

see it - HEAR IT - wear it!

Who are we?

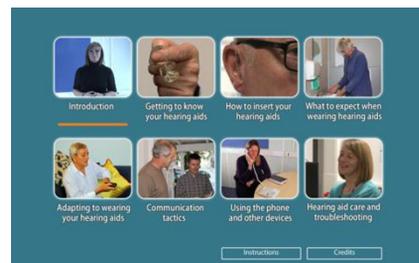
The research is led by Mel Ferguson and key collaborator Prof Heather Wharrad.

Mel Ferguson is Research Lead for the Habilitation for Hearing Loss team at the NIHR Nottingham Hearing Biomedical Research Unit (NHBRU). She is a Consultant Clinical Scientist (Audiology) and is the unusual position of being both clinically qualified and research active. Mel has over 25 years experience in hearing research, leading and managing large multi-centre research studies, research teams and projects, and professional audiology groups. She has an excellent clinical and research network throughout the UK, which is developing internationally. Mel is the principal investigator on the HEAR-IT (Hearing: Evaluation of Auditory Rehabilitation using Interactive Tutorials) study that is funded by an NIHR Research for Patient Benefit award (£235,269).

Heather Wharrad is chair and academic lead for the Health e-Learning & Media (HELM) group and the research group in Education & Health Informatics based in the Faculty of Medicine & Health Sciences at the University of Nottingham. Heather has over 30 years of experience in national and international research into the health sciences and education more recently focusing on the effective design and use of new technologies. Amongst the many grants Heather has secured was the prestigious £3.3 million award for a Centre of Excellence in Teaching & Learning in RLOs (reusable learning objects). This expertise and Heather's interest in audiology from previous work in hearing research has led to this successful partnership on the HEAR IT study.

The HEAR-IT research team is a multi- and inter-disciplinary team that bring together a unique combination of expertise and skills involving translational hearing research (NIHR NHBRU), elearning research development (University of Nottingham HELM), clinical audiology (Nottingham Audiology Services), and importantly, public and patient involvement (hearing aid users). This talented and enthusiastic team has an excellent working relationship and was recently awarded the British Academy of Audiology Team of the Year 2012.

Nottingham Hearing Biomedical Research Unit University of Nottingham



Intervention advantages

- 1 the concept is simple
- 2 it is based on the patient voice
- 3 the benefits are readily recognised amongst users and audiologists
- 4 users like it
- 5 demands on audiologists time are low
- 6 the intervention can be accessible to many
- 7 manufacturing and purchasing (unit) costs will be low
- 8 Action on Hearing Loss (AoHL) has endorsed the product (pending)
- 9 It is supported by a robust, scientifically valid evidence (pending)

Contact us

If you have any questions please contact:

Melanie Ferguson

0115 8232619

melanie.ferguson@nottingham.ac.uk

Heather Wharrad

0115 8230909

heather.wharrad@nottingham.ac.uk

1 Why is this research important?

One in six of the population, around 10 million people, has a significant hearing loss, yet only 3m wear hearing aids. The NHS in England fits hearing aids to ~350,000 new users each year, yet despite rapid technological advances in the hearing aid industry, non-use of hearing aids remains high at ~20%, with a further ~30% wearing their hearing aids sub-optimally. Whilst non-use of hearing aids results in an annual financial cost to the NHS of around £30m in wasted limited NHS resource, there is a substantial cost to the noncompliant user who will have continued interpersonal communication difficulties in everyday life. The impact of this leads to social withdrawal and isolation, increased risk of dementia and reduced quality of life. It is clear that hearing aids alone are not the only option.

Learning to listen with hearing aids is not immediate like restoring vision with glasses, and typically only half the information to ensure successful hearing aid use is remembered six weeks later. National guidelines suggest clear, well-written and accessible information should be provided to hearing aid users to supplement the information provided by the audiologist. Usability testing of hearing aid manufacturer instruction booklets showed information was difficult to find, understand and follow yet less than half of audiology departments offer additional written information to support new users. All of which can lead to noncompliant users.

