

Referring adults for cochlear implant candidacy assessment

Commonly asked questions

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What is the difference between a hearing aid and a cochlear implant?

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Why is it important to start the conversation about cochlear implants early?

Less than 10% of adults who could benefit from a cochlear implant have one.^{1,2} By using the 60/60 screening criteria, and raising the topic of cochlear implants as soon as it is appropriate, you can help to ensure that your clients understand their options early in their hearing journey, so they have timely access to a cochlear implant candidacy assessment.

Earlier intervention leads to better outcomes for people who meet candidacy for a cochlear implant.³

When should the option of a cochlear implant be considered for my client?

If your client meets one or more of the 60/60 screening criteria below in either ear, consider referring for a cochlear implant evaluation to determine candidacy.⁴

- Difficulty with daily interactions using hearing aids
- Pure tone average (500 Hz, 1 kHz, 2 kHz) greater than or equal to 60 dB HL
- Aided phoneme score less than or equal to 60%

What is a cochlear implant and how does it work?

A cochlear implant consists of an external component – the sound processor, and an internal component – the cochlear implant.

Sounds are picked up by the sound processor, which converts the signals to digital code and then transmits to the implant, which sits just under the skin.

The implant then converts the code into electrical signals and sends them down to the electrode array within the cochlea. These electrical signals stimulate the nerve fibres of the cochlea which are then interpreted as sounds by the brain.

What is the difference between a hearing aid and a cochlear implant?

While hearing aids mostly make sounds louder, cochlear implants bypass the damaged part of the ear and stimulate the hearing nerve directly. This enables audibility right across the speech frequency range at soft levels.

For many people with moderately-severe to profound sensorineural hearing loss, hearing aids may be at the limit of what they can provide in terms of speech understanding and everyday communication.

What hearing improvements can people expect with a cochlear implant?

For people who meet the candidacy criteria, cochlear implants can significantly improve speech recognition in both quiet and moderate noise, and these gains in speech recognition are likely to remain stable over time.³

In recent studies:

- Adults with cochlear implants could understand sentences eight times better than they could previously with their hearing aids.^{1,5}
- 96% of participants displayed improved word recognition scores after cochlear implantation compared to before implantation.⁵
- Approximately 82% of patients with post-lingual hearing loss had improved speech perception performance by 15 or more percentage points in the implanted ear.⁶

What functional hearing improvements can people expect with a bimodal solution?

Bimodal solutions have many benefits such as improved sound quality, localisation, and speech understanding, especially in noise.⁷

In a recent study of adults using a cochlear implant in one ear, and a hearing aid in the other⁷:

- Bilateral hearing aid users had 10 times greater hearing satisfaction after receiving one cochlear implant and continuing to use a hearing aid in the opposite ear. 95% of participants were satisfied or very satisfied with their hearing performance compared to 9% when they used two hearing aids.
- 71% of participants were satisfied or very satisfied when hearing on the phone, compared to 6% when they used two hearing aids.
- 58% of participants were satisfied or very satisfied when hearing in background noise, compared to 2% when they used two hearing aids.

How can QOL improve in adults with a cochlear implant?

Adults with hearing loss can be substantially affected by social isolation, loneliness, and depression; evidence suggests that treatment of hearing loss with a cochlear implant can lead to improvement in these aspects of well-being and mental health.³

Evidence shows that:

- People implanted at an age older than 70 years perceive a greater improvement in QOL than the younger, under 55s group.⁸
- 83% of recipients reported a statistically significant improvement in QOL after receiving a cochlear implant.⁵

What happens at a cochlear implant candidacy assessment?

A cochlear implant candidacy assessment involves a multidisciplinary team, including a cochlear implant audiologist, a cochlear implant surgeon, and any other medical or psycho-social professionals required.

There are two main components to the cochlear implant candidacy assessment:

- **Audiological:** The goal of the audiological component is to use aided speech testing to determine the likelihood that an individual will have a better outcome with a cochlear implant than they currently achieve with their optimised hearing aid.
- **Surgical:** The surgical component involves imaging of the cochlea and surrounding anatomy, as well as consultation with a cochlear implant surgeon. The surgeon is responsible for reviewing the audiological and vestibular results, assessing whether the client is medically fit to undergo the surgery, and counselling on all aspects of the surgery.

After testing is complete, the multidisciplinary cochlear implant team will provide counselling on the likelihood that the client will achieve their hearing goals with a cochlear implant. If the client is not deemed a cochlear implant candidate, or decides not to proceed, they should be scheduled for a follow-up assessment in 1-2 years.

What do hearing health professionals need to know about cochlear implant surgery?

Cochlear implant surgery is a minimally invasive procedure, that takes about two hours and is usually performed under general anaesthetic.

