

# Hearing aids alone are not the only option: improving hearing-related knowledge

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# Delivery and retention of information National Institute for Health Research



*“You get a lot of information ...by the time you get home, you’ve forgotten most of it.”*

51% found difficulties using aid at first

*(AoHL Hear Me Out, 2011)*

Retention of information in first-time HA users after 6 weeks

Overall = 49.6%

Practical = 62.9%

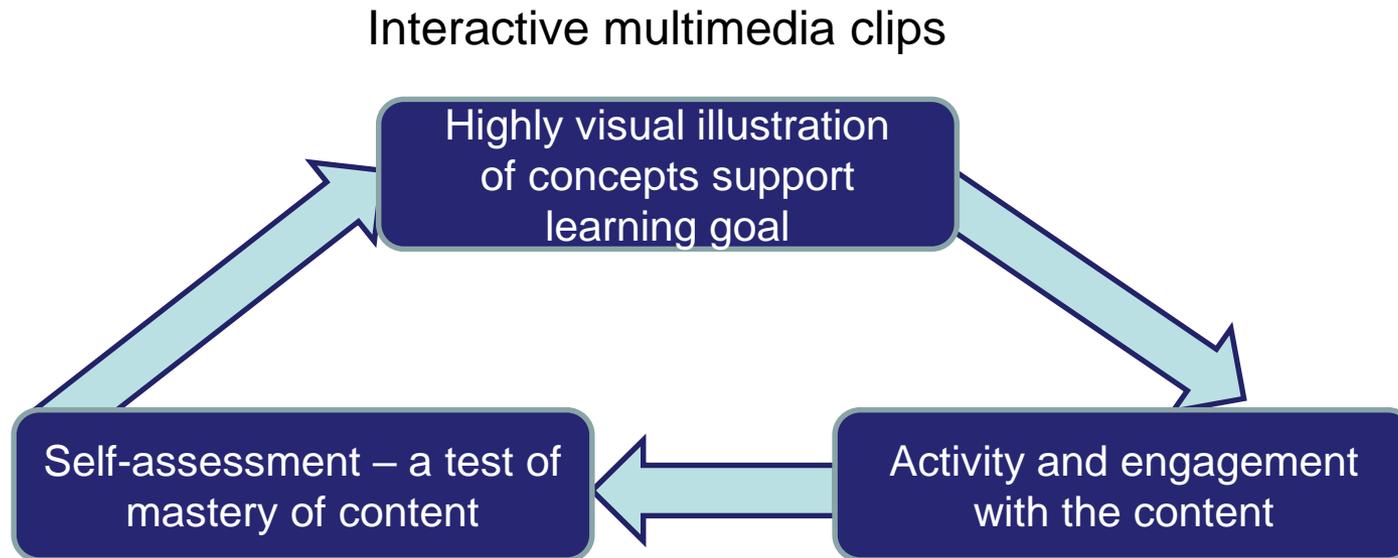
Psychosocial = 34.3%

*(El-Molla, Smith, Henshaw, Ferguson, BAA, 2012)*

# Re-usable learning objects (RLOs)

(or interactive video tutorials to you and me)

Commonly used in elearning environments



- Participatory approach - high quality materials aligned to the user's needs
- Improve motivation and compliance with health treatments



# Interactive Quiz

2 of 2

Select the statement: that is the **correct** action if you experience pain or discomfort from your earmould

a



Continue to wear the hearing aid despite the pain.

b



Contact Audiology- there may be a problem with the fitting of the earmould.

c



Give up wearing the hearing aid.

# Interactive Quiz

2



The correct answer is **b**

The earmould may feel strange to begin with, however there should be no pain or discomfort.

The audiologist may need to re-shape the earmould or re-instruct you.