2 What we have done so far?

We spent over 12 months scoping and gathering material for the interactive tutorials (or reusable learning objects, RLOs) and used a validated development methodology in order to ensure the product was fit for purpose, evidence based and of high quality. A key difference between our product and others is in the user involvement at all stages of the process and the pedagogical (i.e. educational) input in the design built on years of experience of using these approaches. We have produced seven self-contained RLOs covering topics identified by users and audiologists as the major reasons for non-use of hearing aids. The RLOs use video clips, animation and photographs as well as a range of tried and tested pedagogical techniques for engaging learners including using every day analogies and simple illustrations to explain complex ideas; use of testimonials to demonstrate interpersonal issues and exercises to self-test understanding.



Hearing aid users creating storyboards



Workshop with audiologists



Filming the interactive video tutorials

3 What does the research show?

The randomised controlled trial to evaluate the benefits of the RLOs in 170 first-time hearing aid users will be completed in April 2013. Preliminary data from 48 hearing aid users, with half receiving the RLOs, has identified key positive outcomes. Those receiving RLOs:

- retained significantly more information (up to 40%)
- showed significantly increased learning on HAs and communication
- used their HAs on average two hours/day more than the controls
- uptake of RLOs was high; 77% agreed to participate in the study
- compliance was high; 92% watched all RLOs at least once
- self-management was evident; each RLO was watched between 2-3 times (maximum=7 times)
- RLOs were useful; mean rating was 9.0, (1=not useful, 10=extremely useful).
- users were very positive.

Taken together, these data suggest hearing aid users gain substantial benefit from the RLOs.

4 What are our future research plans?

The HEAR IT team has a programme of research and a strategy in place (including targeted funding support) to build on the DVD/RLO study. New projects include:

- RLOs for communication partners (Funded by the British Society of Audiology)
- evaluation of DVD/RLO with US partners (Grant submitted to Veterans Association, USA)
- interactive booklets and tablet technologies for hearing aid users 'Increasing effective hearing aid and communication benefit: flexible support and learning for first-time hearing aid users' (Grant submitted to NIHR Research for Patient Benefit programme £316,070, January 2013)
- deaf awareness for Health care assistants 'Can Healthcare Assistant Training improve the relational care of older people?: A development and feasibility study of a complex intervention' (Grant submitted to NIHR HS&DR programme)

Further studies planned:

- addressing patient expectations prior to hearing aid fitting
- educational needs for other user groups (e.g. existing hearing aid users, cochlear implants, teenage transition from child to adult services)
- training health and social care professionals (e.g. nurses, GPs, residential care home staff, teachers)
- follow-on information from screening tests (e.g. AoHL Hear check to address the informational needs of the millions of people with hearing loss who do not access audiology services)
- late phase 2 clinical trials – multicentre studies to evaluate clinical effectiveness of the suite of learning resources that will include DVD for TV and PC, elearning through the internet and mobile technologies (e.g. smartphones and tablet PCs), and interactive booklets for those who cannot access technology (e.g. NIHR HTA or SDO or programme grant).

5 What are our plans to implement the RLOs into the NHS and beyond?

The ultimate goal of this research is to maximise the opportunities for new and existing hearing aid users to access and benefit from our RLOs. Implementing new interventions into the NHS is notoriously challenging. However, this intervention has several advantages (see front page). To maximise accessibility and NHS penetration, the research team see significant advantages in working in partnership with the commercial sector which has the marketing and distribution expertise to facilitate this. There is also international interest in this research, with over 25% of hits on the sample clips on the NHBRU website coming from outside the UK. If commercial partnership is not possible, we will pursue our own start-up company.

The product has been designed to be maximally generic in terms of specific hearing aid models. Some minimal work will be needed before the DVD is market ready. Briefly, across all but one of the RLOs there is only 0.5% of content that is not generic for a UK market and only 1.8% that is not generic for an international audience (i.e. a hearing aid is shown but there is requirement for this to be a specific model). The Getting to Know Your Hearing Aid RLO is 51% generic for a UK market and 41% for an international market.

A secondary goal from a commercial partnership is to raise funds from the existing product to fund further research.

