Invitation to Review Draft CI Guidelines for Consultation

We are pleased to share a draft version of the Cochlear Implant (CI) Referral, CI Evaluation and Candidacy, and CI Outcome Evaluation Guidelines for Adults, adapted for the Australian and New Zealand context. These guidelines have been developed by the ANZ Hearing Health Collaborative (ANZ HHC) adapted from the global Living Guidelines which are based on global best practices and expert clinical consensus.

Key Aspects of the Initiative:

1. Evidence-Based and Continuously Updated ("Living" Guidelines)
2. International Collaboration
3. Scope of the Guidelines
    - Referral Criteria: Identifying individuals who may benefit from a CI.
    - Evaluation & Candidacy: Defining assessment processes and candidacy criteria.
    - Outcomes & Follow-up: Setting standards for measuring success and patient outcomes.
4. Global Impact and Local Adaptation
5. Goal: Expanding Access to CI

We invite you to review these Australian/New Zealand draft guidelines and provide feedback to ensure they align with the needs of New Zealand audiology professionals and the broader hearing health community. Consultation Period: Open until 15th of April 2025.

## ANZ Hearing Health Collaborative (ANZ HHC): Living Guidelines for Cochlear Implant (CI) Referral, CI Evaluation and Candidacy, and CI Outcome Evaluation in Adults

This document summarises the ANZ adaptation of the Global Living Guidelines as they relate to the areas of:

1. **CI referral**
2. **CI evaluation**
3. **CI candidacy recommendation**
4. **CI outcome evaluation.**

The Global Living Guidelines were informed via systematic review of evidence, and, where evidence was not available, via the clinical expertise of the Task Force. The ANZ HHC working group members adapted the Global Living Guidelines based on clinical expertise and strong agreement on the applicability of evidence to the ANZ context.

This is a subset of work which will subsequently be completed on broader guideline development for adults with hearing loss.

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**List of Acronyms**

| | |
|---|---|
| AHL | Asymmetrical hearing loss |
| ANZ | Australia and New Zealand |
| CI | Cochlear implant |
| dB | Decibel |
| dB HL | Decibel hearing loss |
| Hz | Hertz (measure of frequency of sound) |
| PROM | Patient-reported outcome measure |
| PTA | Pure tone average |
| SSD | Single-sided deafness |
| WG | Working Group |

**Glossary**

**AB words**: The AB word lists, devised by Arthur Boothroyd, are widely used in speech audiometry for assessing speech recognition and rehabilitation. The AB short word list consists of eight-word lists, with each list containing ten, single syllable words.

**Audiologist**: A professional who assesses and treats hearing, balance, tinnitus, and auditory processing issues for clients of all ages. They perform diagnostic tests, including advanced electrophysiological methods, and provide rehabilitation services such as counselling, communication training, and fitting of hearing aids and other assistive devices. They also have expertise in implantable hearing devices and collaborate with other professionals for comprehensive care. In Australia and New Zealand, Audiologists must have completed at least the equivalent of an Australian or New Zealand university Masters-level degree in clinical audiology.

**Audiometrist**: A professional who primarily works with adults and school-aged children, focusing on hearing and auditory function assessment and rehabilitation. They use diagnostic tests, counselling, and fit non-implantable devices like hearing aids and earplugs. They also provide tinnitus rehabilitation through education and hearing aids. In Australia and New Zealand, Audiometrists must have undertaken at least the equivalent of an Australian Diploma-level Technical and Further Education (TAFE) vocational qualification in audiometry or a Bachelor of Audiometry from an Australian university. In New Zealand, a recognised qualification is also required from the professional organisations and is outlined on the NZAS website (https://audiology.org.nz/nzas-members-only/professional-standards/audiometrist-scope-of-practice/)

**Auditory neuropathy**: A hearing disorder characterized by normal outer hair cell function but impaired auditory nerve function, or higher-level auditory processing difficulties. Individuals with auditory neuropathy may have difficulty understanding speech despite having some level of hearing sensitivity.

**Cochlear implant specialist:** an Ear, Nose, and Throat (ENT) surgeon, audiological or speech-language pathology (or equivalent) professional who specialises in cochlear implants.

**ENT surgeon**: An Ear, Nose, and Throat (ENT) surgeon, also known as an otolaryngologist, specializes in diagnosing and treating disorders related to the ear, nose, throat, and related structures. They perform surgeries and manage conditions such as hearing loss, sinus issues, and throat disorders.

