Foundations of Cochlear Implants: Candidacy & Counseling for Cochlear Implants

Learning Goals

After participating in this session, professionals should be able to:

- List and utilize the most common tests used to assess patients for cochlear implant candidacy
- Identify candidates for cochlear implants using their audiometric and speech perception information
- List candidacy factors which contribute to internal device choice and decisions about bilateral implantation
Cochlear’s Mission

**We help people hear and be heard.**

We **empower** people to connect with others and live a full life.

We **transform** the way people understand and treat hearing loss.

We **innovate** and bring to market a range of implantable hearing solutions that deliver a lifetime of hearing outcomes.

Candidacy is a journey, not a destination…

“I need help”

This course is presented in partnership with continued™
Person-Centered Care:
Optimal outcomes are achieved with input and accountability from the individual and other professionals working collaboratively. This approach considers the whole person, taking into account more than the physical symptoms of a disorder. It includes the psychological, social and environmental factors as well.¹


This course is presented in partnership with
Testing for Candidacy - Adults

Adult Minimum Speech Test Battery

- The Minimum Speech Test Battery (MSTB) for adults was created by an independent working group
- The revised edition was released in July 2011
- Includes test materials and instructions for testing
- Available from Cochlear (FUZ318)
- Score sheets are at www.auditorypotential.com


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Setting up the Booth

- Sound-isolated booth with loudspeaker and chair
  - Minimum room size recommended is 6x6 feet
  - Loudspeaker 1 meter from listener
  - Additional loudspeaker for testing in noise
- Calibration
  - Input calibration – calibrate the CD input with the VU meter on the audiometer
  - Output calibration – use Sound Level Meter to ensure an output of 60 dBA

Details on room set-up and calibration can be found in the MSTB Manual available at www.auditorypotential.com

Selecting Tests

Tests included in the MSTB:
- CNC words (10 lists)
- AzBio sentences (8 lists)
  - Quiet
  - 10-Talker Babble
- BKB SIN (8 list-pairs, standard version; speech and noise from same speaker) ($S_0N_0$)

Recommended Protocol1:
- One 20-sentence list of AzBio in quiet
- One 20-sentence list of AzBio in noise (+10 SNR or +5 SNR depending on the abilities of the listener)
- One 50-word list of CNC words
- One 16-sentence list-pair (8 sentences per list) of the BKB-SIN


Each test is expected to take 5-7 minutes to complete
Instructing Candidate

- Tests will be challenging for many candidates – acknowledge this
- Candidate should keep hearing aids on
- Instruct the candidate to listen to the sentences or words (ignoring any noise) and repeat back whatever words are heard

Scoring

- CNC Words: word score and phoneme score
- AzBio: scored by words correct
- BKB-SIN: key words correct are scored on sheet to provide SNR-50 (signal-to-noise ratio for 50% correct)
Testing for Candidacy - Pediatrics

Multidisciplinary Evaluation

Team Members:
- Audiologist
- Surgeon
- SLP
- Parents
- Teacher
- Early Intervention
- Other Therapists
Determining Candidacy for Pediatrics

1. Determination of hearing thresholds
   - Age-appropriate behavioral testing
   - Objective measures as required

2. Verify Hearing Aid Fitting

3. Determination of speech perception abilities
   - Questionnaires
   - Age-appropriate Speech Perception testing
   - Soundfield Thresholds

4. Evaluation of speech and language development

5. Evaluation of overall development

Minimum Speech Test Battery for Children

Minimum Speech Test Battery for Children

Recommended Testing Parameters:

1. Stimulus presentation via recorded testing materials
2. Assessment of speech at conversational loudness (pg. 60-61)
3. Assessment of word-list (pg. 45)
4. Assessment of speech in noise (pg. four-talker babble) at +5 dB signal-to-noise ratio, unless otherwise specified in the manual

Candidacy Determination

INDICATION VS CANDIDACY
Candidate

Definition: a person or thing regarded as suitable for or likely to receive a particular treatment or position

Will a hearing implant meet this patient’s needs and goals better than the best non-surgical treatment we’ve given them up until now?

Candidacy testing should answer these questions:
• What are the patient’s goals?
• What could we expect their performance to be with a cochlear implant (based on age, hearing loss, etc.)?
• What is their current performance with the best non-surgical treatment we can provide now?