# Increasing hearing-related knowledge for first-time hearing aid users



National Institute for Health Research

The grid contains 10 video thumbnails arranged in two rows of five. Below each thumbnail is a label. The first row labels are: Introduction, Get to know, Insertion, Expectations, and Acclimatisation. The second row labels are: Communication tactics, Phone & ALDs, HA care, Troubleshooting, and Retubing. Below the 'HA care' and 'Troubleshooting' labels are two boxes labeled 'Instructions' and 'Testimonials' respectively, with lines connecting them to the 'HA care' and 'Troubleshooting' labels.



NIHR-funded Research for Patient Benefit



# RLO access and compliance

## **All could access the RLOs – but some barriers**

n=675 (49.5% fit criteria)

\*\*No access to DVD, PC or internet = 32%

Poor understanding of English = 9%

Inability to use RLOs due to cognitive decline = 15%

**These barriers have implications for implementation into clinical practice.**

## **RLO uptake and compliance**

Expressed interest in RLOs and participating in study = 78%

Compliance was high

- 94% watched all the RLOs at least once

**There is high interest and compliance with the RLO concept.**



# RLO re-use suggests self-management

RLO title	% watched 2+	Times watched (max)
Acclimatisation	56	5
Getting to know HA	56	5
Insertion of HA	53	7
Troubleshooting	52	5
Expectations	48	5
Phones and ALDs	45	4
Communication	39	5

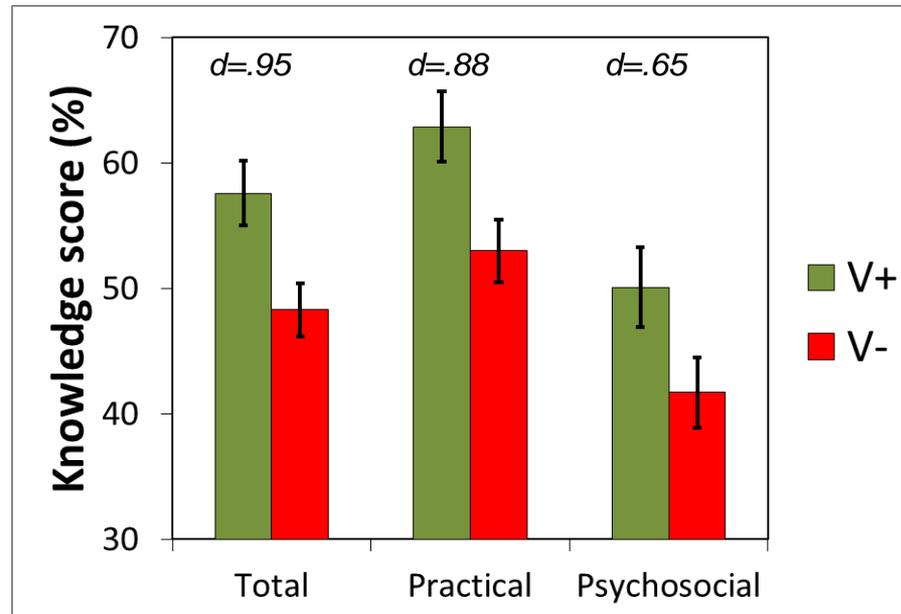
2+ times mean = 49.9% (39-56)

3+ times mean = 20.2% (19-38)



# V+ group: better knowledge of HAs and communication

20 item questionnaire; free recall 6 weeks post-fitting



Highly significant effect of video group

- total ( $p < .001$ )
- practical ( $p < .001$ )
- psychosocial ( $p < .001$ )

Generally large effect sizes

E.S. Cohen's *d*  
 $\geq 0.8$  large  
 $\geq 0.5$  moderate  
 $\geq 0.2$  small

Total n=167

V+ n=79 (47.3%)