**Mixed hearing loss:** a condition where both conductive and sensorineural hearing loss are present. It affects both the outer or middle ear and the inner ear or auditory nerve.

**Multidisciplinary team**: A team of healthcare professionals from different disciplines who collaborate to integrate comprehensive care and support for patients. In the context of hearing health and CI services, a multidisciplinary team may include audiologists, ENT surgeons, speech-language pathologists, psychologists, educators, and other specialists.

**Patient-reported outcome measure (PROM)**: Patient-reported outcome measures are questionnaires completed by patients to provide information on the impact of disease and medical intervention (such as a medical device) on their symptoms and quality of life. PROMs can provide insight that is not captured in other clinical measures and that reflect a person's own perception of their experience.

**Tinnitus:** The perception of ringing, buzzing, or other sounds in the ears or head when no external sound source is present. Tinnitus can be temporary or chronic and may be associated with hearing loss or other underlying conditions.

## Instructions for Reviewers:

**Open word document as a new copy by downloading to your computer. Enable editing and complete. Once finished, send to email anzguidelines@adulthearing.com. For any issues please reach out to anzguidelines@adulthearing.com for any assistance.**

- Please review each guideline statement and indicate mark your response in the appropriate column by clicking the box which will show an X.
    - Response options are:
        1. Accept
        2. Do not Accept.
        3. No Applicable
- If you **do not accept** a guideline or statement, please provide context or justification.
- If a guideline is **not applicable** to your area of expertise, select "Not Applicable" to bypass it.
- Your feedback helps refine these guidelines to ensure alignment with best practices.

## Please tell us about yourself:

**Name:**

**Role:** Choose an item.

**State you are based in:** Choose an item.

**Email:**

**Any other comments you would like to provide?**

## ANZ guidelines: Referral guidelines for CI evaluation

A cochlear implant evaluation is a comprehensive process to determine if an individual is a suitable candidate for cochlear implantation. Only following the comprehensive evaluation, conducted with input from a multidisciplinary team, can an individual's likelihood to benefit from a CI be determined.

A referral for a cochlear implant evaluation does not mean a person will automatically be recommended to have an implant. The evaluation process is a comprehensive review, with input from a multidisciplinary team, to determine if a person is a suitable candidate. Recommendations from the evaluation aim to assess the likelihood of benefit from cochlear implantation and provide detailed information to help the individual understand the process and support them in making an informed decision about their hearing and communication options.

Referral guidelines for CI evaluation are detailed below for three separate audiences:

1. Adults and their significant others
2. Health Professionals
3. Hearing Healthcare Professionals

**Guideline for adults and their significant others:**

| Guideline Statement | Accept | Do Not Accept | N/A | Justification (if "Do Not Accept") |
|---|---|---|---|---|
| If you or someone you know has permanent hearing loss and experiences any of the following challenges, seek advice from a hearing healthcare professional and consider a referral to a cochlear implant specialist for a thorough evaluation and preoperative assessment. | ☐ | ☐ | ☐ | |
| ● Not getting enough benefit from hearing aids. | ☐ | ☐ | ☐ | |
| ● Missing half or more of what is being said in conversation. | ☐ | ☐ | ☐ | |
| ● Having difficulty hearing on the mobile or landline phone. | ☐ | ☐ | ☐ | |
| ● Relying on looking at people to understand what they are saying. | ☐ | ☐ | ☐ | |

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|---|---|---|---|---|
| ● Motivated to learn more about the next possible steps with support and guidance. | ☐ | ☐ | ☐ | |
| **Ongoing monitoring and re-evaluation:** | | | | |
| If you have been evaluated for a CI and were not recommended to proceed, you should consider reassessment if you experience deterioration in your hearing or communication | ☐ | ☐ | ☐ | |

