Progress is individual

Every person's progress is different, and improvements continue over time with consistent use and support.

Your team is with you

Your cochlear implant team will support you throughout your hearing journey.

Your Cochlear Implant Journey

Every person's journey is unique, but most patients follow the pathway below. Use this page to keep track of your appointments and milestones.

Step	What happens?	Appointment Date
1	**Vaccinations** Pneumococcal vaccinations to be arranged	_____
2	**Cochlear implant Assessment (Audiology)** Comprehensive hearing tests, speech understanding tests and balance test.	_____
3	**Imaging** CT scan and MRI scan to assess the anatomy of your inner ear and determine whether cochlear implantation is suitable.	CT _____ MRI _____
4	**Pre-operative ENT Clinic** Meet your surgeon to discuss the operation, benefits, risks and expected outcomes. Complete consent and book **pre-operative anaesthesia assessment.**	_____
5	**Pre-operative Anaesthesia Assessment** Meet your anaesthetist to optimise any medical conditions that you may have and discuss the risks of anaesthesia. You may need to see other specialists prior to surgery.	_____
6	**Cochlear Implant Surgery** This is done under a general anaesthetic. Most patients go home the same day or after one overnight stay.	_____

7	**Post-operative Review (1–2 weeks)** Your wound is checked and your recovery assessed.	_____
8	**Switch-On / Activation (2–4 weeks after surgery)** Your external sound processor is fitted and your implant is activated for the first time. Initial programming ("mapping") is performed.	_____
9	**Mapping Appointments** Fine-tuning of your implant settings as your brain begins adapting to sound. Further adjustments are needed to optimise hearing and speech understanding.	1_____ 2_____ 3_____
10	**Rehabilitation & Listening Practice** Ongoing listening exercises, communication strategies and rehabilitation with your cochlear implant team.	1_____ 2_____ 3_____

Your Personal Journey and Support Team

Your Cochlear Implant Team

ENT Surgeon: _____

Audiologist: _____

Auditory Rehabilitation / Speech Therapist: _____

Telephone: _____

My Goals

Everyone has different reasons for choosing a cochlear implant. Thinking about your personal goals can help guide your rehabilitation.
Examples include:

- ○ Hearing conversations more easily
- ○ Understanding speech in background noise
- ○ Talking on the telephone
- ○ Hearing family members more clearly
- ○ Enjoying music
- ○ Returning to work or study
- ○ Feeling more confident socially
- ○ Other: _____

Remember...

A cochlear implant is more than an operation.
The best outcomes are achieved through:

- ✓ Wearing your sound processor every day.
- ✓ Attending all mapping appointments.
- ✓ Practising listening regularly.
- ✓ Working together with your cochlear implant team.

Most patients continue to notice improvements in hearing and communication for many months after activation. Your team will support you throughout this journey.

© Khoo Teck Puat Hospital Pte Ltd 2026. All rights reserved. All information correct as of Apr 2026. No part of this document may be reproduced, copied, reverse compiled, adapted, distributed, commercially exploited, displayed or stored in a database, retrieval system or transmitted in any form without prior permission of Khoo Teck Puat Hospital Pte Ltd. All information and material found in this document are for purposes of information only and are not meant to substitute any advice provided by your own physician or other medical professionals.