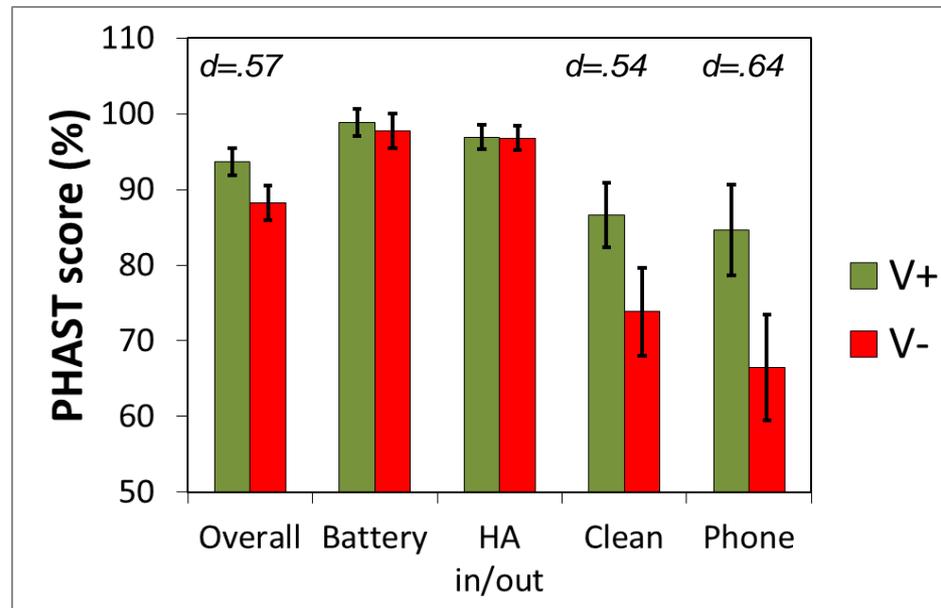
V- n=88 (52.9%)

Error bars = mean +/- 95% CI



# V+ group: better practical HA maintenance skills

Practical Hearing Aid Skill Tasks (PHAST); 18 items



Highly significant effect of video group overall ( $p < .001$ )

- but only for HA/EM clean and phone use ( $p < .001$ ), with moderate effect sizes
- Super users?

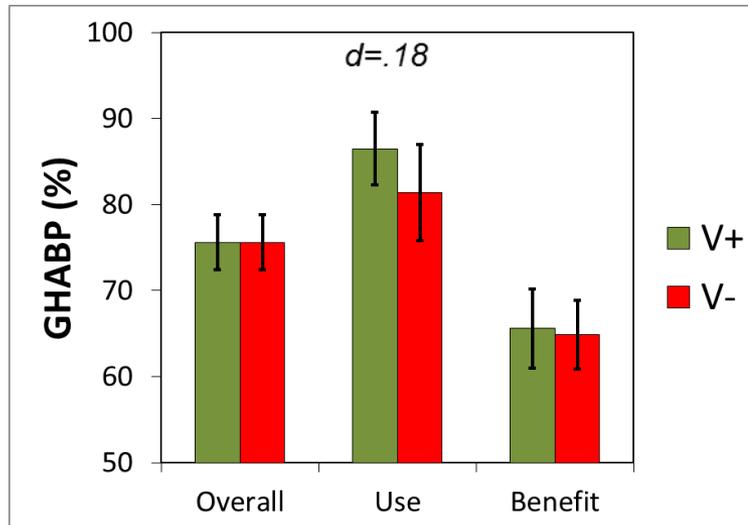
E.S. Cohen's  $d$   
 $\geq 0.8$  large  
 $\geq 0.5$  moderate  
 $\geq 0.2$  small

