



## DEFINITION OF 'OPTIMALLY AIDED' FOR EXPERIENCED ADULT HEARING USERS WITH SEVERE-TO-PROFOUND DEAFNESS.

Written and agreed by BAA SQC and BSA ARIG, July 2019.

**Cochlear implants should always be considered as a priority for adults with severe-to-profound deafness; however it is important to ensure adults are optimally aided so they can get the best possible outcomes with their hearing aids.**

Main points to ensure adults are optimally aided:

1. **Real Ear Measures (REMs)** used to confirm the electroacoustic properties of the hearing aid and ear-mold in the ear i.e. frequency response, output and compression. **NAL-NL2 target may be a start-point** when prescribing output but previously used settings/prescriptions are equally as important (dependent on the benefit gained from the old settings).
2. Amplitude **compression ratios kept low** (<2), to minimise the alteration of speech cues.
3. **Volume controls offered**, especially to experienced users of VCs (consider a remote control if dexterity problems).
4. Comfortable, deep and well-fitted ear moulds that form an acoustic seal such that **feedback does not occur** (and feedback managers that limit gain are not required).
5. **Telecoil loop** and potential for **wireless connectivity** (directly or via streamer), so loop systems and assistive listening devices can be used in challenging listening situations i.e. background noise and/or listening over a distance.
6. Hearing aid settings can be optimized and fine-tuned based on subjective-feedback and speech tests. **Subjective-feedback should always be the gold standard as speech tests do not represent real-world listening situations.** Users may require a period of acclimatisation to accurately report on sound-quality and provide subjective feedback.

You may wish to consider additional hearing aid features that could provide benefit (although effects will be small):

7. **Directionality, noise-reduction, and music programme** selected and adjusted based on patient preference and listening needs.

8. **Frequency-lowering selected, verified and validated to ensure;** a) aided audibility is improved, b) speech quality is not impaired, and c) the patient obtains a measurable benefit.

Other points to consider:

9. Does the user have realistic expectations about what amplification can deliver for their level of hearing? Make sure this is explored at (re)assessment before proceeding with hearing aid fitting when goals and management plan are agreed.
10. Is the user able to consistently use the hearing aid(s) confidently? Or would they benefit from further advice, practise or support?
11. Hearing aids form only a small part of aural rehabilitation. It is vital that adults are given all the support possible to maximise their ability to manage their hearing loss. This may include support and signposting for: Implantable devices, Assistive Listening Devices, lip-reading classes, Access to Work, communication training for family/friends/carers, Hearing dogs, Deaf-awareness training/support in the workplace.

### **Bibliography:**

American Academy of Audiology: <https://www.audiology.org/publications-resources/document-library/adult-rehabilitation-hearing-aids>

American Speech Language Hearing Association: <https://www.asha.org/practice-portal/professional-issues/hearing-aids-for-adults/>

British Society of Audiology: <https://www.thebsa.org.uk/wp-content/uploads/2018/05/REMS-2018.pdf>

Hearing Aids for music: <https://musicandhearingaids.org/resources/>)

Simpson, A., Bond, A., Loeliger, M., Clarke, S. (2018) Speech intelligibility benefits of frequency-lowering algorithms in adult hearing aid users: a systematic review and meta-analysis, International Journal of Audiology, 57:4, 249-261, DOI: [10.1080/14992027.2017.1375163](https://doi.org/10.1080/14992027.2017.1375163).