

**Hearing Industry Research Consortium (IRC):
Lay Person Description of Project**

Name (Primary Investigator): Dr Piers Dawes

Study Investigators: Professor Kevin Munro, Dr Kathryn Hopkins

Affiliation(s): Manchester Centre for Audiology and Deafness (ManCAD), University of Manchester

Project Title: Tuning of auditory attention and acclimatization: Helping people get the most benefit from hearing aids

Primary Project Goal: The aim of this study was to measure how new hearing aid users learn to 'tune out' and ignore distracting background noise that is amplified by hearing aids. If this process can be better understood, we may be able to help people with hearing loss obtain more benefit from hearing aids and have better listening performance in background noise.

Knowledge Translation: The experience of 'annoying sounds' is a frequent complaint among new hearing aid users, and failure to adjust to hearing aids results in reduced benefit or non-use. Failure to tune out background sounds may also result in greater difficulty hearing in background noise. This research could help people adjust to hearing aids and get more benefit from them by i) informing how hearing aid settings should be set for first-time users to facilitate getting used to background noise, and whether different people need different settings, ii) understanding the process and the time course of adjusting to hearing aids so that audiologists can give appropriate advice and support for their patients, iii) identify strategies to help people adjust to a new hearing aid (e.g. gradual increases in use, or use in gradually more challenging environments).

Methods: New adult hearing aid users (n=35) did a test of speech recognition in background noise and a test of auditory distraction by background sound while using hearing aids on the day of first fitting and then 1, 7, 14 and 30 days after fitting. At day 30, everyone completed ratings about the intrusiveness of background noise. The amount of hearing aid use was recorded and general cognitive ability was measured. A control group of experienced hearing aid users (n=20) did the tests over the same time frame.

Results: At Day 30, there was no significant improvement in speech recognition among new hearing aid users versus experienced users as a whole. But levels of hearing loss and hearing aid use varied widely among new users. New hearing aid users with moderate hearing loss who wore their hearing aids consistently did have improved speech recognition. Improvements in speech recognition were greater with more consistent hearing aid use. Improvements in speech recognition were accompanied by reports of background sounds being less intrusive, consistent with the process of getting used to hearing aids involving learning to ignore newly audible unwanted background sounds. Consistent hearing aid use may help people get used to hearing aids and promote better speech recognition with hearing aids.

Background information about your research group: The Centre for Audiology and Deafness (ManCAD; <http://research.bmh.manchester.ac.uk/mancad>) is the premier center for translational research and education in Audiology and Deaf Education in Europe. ManCAD currently hosts a UK national Biomedical Research Centre in Hearing (£4.5 million), Medical Research Council program grant (£1.2 million) and a European Commission Horizon 2020 study (€6.5 million) as well as a dedicated hearing device trials center.

References

Dawes, P., & Munro, K. (2017). Auditory attention and acclimatization to hearing aids. *Ear & Hearing*, 38(2), 174-183.

Contact information

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