Error bars = mean  $\pm$  95% CI



# V+ group: improvements in use

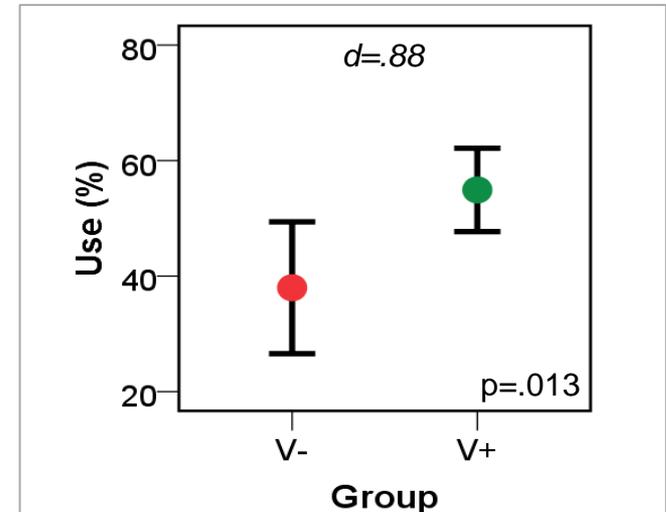
Glasgow Hearing Aid Benefit Profile



No significant difference between V+ and V-

But: use is greater in challenging listening situations ( $p < .05$ )

Suboptimal users (use <70%)



n=38

E.S. Cohen's *d*  
 $\geq 0.8$  large  
 $\geq 0.5$  moderate  
 $\geq 0.2$  small

Error bars = mean +/- 95% CI



# RLOs were rated as highly useful

- Quantitative and qualitative methods

RLO title	Useful (1-10)
Troubleshooting	9.2
Acclimatisation	9.1
Insertion of HA	9.0
Expectations	9.0
Getting to know HA	8.9
Communication	8.8
Phones and ALDs	8.5



Top 5 words to describe RLOs



# Positive feedback on RLOs

- 5 point scale (strongly agree to strongly disagree)
  - Enjoyed watching the RLOs
  - If I had a problem I would refer back to RLOs
  - Quiz was valuable to show me what I'd learned
  - Prefer RLOs to written information
  - Gave me confidence to use HAs and communicate
- 78% would recommend the RLOs to other people



93%

3%

88%

6%

88%

3%

82%

7%

80%

3%

# Evaluation: Clinically registered RCT (N=203)

## Take-up and adherence

*Take-up = 78%*  
*94.3% watched all RLOs*

## Self-management

*2+ times = 49.9%*  
*Re-use suggested self-management*

## HA knowledge & skills

*Better knowledge on HAs and communication & HA handling skills*

## HA use

*Greater use (GHABP) suboptimal users*

## Valued by users

*Rated RLOs as highly useful (9/10)*  
*Improved confidence*  
*Preferable to written info*

## Health economics

*RLOs were a very effective and cheap healthcare intervention*

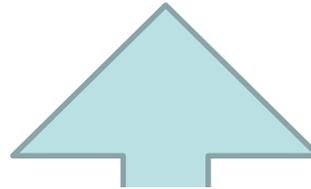
*(Ferguson et al, Am J Aud 2015; Ear Hear, 2016)*

# Current developments: individualisation

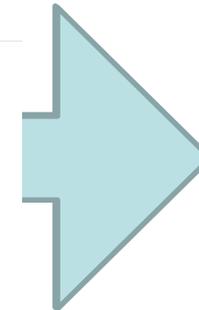
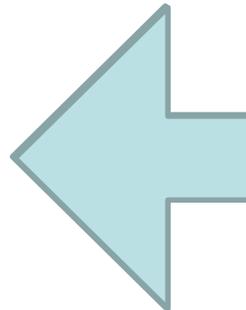
- Tailored
- Bite-sized
- Interactivity
- Self-evaluation



**Patients**

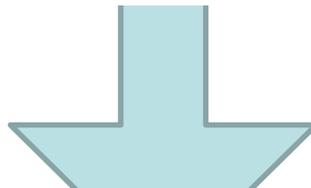


**C2Hear**  
Online Getting more from your hearing just got easy



**Communication  
Partners**

**Public**



(Ferguson et al, *Hear J*, 2017; *EMT & Audiological HCP*)

NIHR-funded Research  
for Patient Benefit

# Current developments: greatest impact for joint working



## Controlling the environment: restaurant game



## Think Aloud techniques

- CPs - would change their behaviour to help improve communication based on their learning from the mRLO.

