

Factors associated with successful self-fitting and the need for personalised support

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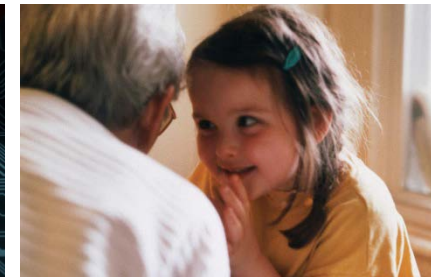
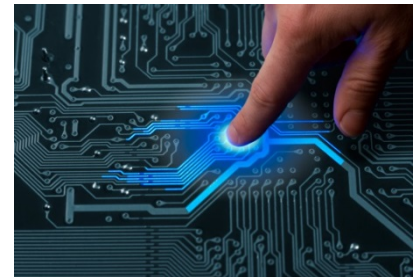
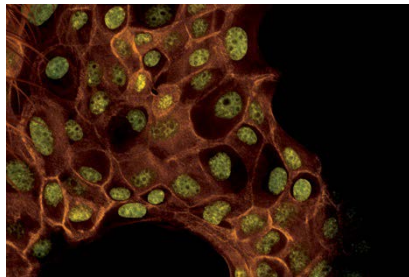
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creating sound value™

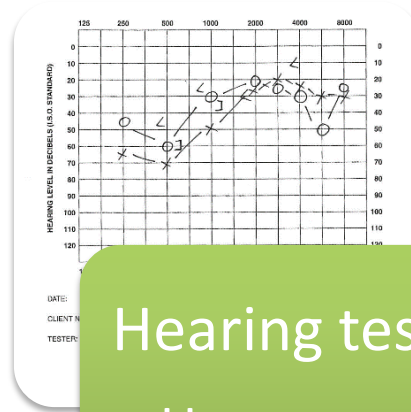


What is a self-fitting hearing aid?



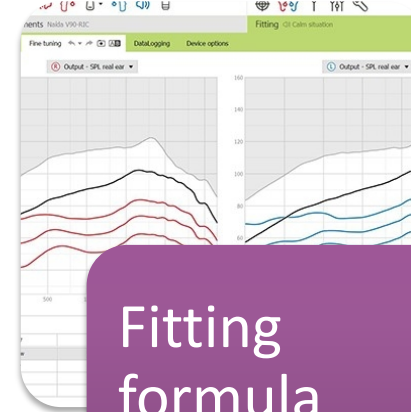
Physical fit

- Ear tip size
- Tube length



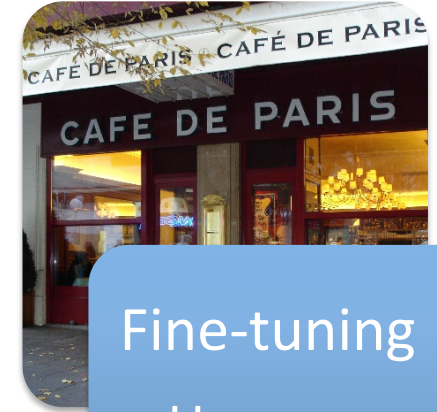
Hearing test

- User-directed
- *In situ*



Fitting formula

- Automatic
- First fit

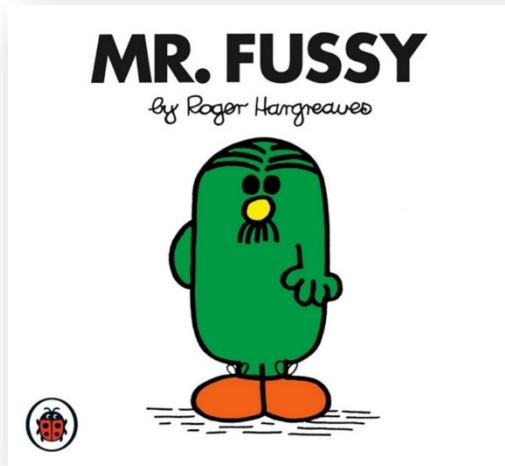


Fine-tuning

- User-directed
- Real world

Hearing aids that are set up for the user, by the user

Why offer self-fitting hearing aids?



User control

Ability to make permanent adjustments to the hearing aid settings in real time and in real-world listening environments



Accessibility

For rural and remotely located people in developed countries; for parts of the developing world that lack an audiological infrastructure



Holistic rehabilitation

Address clients' social and emotional needs; spend more time with high-need and complex clients

What we already know

Non-audiologic factors are associated with the successful performance of **individual self-fitting steps**

- ▶ e.g. better cognitive function predicts successful customisation of physical fit and performance of *in situ* audiometry (Convery et al. 2011, 2015)

Similar factors are important for successful use and management of **conventional hearing aids**

People are likely to **require support** with some aspect of the self-fitting task, but an **untrained layperson**, such as the spouse of a hearing aid user, is not a useful source of support (Convery et al. 2016)

What we don't know

What factors are associated with successful performance of **the entire self-fitting procedure** with a pair of **commercially available** self-fitting hearing aids?