How is success defined for this patient?
**Cochlear™ Nucleus® Cochlear Implant Indications**

**Cochlear Implant:**
- Sentence Score no better than 50% in the ear to be implanted and no better than 60% in the best aided condition

**Medicare National Coverage Determination:**
- Sentence Score no better than 40% (best aided) unless enrolled in a clinical trial

Current opportunity: Evaluation of Revised Indications for Cochlear Implant Candidacy for the Adult CMS Population

https://clinicaltrials.gov/ct2/show/NCT02075229

**Cochlear™ Hybrid™ L24: An Expanded Indication**

**Ear to be Implanted**
- Aided CNC word score between 10% and 60% correct, inclusively
- Normal to moderate SNHL in the low frequencies; PTA of 2k, 3k, 4k ≥ 75 dB HL

**Contralateral Ear**
- Aided CNC word score better than ear to be implanted but less than 80% correct
- PTA of 2k, 3k, 4k ≥ 60 dB

**Adults***
- aged 18 years and older
- unilateral implantation of poorer ear

*The Hybrid L24 Implant is approved in the US for adults ages 18 years and older for unilateral use only
Summary of Cochlear™ Nucleus® Indications

For Hybrid L24*: BEST AIDED

Word (CNC) score ≥10% and ≤60% in the poorer ear (ear to be implanted)
  - PTA of 2k, 3k, 4k ≥ 75 dB HL

Word (CNC) score ≤ 80% in the opposite ear (better ear)
  - PTA @ 2k, 3k, 4k ≥ 60 dBHL

For Traditional CI: BEST AIDED

Sentence score ≤ 50% in the poorer ear

Sentence score ≤ 60% in the best listening condition

Medicare: Sentence Score no better than 40% (best aided) unless enrolled in a clinical trial

Pediatric Indication

- Children 12 to 24 months of age who have bilateral profound sensorineural deafness and demonstrate limited benefit from appropriate binaural hearing aids.
  - lack of progress in the development of simple auditory skills in conjunction with appropriate amplification and participation in intensive aural habilitation over a three to six month period.
  - quantified on a measure such as the Meaningful Auditory Integration Scale or the Early Speech Perception test

- Children two years of age or older may demonstrate severe to profound hearing loss bilaterally.
  - ≤ 30% correct on the open set Multisyllabic Lexical Neighborhood Test (MLNT) or Lexical Neighborhood Test (LNT), depending upon the child’s cognitive and linguistic skills. A three to six month hearing aid trial is recommended for children without previous aided experience.
Cochlear™ Nucleus® Cochlear Implant Indication

**Pediatric: 12 – 24 months**

Pediatric: 2 – 17 years

<30% MLNT or LNT in best aided condition

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Bilateral implantation can lead to better speech understanding than unilateral and bimodal conditions, especially for complex listening tasks\(^1\).

Candidates not demonstrating benefit with bimodal listening in noise (AzBio at +5 SNR) may be better served with a bilateral implant\(^1\).

Residual hearing in the non-implanted ear does not necessarily predict amount of benefit in bimodal condition\(^1\).

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Counseling for Cochlear Implant Candidates

Audiologist’s Role

Informational Counseling
The “thinking” mind

- Providing information about the implant – does the candidate have the information they need to make an informed decision?

Emotional & Psychological Counseling
The “feeling” mind

- Addressing the candidate’s concerns – what are their expectations for the implant and how do they feel about getting an implant?


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This course is presented in partnership with

Informational Counseling

You are a candidate for cochlear implants in both ears. Let’s talk about your choices for processors...

I did poorly on my hearing test, as usual. I thought cochlear implants were only for deaf people and I’m not “deaf.” I don’t understand how this could be for me.
Tips for Informational Counseling

- What does the candidate want to know?
- Use words the candidate can understand and process
- Don’t get more detailed than the candidate can follow
- Don’t provide information unrelated to candidate’s questions or concerns
- Help candidates apply information to their own lives
- Does the candidate understand?
- Will the candidate remember?


Informational Counseling

You’ve said you feel you are struggling more with your hearing – well, your tests certainly show that. I think cochlear implants will help you – what would you do differently in your life if you could hear better?