“That’s what we shall look for [a quiet restaurant table]” (CP)

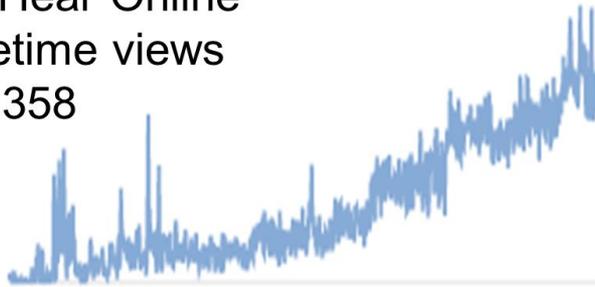
- mRLO prompted novel discussions about challenging communication situations

“We are both on the same wavelength, we can look for it now” (PHL)

# Summary of ehealth developments

## Dissemination

C2Hear Online  
Lifetime views  
74,358



United Kingdom	39%
United States	32%
Canada	6%
India	4%
Australia	3%

US version now developed

November 2015



Freely available online



[www.youtube.com/C2HearOnline](http://www.youtube.com/C2HearOnline)

2016/17



mRLOs for communication partners

2017/18

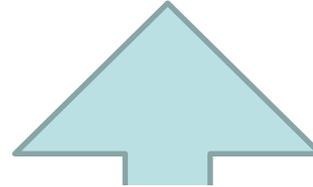


mRLOs tailored for hearing aid users

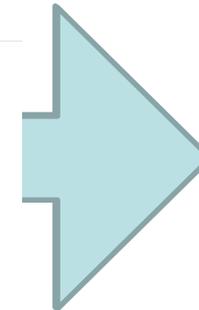
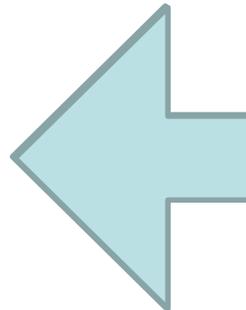
# Vision for future: to develop a self-management system