**Guideline for Health Professionals:**

| Guideline Statement | Accept | Do Not Accept | NA | Justification (if "Do Not Accept") |
|---|---|---|---|---|
| Any adult can be referred for cochlear implant evaluation if they are experiencing moderately severe or worse hearing loss in either ear, and: | ☐ | ☐ | ☐ | |
| ● The individual (and/or a significant other) expresses difficulties understanding speech in their everyday environment despite using hearing aids. This may include: | ☐ | ☐ | ☐ | |
| ● Not getting enough benefit from hearing aids | ☐ | ☐ | ☐ | |
| ● Missing half or more of what is being said in conversation | ☐ | ☐ | ☐ | |
| ● Having difficulty hearing on the mobile or landline phone | ☐ | ☐ | ☐ | |
| ● Relying on looking at people to understand what they are saying | ☐ | ☐ | ☐ | |
| ● The individual (and/or a significant other) is motivated to learn more about the next possible steps with support and guidance | ☐ | ☐ | ☐ | |

| | | | | |
|---|---|---|---|---|
| Adults meeting the above criteria can benefit from referral to a cochlear implant specialist for a comprehensive, multidisciplinary cochlear implant evaluation and preoperative assessment. | ☐ | ☐ | ☐ | |
| **Ongoing monitoring and re-evaluation:** | | | | |
| Many adults will require multiple discussions with a health professional before considering referral for CI evaluation. Healthcare professionals are encouraged to explore the reasons an individual is hesitant to consider referral and provide further information and support | ☐ | ☐ | ☐ | |
| If an individual has been evaluated for a CI and was not recommended to proceed, re-referral and assessment should be considered if they experience deterioration in hearing or communication | ☐ | ☐ | ☐ | |

**Guideline for Hearing Health Professionals:**

| Guideline Statement | Accept | Do Not Accept | NA | Justification (if "Do Not Accept") |
|---|---|---|---|---|
| Any adult with sensorineural or mixed[1] hearing loss should be referred for cochlear implant evaluation if they meet the following criteria: | ☐ | ☐ | ☐ | |
| ● The individual (and/or significant other) expresses difficulties and/or dissatisfaction understanding speech in everyday communication despite optimized hearing aids. | ☐ | ☐ | ☐ | |
| ● Three-frequency (500, 1000, 2000 Hz) unaided pure tone average (PTA) in any ear equal to or greater than 60 dB HL (decibels hearing level) AND, aided monosyllabic phoneme score of less than | ☐ | ☐ | ☐ | |

[1] Mixed hearing loss warrants further otological evaluation to exclude middle ear pathology

| | | | | |
|---|---|---|---|---|
| 60% OR unaided phoneme score[2] (on AB words) of 70%[3] or less in any ear. | | | | |
| Adults meeting the above criteria should be referred to a cochlear implant specialist for a comprehensive, multidisciplinary cochlear implant evaluation and preoperative assessment. | ☐ | ☐ | ☐ | |
| **Ongoing monitoring and re-evaluation:** | | | | |
| Many adults will require multiple discussions with a health professional before considering referral for CI evaluation. Hearing Healthcare professionals are encouraged to explore the reasons an individual is hesitant to consider referral and provide further information and support | ☐ | ☐ | ☐ | |
| If an individual has been evaluated for a CI and was not recommended to proceed, re-referral and assessment should be considered every 1-2 years or sooner. This is recommended as there may have been a deterioration in the individual's hearing ability or functional performance. | ☐ | ☐ | ☐ | |
| Refer the individual to recognised communities or organisations that support people with hearing loss for personal, family, and social support as needed. | ☐ | ☐ | ☐ | |
| Re-referral may also be indicated due to evolving CI referral criteria and/or expansion of population who may benefit from a CI. | ☐ | ☐ | ☐ | |

[2] monosyllabic words at maximum presentation level

[3] Eikelboom et al (2025) Cochlear Implantation candidacy: Reimaging the 60/60 referral and criteria for the Australia context. Paper presented at Audiology Australia National Conference, 1-4 April, Adelaide.

**Further detail/rationale:**

- Guidelines reflect hearing in either ear given indication for CI in cases of asymmetric hearing loss (AHL) and single-sided deafness (SSD)
- Incorporates speech perception guideline relevant to ANZ context
- Unaided AB words under headphones, scored for phonemes correct, is consistently used in ANZ
- PTA is an accepted indicator for guiding referral for CI evaluation; however, this should not be considered exclusive. The configuration and stability of the hearing loss should be taken into consideration. For example, patients with a rapidly progressing or steeply sloping hearing loss should be considered for CI evaluation if they have high frequency hearing loss in the severe-to-profound range.
- Reported functional hearing and speech understanding in daily environments is an essential component of the CI referral guideline
- Hearing aids are considered optimised when the fitting has been appropriately verified[4] and adjusted to meet the individual wearer's needs and manufacturers' specifications.

