The need for a new cochlear implant candidacy protocol

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Disclosures

- Serve on Cochlear’s Audiology Advisory Board
Current Candidacy Battery

- Medicare: 40% or poorer on sentence test in best aided condition
- Private Insurance: 60% or poorer in best aided condition and 50% or poorer in ear to be implanted
Current Candidacy Battery

- Quiet or Noise?
- How much noise?
Obtain Az Bio scores in quiet and noise in best aided condition and unilateral conditions and CNC word scores in unilateral conditions.

Ultimately CNC word score determines candidacy.

Use of average post-operative CNC word scores and binomial table helpful in counselling process.
Recent Study

- 13 sites
- 100 subjects
- Comprehensive Audiology and Health Assessment Battery

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean (S.D.)</th>
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<tbody>
<tr>
<td>Age at Implantation</td>
<td>67.39 years ($\pm 15$ yrs)</td>
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<td></td>
<td>Range: 23 – 91 years</td>
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<tr>
<td>Gender</td>
<td>62 males (65%)</td>
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<tr>
<td></td>
<td>34 females (35%)</td>
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<td>Ipsilateral Ear Mean (SD)</td>
<td>Contra Ear Mean (SD)</td>
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<tr>
<td>Duration of Hearing Loss</td>
<td>27.1 years ($\pm 14$ yrs)</td>
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<tr>
<td>Pre CI CNC Word Score</td>
<td>15% ($\pm 12%$)</td>
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<tr>
<td>Pre CI AzBio +10 Score</td>
<td>15% ($\pm 17%$)</td>
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<tr>
<td>Pre CI PTA (500, 1 &amp; 2 KHz)</td>
<td>85 dB ($\pm 15, dB$)</td>
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<tr>
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<td>78 dB ($\pm 13, dB$)</td>
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Speech outcomes – 6m  N=96

Group Mean Score at 6m
Speech outcomes – Baseline  N=96

- CNC: 15%
- AzB +10: 15%
- AzB +5: 9%

Group Mean Score at Baseline: 61%
Group Mean Score at 6m: 43%
What is the SSQ-12?

- A self-assessment questionnaire designed to give an impression of perceived disability

- 12 items that continue to measure across the same domains (Speech, Spatial, Quality)
- Items were avoided that attracted a significant number of “not applicable” responses
- Items with wider rather than narrow ranges of responses.

Based on the questions of the SSQ (49)

Close agreement between original SSQ and SSQ12

Noble, 2013
SSQ 12 Questions

1: You are talking with one person and there is a TV on in the same room. Without turning the TV down, can you follow what the person you’re talking to says?

Not at all  | Perfectly
---|---
0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10

3: You are in conversation with one person in a room where there are many other people talking. Can you follow what the person you are talking to is saying?

Not at all  | Perfectly
---|---
0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10

4: You are in a group of about five people in a busy restaurant. You can see everyone else in the group. Can you follow the conversation?

Not at all  | Perfectly
---|---
0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10

NH Range: Older Adults

Banh, Singh & Pichora-Fuller (2012)
Mean Age 70 years NH

X = Baseline  X = 6 months  X = NH Older Adult Average
CNC word scores are best metric to determine candidacy and assess progress post-operatively.

Testing in noise shows benefit from CI, but is not a good candidacy measure due to variability and additional central processing requirements. Recommend use of the SSQ12 to best reflect real world experience in noise.
Thank you to these sites:

- Washington University, St. Louis, MO
- Center for Hearing and Balance, St. Louis, MO
- Dallas Ear Institute, Dallas, TX
- Ear Medical Group, San Antonio, TX
- Hearts for Hearing, Oklahoma City, OK
- Midwest Ear Institute, Kansas City, KS
- New York University, New York, NY
- Ohio State University, Columbia, OH
- Rocky Mountain Ear Center, Denver, CO
- Spokane ENT, Spokane, WA
- University of California San Francisco, CA
- University of Iowa, Iowa City, IA
- University of Michigan, Ann Arbor, MI