- Knowledge
- Tailored
- Interactive
- Self-evaluation
- Peer support

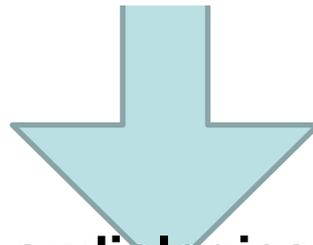
**Patients**



**C2Hear**  
Online Getting more from your hearing just got easy

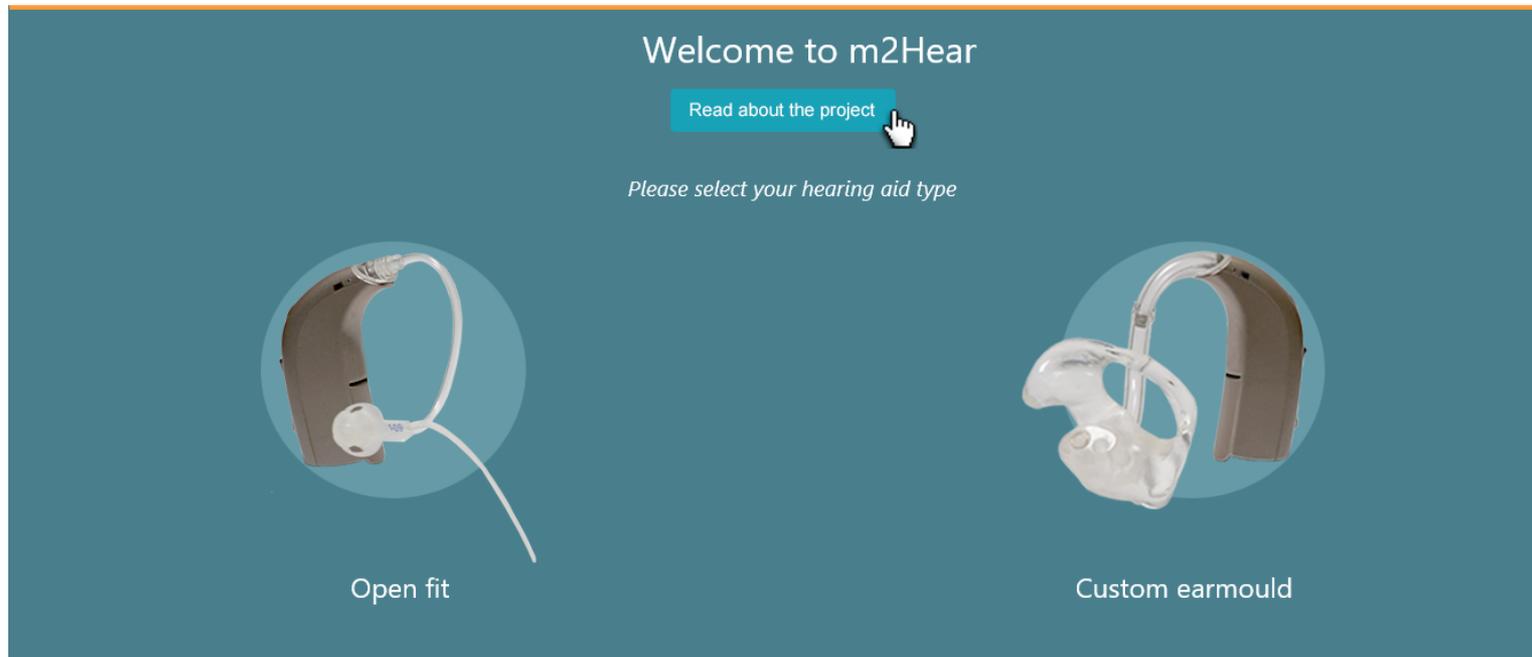


**Public**



**Non-audiological HCP**

# Welcome page



Welcome to m2Hear

[Read about the project](#)