**ANZ Practical information:**

- If required, follow the national, state or local guidelines for additional assessment criteria and eligibility for public funding.
- Consideration should be given for those who are Culturally and Linguistically Diverse (CALD); assessment tools measuring speech audibility and/or speech perception in the adult's dominant language may be required for more complex cases.
- Consideration should be given to test material selection for those with neuro-cognitive difficulties or with comorbidities impacting language and communication

[4] Turton, L., Souza, P., Thibodeau, L., Hickson, L., Gifford, R., Bird, J., ... & Timmer, B. (2020, August). Guidelines for best practice in the audiological management of adults with severe and profound hearing loss. In *Seminars in hearing* (Vol. 41, No. 03, pp. 141-246). Thieme Medical Publishers, Inc.

## ANZ Guidelines: CI candidacy evaluation

A cochlear implant candidacy evaluation is a comprehensive process, typically conducted over multiple appointments, to determine if an individual is a suitable candidate for cochlear implantation. Candidacy evaluation for adults will primarily comprise of both audiological and medical/ENT components. Only following the comprehensive evaluation, conducted with input from a multidisciplinary team, can an individual's likelihood to benefit from a CI be determined. Results of the candidacy evaluation also provide a baseline measure upon which outcomes can be measured against.

**Guideline for Professionals: CI candidacy evaluation for adults.**

Below are considered the minimum requirements for CI candidacy evaluation.

| Guideline Statement | Accept | Do Not Accept | NA | Justification (if "Do Not Accept") |
|---|---|---|---|---|
| Audiological evaluation will include: | | | | |
| 1. A detailed audiological case history focusing on the individual's current description and experience of communication, hearing goals, expectations, social participation and connection, social support systems, onset, progression and duration of hearing loss and history of hearing aid use. | ☐ | ☐ | ☐ | |
| 1. Evaluation of motivation and readiness to take action to improve communication | ☐ | ☐ | ☐ | |
| 2. Assessment of hearing and communication | ☐ | ☐ | ☐ | |
| ● Patient-reported hearing related quality of life | ☐ | ☐ | ☐ | |
| ● Measure(s) to quantify socio-emotional impact of hearing loss | ☐ | ☐ | ☐ | |
| ● Type and degree of hearing loss | | | | |

| | | | | |
|---|---|---|---|---|
| • Individual ear air and bone conduction audiometry at octave frequencies (including masking as required) | ☐ | ☐ | ☐ | |
| • Tympanometry and acoustic reflexes | ☐ | ☐ | ☐ | |
| • Aided speech perception | | | | |
| • Conducted with optimised hearing aids | ☐ | ☐ | ☐ | |
| • Assessed audition alone in quiet and (if client is capable) background noise | ☐ | ☐ | ☐ | |
| • Assessed in monaural and binaural conditions | ☐ | ☐ | ☐ | |
| 4. Vestibular function | ☐ | ☐ | ☐ | |
| • Patient should undergo vestibular assessment if there is an active or prior history of balance disorders or if otherwise deemed appropriate by their treating specialists | ☐ | ☐ | ☐ | |
| Medical/ENT evaluation will include: | | | | |
| 1. Assessment of anatomy and health of ears | ☐ | ☐ | ☐ | |
| • Imaging | ☐ | ☐ | ☐ | |
| • CT scan of the temporal bones | ☐ | ☐ | ☐ | |
| • And/or MRI which includes imaging of the cochlea's, auditory nerves, and internal acoustic canals | ☐ | ☐ | ☐ | |
| • If MRI is unavailable or contraindicated, then CT brain with contrast is recommended as an alternative | ☐ | ☐ | ☐ | |
| • Otologic health | ☐ | ☐ | ☐ | |

| | | | | |
|---|---|---|---|---|
| • Examination of external ear canals and middle ears by ENT to exclude infection or other active middle ear disease | ☐ | ☐ | ☐ | |
| 2. General health | ☐ | ☐ | ☐ | |
| • General medical, comorbidities and/or neurocognitive issues reviewed and considered | ☐ | ☐ | ☐ | |
| • Cognitive function | ☐ | ☐ | ☐ | |
| • Fitness for anaesthesia | ☐ | ☐ | ☐ | |
| • Vaccination status and recommendation in accordance with current national immunisation guidelines for cochlear implant recipients [5] | ☐ | ☐ | ☐ | |