It would be amazing to get help – I want so much to go back to work!
Let me show you the different devices that are available for your son. This one is behind the ear and this one is off the ear. This one has 6 different colors – this one has 8…

Will John still be able to play baseball after he gets implants? Are his friends going to make fun of him? He uses an FM system now, I guess that won’t work anymore?

Before we talk about all the different devices available, tell me about John. What does he like to do for fun? Is there anything you think he would like to do more if he could hear better?

John loves sports and also likes to connect with his devices. It will be so amazing if he is able to use his implants while he does his favorite things!
Important points to cover

• Why would implants be successful for this particular person over hearing aids?
• What will the process be and how will the candidate have control over the process?
• What is available to support the candidate to help them learn more?
• What features might help this particular candidate achieve their goals?

Know your candidate’s individual concerns!

Capturing Candidate Goals: COSI

NAL
CLIENT ORIENTED SCALE OF IMPROVEMENT

Name: Category: New Return Degree of Change

Final utility (with hearing aid):

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This course is presented in partnership with
Capturing Patient Goals: Cochlear’s Candidacy Evaluation Worksheet

Pre-Operative Candidacy Evaluation

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<th>Satisfaction with Hearing Aids</th>
<th>Very Satisfied</th>
<th>Satisfied</th>
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If the majority of satisfaction ratings are “neutral” or “dissatisfied”, proceed with the rest of evaluation and determine implant candidacy.

Predicting Outcomes

What will cochlear implants do for ME?

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This course is presented in partnership with

Predicting Outcomes

Patient Factors
- Onset age of hearing loss
- Cognition
- Support and Motivation

Hearing Loss Factors
- Length of Deafness
- Etiology
- Residual Hearing

Device Factors
- Distance between electrode and modiolous
- Percentage of active electrodes
- Number of electrodes in scala tympani


Factors with little or no influence on performance
- Gender
- Level of education
- Implanting the better vs worse ear
- Surgical approach
- Depth of insertion

Factors with strong influence on CI outcome
- PTA of the better ear and in the implanted ear
- Preservation of residual hearing
- Hearing aid use
- Duration of hearing loss
- Percentage of active electrodes

Lazard and colleagues studied 2251 patients with cochlear implants to determine the factors which influence speech perception. Here is what they found...
Predicting Outcomes

Zwolan and colleagues studied 38 subjects across 13 sites with the Cochlear\textsuperscript{TM} Nucleus\textsuperscript{®} 5 System in a robust, repeated-measure, single-arm design. The group was split into patients under 65 years of age (n=20) and patients over 65 years of age (n=18) but no statistical difference was seen between the two groups\textsuperscript{1}.


I cannot predict exactly what your outcome will be, but you meet the indication for implants in both ears, which means it is very likely you will hear better with cochlear implants than you do now. Remember how you told me you could no longer go out with friends because you could not hear well?...
Partnering with a Company for Life

External technology will change but the Company won’t

As the industry pioneer, we make the industry’s largest investment in Research and Development to improve your patients’ lifelong hearing experiences1

Our technology is built on a reliable foundation which allows recipients to take advantage of future technology2

More people trust their hearing to Cochlear than all other hearing implant companies combined1

2 Publication: Nucleus Reliability Report, Vol. 15, February 2017

Emotional Counseling

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Now that I have told you all about cochlear implants, it is time to schedule an appointment with the surgeon.

I'm really not ready for this – I'll let her schedule the appointment but I doubt I'll go.

Tips for Emotional and Psychological Counseling

- Look for pauses and loss of eye contact
- Encourage back and forth dialogue rather than just providing information
- Ask lots of questions
- Know when to refer for more professional counseling

We’ve discussed a lot – how do you feel about all of this? If you would like, I can put you in touch with someone who has been through the process.

I’m so glad I don’t have to make a decision today – I’m looking forward to having someone to talk to.

We are here to help

• Begin the journey at www.cochlear.com/us/
• Find out more about hearing loss and implants
• Find stories of other recipients
• Request a candidate guide
They have questions, we have time

Concierge Team

- Includes individuals who are audiologists, recipients, parents and native Spanish speakers
- They will answer all questions – from easy to difficult – and will support your patient regardless of what they decide
- They have supported thousands of candidates on their journey

concierge@cochlear.com
1-800-216-0228

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