Try our videos



<http://www.hearing.nihr.ac.uk/public/interactive-video-tutorials-for-hearing-aid-users-hear-it>

6 What do key audiology professionals and charities say?

“The availability of these [educational materials] in multiple formats to suit the needs of the individual with hearing loss would be a boon to audiology providers”

“[NHBRU] has an established track of informing the audiology community of its findings and actively supporting and promoting evidence-based change”

Adam Beckman, BAA President

“The outcomes of your proposed project not only have the potential to improve quality of life for hearing aid users, but also reduce NHS wastage associated with non-use of hearing aids”

“A lack of post-fitting support is likely to be an important factor to the non-use of hearing aids...our experience suggests that this [research] would add value to the patient journey and in turn increase hearing aid use”

Dr Ralph Holme, Director of Biomedical Research, Action on Hearing Loss

"This is important research of a ground breaking approach to optimise the impact of hearing aids..... an extended exploration of this approach through a range of evolving communication technologies would exploit and build upon the good work completed to date'

John Day, Consultant Clinical Scientist (audiology), advisor to Welsh hearing service programmes

7 What the hearing aid users, their families, charities and professionals say...

"If I did not have the DVD I might have given up wearing my hearing aids."

"I think the DVD is a well thought out educational resource."

"My wife found this very informative"

"Good pace, accessible and empowering"

"I liked that I could press 'pause' to practice inserting aid"

"I found this reassuring and supportive"

"Rather obvious and simplistic so a bit boring"

"If I had walked out of my hearing aid appointment without this DVD, I would have given up wearing my hearing aids by now. The advice on what to expect and how to adapt to the hearing aids has been invaluable."

"Everyone should have access to the video tutorials in some form or another. My friend, who was fitted with hearing aids 10 days after me, frequently contacted me for advice, asking 'What does the video say?'"

HEAR IT participants (hearing aid users)

"This is a fabulous resource for people receiving their hearing aids for the first time. It explains the mechanics of hearing and how hearing aids work, supports people through the difficulties of adjustment, lets the viewer know that they are not alone, points to other resources and, most of all, is reassuring to the patient and their partners, family and friends."

Anne Darby, hearing aid user and HEAR-IT PPI panel member

"There was a definite need for this DVD as evidence showed many people wearing hearing aids would benefit from having a clear and simple to understand resource to support them using their hearing aids more effectively"

"Technology is sometimes a word which frightens people, let's look at making this more accessible to everyone wearing hearing aids and how this may benefit their hearing in a clear and easy to understand guide"

Tina Wales, hearing aid user and HEAR-IT PPI panel member

"By developing the project to include both basic (books and pamphlets) and modern means of accessing information on demand, (by computer, DVD, RSS feeds, apps on mobiles, tablets internet, etc.) the project will be 'future proofed'."

"I see no reason why when the project is successful with older users, it cannot be adapted and used for younger people, maybe even becoming the standard way to introduce patients to Hearing (and maybe other) services"

Peter Butler, hearing aid user and project PPI panel member

"Over Christmas my dad's hearing aid stopped working and he was unable to hear us or the TV. He was left feeling isolated as he was struggling with communication. We looked at the DVD and found the section on maintenance. This helped us to fix the problem by washing out the tubing and drying it and putting the hearing aid back together...The DVD helped us at a time when getting help at the audiologist would have been very difficult."

Sarah Wadsworth, family member

"The interactive videos are a great tool for first time hearing aid users, many of whom struggle to retain all of the vital information provided by the audiologist following a fitting appointment...They are also beneficial for family members, friends and care givers to engage more and further support the user with their hearing aids."

"The videos are broken down into short tutorials that can be followed with ease, reinforcing the information provided by the audiologist and allowing the hearing aid user to put everything into practice in their own time."

"Action on Hearing Loss supports the development of the interactive videos by the Nottingham Hearing Biomedical Research Unit and is currently looking at future endorsement."

Gemma Twitchen, Audiologist, Action on Hearing Loss

"I thought the DVD was fantastic, very clear and concise information given...ideal for me to give out to hearing aids users, their families, care home staff, care workers and support staff as I think it would be a great tool to include as part of a training package."

"Excellent use of video clips, short films, sound effects, illustrations, real life stories, cartoons etc. as it breaks the DVD up and keeps the users interested. This will also ensure that the different learning abilities are catered for. "

"Very useful tips for inserting the ear mould and the film showed it perfectly."

"I really liked the 'DON'T give up motto' as I find this is one of the main issues I come across"

Laura Ainsworth, Action on Hearing Loss and project PPI panel member

"It's a great opportunity to be able to work with NBRUH and really good to be involved with research that will directly improve patient care."

Joanne Rowe, Specialist Audiologist

"...up until now information surrounding hearing aid management has relied on either face to face information giving or written text. Informative, constructive and easily accessible, I cannot wait for the product to be available to all patients issued with an NHS hearing aid."

Karen Goodrum-Clarke, HEAR-IT Audiologist