**Additional considerations that may apply for CI candidacy evaluation:**

- For adults with prelingual onset of hearing loss, spoken language development and speech intelligibility can assist in determining history of functional use of hearing during early childhood.
- History of hearing aid use
- Application of closed set testing for individuals unable to complete open set testing
- Application of audition alone (AA) vs auditory-visual (AV) testing for individuals with minimal open set speech perception
- Measure of spatial hearing (e.g. SSQ spatial domain subtest and/or localization and/or spatially separated speech perception) for those with SSD/AHL
- Trial of less invasive technology such as CROS aid and/or bone conduction device (on headband) for those with SSD/AHL.
- Presence and severity of tinnitus and individual's desire for tinnitus suppression as motivator for considering CI.
- Presence of features consistent with Auditory Neuropathy
- Application of cognitive screen or testing suitable for those with hearing loss (such as the MOCA-HI or MMSE) to determine if further investigation is warranted.
- When present, investigate causes of mixed hearing loss to determine alternative approach to remediation.

[5] Immunisation for people with medical risk conditions | Australian Government Department of Health and Aged Care

- Medical management of active middle ear infection (implantation may be possible after medical treatment)
- Presences of co-existing disabilities such as blindness may increase the urgency of hearing rehabilitation

## ANZ Guideline: CI candidacy

The cochlear implant candidacy guideline provides an evidence-based reference point for recommending cochlear implantation. CI recommendation should only be made following a comprehensive candidacy evaluation, conducted with input from a multidisciplinary team.

**Guideline for Professionals: CI candidacy evaluation for adults**

| Guideline Statement | Accept | Do Not Accept | NA | Justification (if "Do Not Accept") |
|---|---|---|---|---|
| CI evaluation results should be considered by a multidisciplinary team | ☐ | ☐ | ☐ | |
| Audiological candidacy applicable to *Australia*: | | | | |
| A. For those with post-lingual onset of hearing loss:<br>It is widely accepted, and evidence suggest that cochlear implantation can be confidently recommended if: | | | | |
| ● Moderate-to-severe average sensorineural hearing loss or worse in the ear being considered for implantation | ☐ | ☐ | ☐ | |
| ● Aided monosyllabic *phoneme* score (e.g. CNC) ≤55% and/or *sentence* score (e.g. CUNY) in quiet ≤60% in the ear being considered for implantation (presented in the free field at 65dBSPL)[6] | ☐ | ☐ | ☐ | |
| B. For those with pe-lingual onset of hearing loss: | | | | |
| ● Moderate-to-severe average sensorineural hearing loss or worse | ☐ | ☐ | ☐ | |
| ● Evidence that auditory cues assist communication | ☐ | ☐ | ☐ | |

[6] Leigh, J. R., Moran, M., Hollow, R., & Dowell, R. C. (2016). Evidence-based guidelines for recommending cochlear implantation for post lingually deafened adults. *International Journal of Audiology*, *55*(sup2), S3-S8.

| | | | | |
|---|---|---|---|---|
| Audiological candidacy applicable to *New Zealand:* | | | | |
| A. Hearing House https://www.hearinghouse.co.nz/referrals | ☐ | ☐ | ☐ | |
| B. Southern Cochlear Implant Program https://scip.co.nz/what-we-do/refer-patient/ | ☐ | ☐ | ☐ | |
| Medical candidacy: | | | | |
| • Evidence that the cochlea and auditory nerve, in the ear to be implanted, is accessible by an implant and the electrode array and package can be placed safely and securely | ☐ | ☐ | ☐ | |
| • There are no surgical contraindications | ☐ | ☐ | ☐ | |
| • Evidence that the individual has sufficient cognitive ability to engage with rehabilitation/programming and use the sound from the cochlear implant in a meaningful way | ☐ | ☐ | ☐ | |
| • Multidisciplinary team recommendation presented to the individual in the context of potential benefits and risks of the proceeding with cochlear implant surgery | ☐ | ☐ | ☐ | |

**Factors which may significantly impact on CI candidacy evaluation and recommendation:**

- Absent cochlea and/or absent auditory nerve confirmed by imaging.
- Tinnitus suppression as primary motivation for considering cochlear implant in the absence of severe-profound hearing loss.
- Pre-lingual onset of severe hearing loss and no evidence of sound being used in a meaningful way to augment communication during childhood.
- Any other medical, surgical, or psychosocial contraindications deemed relevant by treating clinicians.