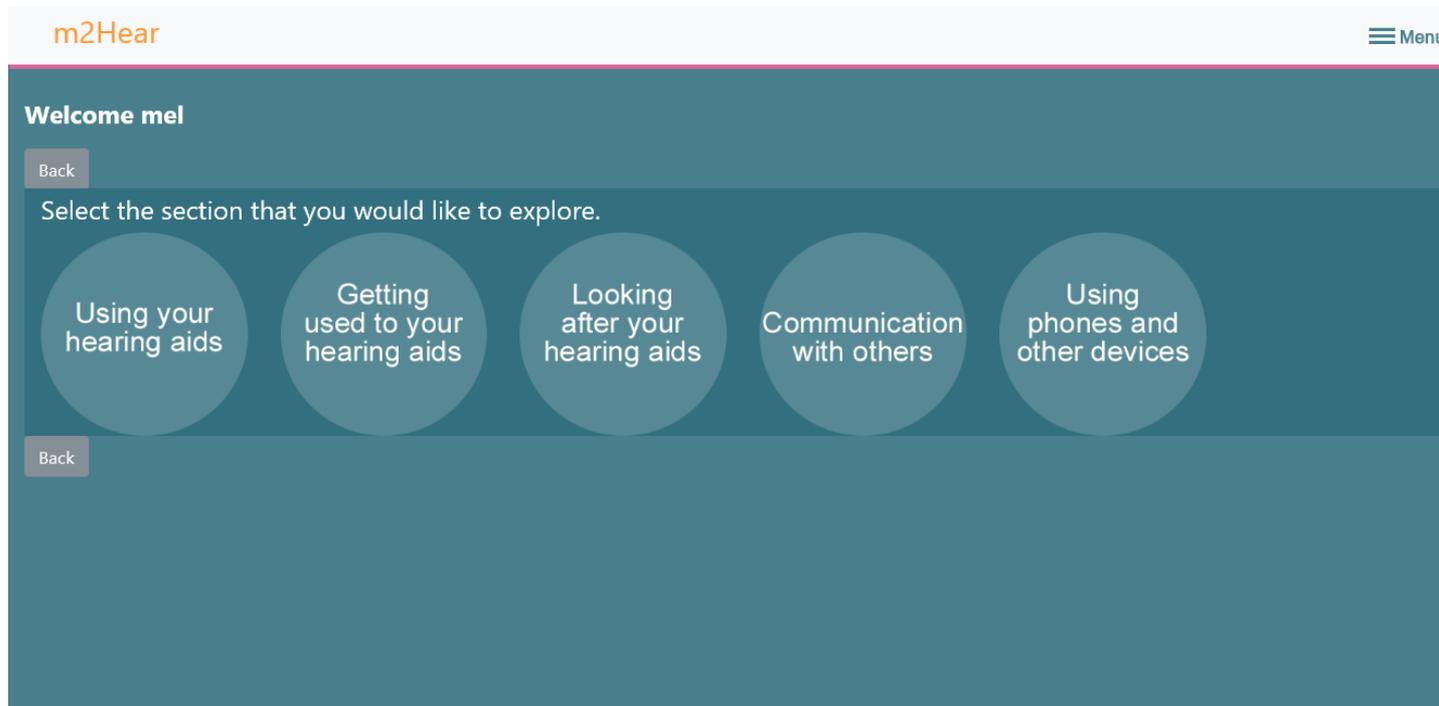
Please select your hearing aid type

Open fit

Custom earmould

The image shows a digital interface for selecting a hearing aid type. It features a teal background with a white text area at the top. Below the text, there are two circular images of hearing aids. The first is labeled 'Open fit' and the second is labeled 'Custom earmould'. A button with a hand cursor is positioned over the 'Read about the project' link.

# Initial options – based on patient journey



mel - You have selected information on **How to use your hearing aids.**

Back

**Getting to know your hearing aids**



How do I know which hearing aid is for my left/right ear?

Try the activity?



How do I turn my hearing aids on and off?



How do I change programmes on my hearing aids?

Try the activity?



How do I change the volume on my hearing aids?

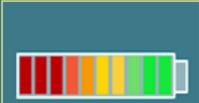


How do I keep my hearing aids safe?

**Hearing aid batteries**



How do I change my hearing aid battery?



When should I change my hearing aid battery?

# Activity: labelling a hearing aid National Institute for Health Research

## Labelling activity

Drag the matching label into the box for each arrow?



### Battery compartment and on/off switch

This is the battery compartment, which also acts as the on/off switch.

To switch on the hearing aid, close the battery drawer so it is firmly shut. The hearing aid will switch on within 15 seconds.

To switch off the hearing aid, open the battery compartment ajar to disconnect the battery. It is important you do this whenever you are not wearing your hearing aid, otherwise the battery will go 'flat' very quickly.

# Activity: focus on when it is important to hear well

What tips can help me improve taking part in conversations?

## Conversation activity

Activity: List up to three types of conversation where it is important for you and other people to hear as well as possible.

- 1:
- 2:
- 3:

Think of how you can communicate better in these conversations in future.  
Discuss with those who you communicate with to see how you can work together to improve conversation.

Click on the options below to see what other people have said:

### Having everyday conversations



"I was having problems, not picking everything up and missing what others were telling me. I kept saying, 'Pardon? Could you tell me what that was again?'"

Having a conversation with my partner/spouse

Having a group conversation

# Thanks to Mild to moderate hearing loss team



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