



# THE ROLE OF AGE IN COCHLEAR IMPLANTATION

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*Audiologists are aware of the truth of the adage that hearing loss is an invisible disability because there are no visible symptoms, and also due to the longstanding stigma associated with hearing loss in communities and the lack of action by policymakers.*

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The World Health Organisation (WHO) estimates that more than 460 million people present with debilitating hearing loss: with 1 in 3 people over the age of 65 presenting with a hearing loss. It is estimated that currently over 15 million people could benefit from a cochlear implant but only a fraction of those people has been implanted. Other research has further stipulated that only 1 in 20 people that could benefit from a cochlear implant have been implanted.

The economic cost of unaddressed hearing loss is estimated to be \$750 billion globally due to reduced productivity in the workplace, the use of special educational resources in children and other medical and social services. Adults with a hearing loss have been shown to experience loneliness, anxiety, social isolation, depression, and rapid cognitive decline amongst other symptoms.

Below is some research that details the positive effects of intervening in hearing loss for the elderly: Glick & Sharma (2020) showed that after six months of use of appropriately fit hearing devices “reversed cross-modal recruitment of the auditory cortex for visual processing” was noted, and there were significant improvements in speech perception, cognitive function, executive function, processing speed, and visual working memory.

Contrera, et al (2017) conducted a retrospective study on the loneliness experienced by people with a hearing loss. After cochlear implantation, individuals who exhibited a higher degree of loneliness before any hearing treatment showed the greatest reduction in feelings of loneliness and related symptoms after treatment. On average, loneliness symptoms significantly reduced for CI recipients, while no significant reductions in loneliness symptoms were observed for HA-users at 6- and 12-months after treatment.



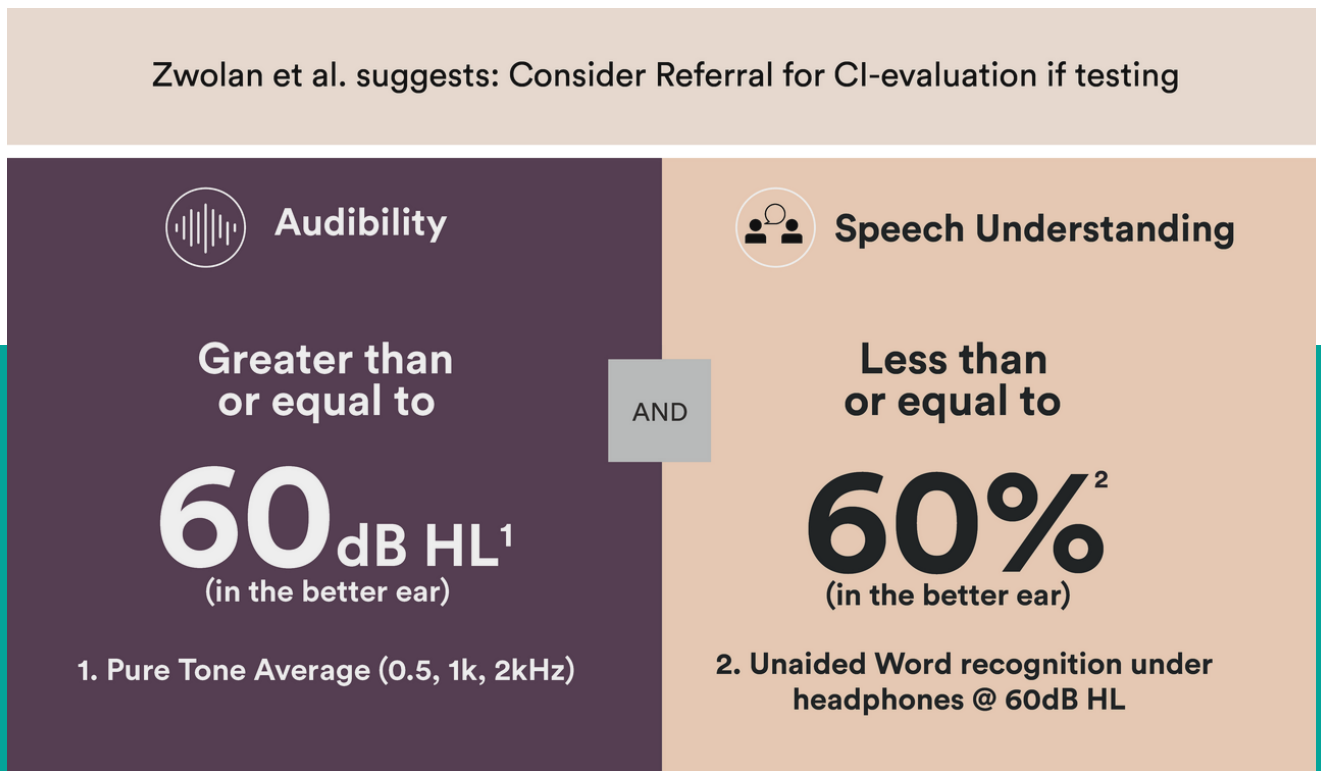
In cases where hearing aids are no longer sufficient to address the hearing loss; cochlear implantation has become “the treatment of choice” for adults with severe to profound hearing loss.



There are a number of factors that need to be taken into consideration prior to implanting a patient. Some of those factors include audiological criteria, radiology and medical assessment, duration of deafness and age. Adult cochlear implantation candidacy has progressed from patients with bilateral profound sensorineural hearing loss (SNHL) to include patients with greater degrees of residual hearing, single-sided deafness and asymmetric hearing, and atypical aetiologies of hearing loss (eg, vestibular schwannoma, Ménière’s disease, and otosclerosis). Indications for paediatric cochlear implantation have similarly evolved from children with bilateral severe to profound SNHL to implanting children at a younger age, including those with residual hearing, asymmetric hearing loss, inner ear malformations, as well as cochlear nerve deficiency.

In a study conducted by Zwolan et. al (2020) they developed a tool known as the 60/60 rule to use as a guideline to help audiologists identify when a patient should be referred for a cochlear implant evaluation.

The picture below indicates the criteria for referral for a cochlear implant evaluation:



As stated in statement 13 of the International Consensus Paper Systematic review and consensus: Unilateral cochlear implants for bilateral severe, profound, or moderate sloping to profound sensorineural hearing loss.

“ Long durations of unaided hearing loss do not rule out potential benefit of cochlear implants: individuals 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.” This is applicable to adults and progressive hearing loss.

There is no lower or upper age limit to receiving a cochlear implant. However, due to the chemicals used to sterilise a cochlear implant array, a child must weigh at least 7 kg before they can be implanted, and an adult has to be medically fit to undergo surgery. Cochlear implant surgery is highly technical but very safe, quick and effective.

Research has also shown cochlear implantation in the elderly to be safe and effective; post-surgical complications are rare; the most common being short-lived imbalance.

Speech recognition outcomes in adults over 80 are comparable to those of younger adults in some studies and slightly lower in others and that any differences in performance between older and younger recipients are better accounted for by longer duration, device-related factors specific to electrode position and insertion depth.

The oldest patient to receive a cochlear implant in South Africa, was 93 years old at the time of implantation. We are currently following the story of 85-year-old Theresia Wysoke who has been implanted and is awaiting her switch-on. Follow our Southern ENT Facebook page to be part of her hearing journey. It is never too late to offer our patients the quality of life that they deserve. You can also find a list of cochlear implant clinics on our website:

[www.southernear.com](http://www.southernear.com)