**ANZ Practical information:**

- If required, follow the national or state guidelines for eligibility for public CI surgery funding.

## ANZ Guidelines: Patient Measures and Outcomes

Measuring the outcome of cochlear implantation is essential for ensuring clinical effectiveness and patient satisfaction, at individual, clinic-wide and public-health levels. In order to ensure validity of measures, it is important that, wherever possible, validated, population-specific outcome measures, developed using current gold-standard principles are used to assess outcomes. CI outcome evaluation should comprise patient-reported outcome measures (PROMs), patient-reported experience measures (PREMs), behavioural, and objective measures.

Post-operative outcome measures can be compared to pre-implant measures to quantify the benefit of the cochlear implant across the domains assessed.

**Guideline for Professionals: Patient Measures and Outcomes**

Below are considered the minimum requirements for CI outcome evaluation.

| Guideline Statement | Accept | Do Not Accept | NA | Justification (if "Do Not Accept") |
|---|---|---|---|---|
| CI outcome evaluation should assess the following, with suggested outcome measures: | | | | |
| 1. Patient-reported outcome measures (PROMs)<br>One of the following measures of hearing-related quality of life, including domains of participation, wellbeing, and stigma, and speech perception | ☐ | ☐ | ☐ | |
| ● CIQoL-35 Profile (35 items, domains communication, emotional, entertainment, environment, listening effort and social); the CIQoL-10 Global measure (10 items; no specific domains) | ☐ | ☐ | ☐ | |
| ● LivCI (22 items, domains: participation, psychosocial and wellbeing, stigma, device aesthetics and management) | ☐ | ☐ | ☐ | |

| | | | | |
|---|---|---|---|---|
| ● SSQ-12 (12 items, domains: speech, spatial and qualities of hearing) | ☐ | ☐ | ☐ | |
| ● Other evidence-based measures not listed here or in development that evaluate quality of life changes may be used at some clinics | ☐ | ☐ | ☐ | |
| 2. Objective measures | ☐ | ☐ | ☐ | |
| ● Review device hardware function and electrode impedance | ☐ | ☐ | ☐ | |
| 3. Behavioural outcome measures | ☐ | ☐ | ☐ | |
| ● Sound detection/audibility (confirmation of minimal levels of sound detection across key audiometric frequencies that enable access to soft speech whilst maintaining comfort for loud sounds) | ☐ | ☐ | ☐ | |
| ● Speech Perception [assessed audition alone in quiet and (if suitable for client) background noise using appropriate tests (as above)] | ☐ | ☐ | ☐ | |

**Further detail/rationale:**

- PROMs capture the patient's perspective on their hearing ability and aspects of quality of life (e.g. wellbeing). The perspective of family and significant communication partners should also be considered.
- Behavioural outcomes measure functional hearing with the implant (e.g. speech perception). Whilst these are the most-commonly used type of measure to assess functional outcomes, they can be influenced by both patient factors (e.g. test language vs dominant language, attentiveness, co-operation, cognitive ability) and tester factors (e.g. response interpretation).
- Objective measures are independent of patient co-operation, and therefore less affected by patient factors but may still require tester interpretation. Outcomes measure the function of the sound processor and implant as it interfaces with the inner ear (e.g. functioning and integrity).

**Additional considerations for CI outcome evaluation:**

- PROMs and speech perception tests should be administered before cochlear implantation to establish an individual's baseline and then again at least once 3–12 months after the cochlear implant is activated to measure personal progress.
- Speech perception assessment in CI alone and binaural conditions for bimodal and bilateral device users
    - demonstrates overall functional hearing performance.
    - allows contribution of the hearing aid ear to be monitored in the case of bimodal device users.
- Use of validated speech perception measures
    - in the dominant language of the adult cochlear implant user if possible
    - consisting of words and/or sentences in quiet and noise
    - Should avoid ceiling (meaning the test is too easy for the population being assessed) and floor (meaning the test is too hard for the population being assessed) effects (e.g. adaptive testing).
- Tools used should be validated in the cochlear implant user's dominant language if possible.