Most people either have day surgery and go home that night or stay just one night in hospital. Generally, there is very little discomfort after the operation and if needed, most find over-the-counter pain relief sufficient.

Are cochlear implants only for people with bilateral severe to profound hearing loss?

Initially, cochlear implants were only recommended for adults with bilateral severe to profound loss. As cochlear implant technology and hearing outcomes have improved, the indications for cochlear implantation have expanded to include people with a pure-tone average loss of moderately severe to profound hearing loss* in at least one ear.

In recent studies:

- Adults with severe hearing loss have significantly better outcomes compared with adults with profound hearing loss.⁹
- Better pre-operative maximum word recognition scores are associated with better speech perception with a cochlear implant.¹⁰

What are the expected outcomes of a cochlear implant for SSD?

Cochlear implants are recognised as an effective treatment for SSD. The amount of clinical evidence is growing, demonstrating a significant benefit for adults and children with SSD when using a cochlear implant, compared to hearing with only one ear.

Cochlear implant recipients with SSD are likely to experience improvements in the following areas:

- Speech understanding in quiet and noise¹¹
- Sound localisation¹¹
- Tinnitus reduction^{12,13}
- Improvements in QOL¹⁴

What about people who have been experiencing hearing loss for a very long time?

While earlier implantation is associated with better outcomes³, long durations of hearing loss do not rule out potential benefit of cochlear implants. Evidence shows that adults who receive an implant in an ear that was previously unaided for more than 15 years have been shown to experience improvements in speech recognition.³

Is my client too old to be considered for a cochlear implant?

Age alone should never be a limiting factor to cochlear implant candidacy, as positive speech recognition and QOL outcomes are experienced by older adults as well as younger adults.³

There is no upper age limit. Evidence suggests that people implanted older than 70 years of age perceive a greater improvement in QOL than their younger counterparts.⁸

The multidisciplinary cochlear implant team will ensure that the individual is fit for surgery, be able to attend the follow-up appointments, and be able to manage the sound processor.

How do I counsel clients who value their low frequency hearing about cochlear implants?

Let your client know that a cochlear implant candidacy assessment will help them understand all their options. A multidisciplinary team including a cochlear implant audiologist and cochlear implant surgeon will evaluate how much functional value the low frequency hearing is providing, and discuss possible outcomes.

It is critical to know:

- 82% of patients with post-lingual hearing loss have significantly improved speech perception in the implanted ear.⁶
- There have been many advances in electrode arrays and surgical techniques that help preserve hearing structures.^{15,16}
- When functional hearing is retained post-operatively, the client has the option of using a hybrid sound processor, which enables them to receive a mix of acoustic and electrical stimulation.

Should people continue to wear a hearing aid on contralateral ear once they have a cochlear implant?

For people with binaural hearing loss, it is recommended that they continue to wear the hearing aid in their contralateral ear, to achieve the best possible speech recognition and QOL outcomes.³

Bimodal hearing has many benefits such as sound quality, localisation, and improved speech understanding, especially in noise.⁷

Individuals often report that while wearing both the hearing aid and the cochlear implant together, they enjoy an increased naturalness of sound.⁵

What are the funding options for adult cochlear implantation in Australia?

The cochlear implant clinic will help your client understand all the options when they have their cochlear implant candidacy assessment. In Australia, there are a variety of funding options:

- Private health (hospital) insurance may cover up to 100% of costs associated with the devices. Coverage of the surgical procedure and any hospital costs will depend on the level of insurance.
- State governments provide funding for cochlear implants for adults. The number funded each year varies state by state. There are no costs for the client for the procedure or aftercare.
- Department of Veterans' Affairs (DVA) may provide 100% of the costs associated with devices, the procedure, and aftercare.

What are the funding options for adult cochlear implantation in New Zealand?

The cochlear implant clinic will help your client understand all the options when they have their cochlear implant candidacy assessment. In New Zealand, the funding options for adults are:

- Ministry of Health funding is available to a capped number of adults who meet the eligibility criteria for public funding
- Accident Compensation Corporation (ACC) may provide 100% of the costs associated with devices, the procedure, and aftercare.
- Adults may also choose to self-fund where required. With Latitude Finance, there is the option for interest-free repayments up to 5 years.**

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*Pure-tone average loss can be defined as the average threshold calculated for four frequencies at 500, 1000, 2000 and 3000 or 4000 Hz as available. Reference: American Speech-Language-Hearing Association. (1981). On the Definition of Hearing Handicap [Relevant Paper]. Available from www.asha.org/policy. ANSI standards for defining hearing impairment quoted by ASHA. Available from www.asha.org/public/hearing/Degree-of-Hearing-Loss (Feb 2012)

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