

Is it worth it? Measuring benefit in noise

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Context

Time and money are spent on providing and managing radio aids. Is this a good use of resources? How do we know?

Noise and distance present two of the greatest challenges for deaf children and young people. For this we advocate a radio aid system. Radio aids are expensive and management can be time consuming. For some users there may also be challenges to meet. Evidence is therefore needed to encourage and justify their use and to assess how new technology should be introduced for optimal benefit.



Why use Speech in Noise (SiN) measures?

Self perception is often an unreliable indicator of performance.

We therefore need some objective evidence for using a radio aid.

We need to know the optimal Signal to Noise Ratio (SNR) for the student.

We need to share evidence with others.

What SiN tools are available?

Ewing Foundation
for deaf children
SiN Toolkit



Soundbyte
Solutions
Parrotplus 2



How do we use the tools?

- 1 Check personal amplification and radio aids
- 2 Select appropriate test for user
- 3 Use test conditions to replicate the experience of the user in class and social contexts (ie SNR)
- 4 Test in quiet
- 5 Test in noise
- 6 Add radio aid and test in noise
- 7 Record the data
- 8 Take appropriate action

Remember:

- follow accepted test procedures
- use other evaluation measures such as observation, questionnaires and pupil voice as part of a battery of tests.
- compare like with like
- test and retest to ensure validity



Outcomes – establishing evidence-based practice

Informs:

- a. the student and helps them understand their hearing and benefit of wearing a radio system
- b. the student of the need for sustained listening and shows their lip-reading reliance
- c. a reluctant wearer of radio aid benefit
- d. the manager of radio aid benefit and SNR needed to achieve optimum score
- e. the manager of the need for equipment review, update or renewal

Justifies:

- f. policy criteria for provision of a radio system
- g. expenditure on the system
- h. the expense of time in set up, management and training

Raises awareness:

- i. of needs of deaf student to mainstream staff
- j. of impact of noise in other contexts (eg home/car/clubs)
- k. to improve management of classroom noise
- l. to inform about room acoustics

References

Self assessment:
Rowland JP et al (1985). *Comparison of speech recognition in noise and subjective communication assessment* Ear and Hearing 6: 291-296

Listening in noise:
Anderson et al (2005). *Benefit of S/N enhancing devices to speech perception of children listening in a typical classroom with hearing aids or a cochlear implant* Journal of Educational Audiology 12

Mulla I. *Signal to noise ratio – what's age got to do with it?* BATOD Magazine September 2014 p18

Speech perception tests:
Whyte S. *An insight into speech and hearing* BATOD Magazine September 2014 p24

Radio aids:
Quality Standards for the Use of Personal Radio Aids: promoting easier listening for deaf children. National Deaf Children's Society 2017. Created in collaboration with the UK Children's FM Working Group.

Share practice

If you would like to share your experiences with the UK Children's FM Working Group, please email:

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Websites


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