Can a **trained non-clinician** provide self-fitting support?

What factors are associated with the **need for support**?

Test device 'Companion' RIC hearing aid from SoundWorld Solutions, which is self-fit in conjunction with a smartphone app



Participants 60 adults (51-85 years), half with previous hearing aid experience and half without



Assessments Cognitive function, hearing aid self-efficacy, health locus of control, problem-solving skills, demographic and audiometric information

Main task Self-fit the hearing aids using the available resources

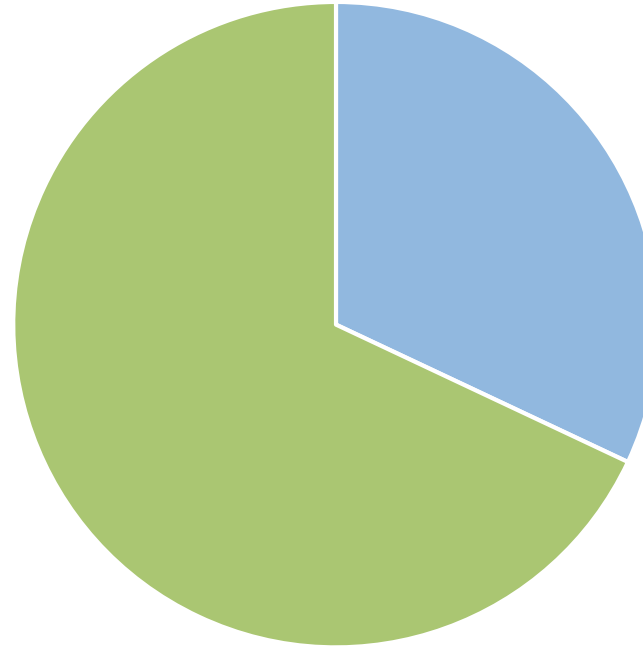
- ▶ PowerPoint instructions with captioned videos embedded in the slide deck
- ▶ A trained clinical assistant to provide personalised support on request

41 Successful

Accurately performed all steps in the self-fitting procedure independently

OR

Sought help from the clinical assistant in order to accurately perform all steps in the self-fitting procedure



N = 60

19 Unsuccessful

Made at least one unresolved error that prevented completion of the self-fitting procedure
(e.g. could not execute the app-based audiometry procedure)

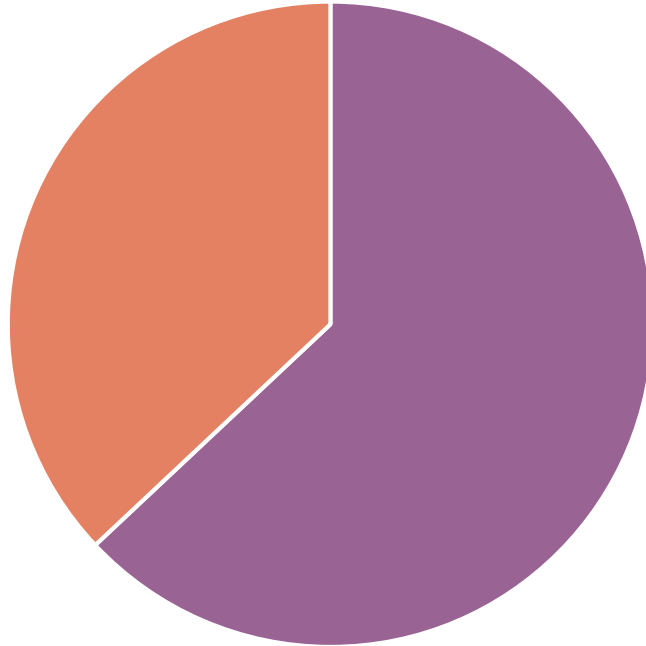
Successful self-fitters were more likely to have had previous conventional **hearing aid experience** and to **own a mobile device** (i.e. smartphone, tablet)

Logistic regression model correctly classified 80% of the participants
($\chi^2 = 28.90, p < 0.0001$)

Independent vs supported self-fitting

15 Independent

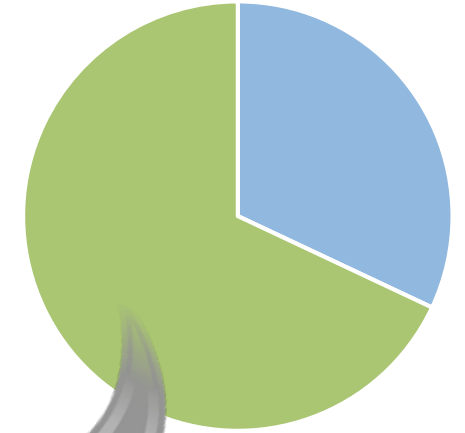
Accurately performed all steps in the self-fitting procedure independently



N = 41 successful self-fitters

26 Supported

Sought help from the clinical assistant in order to accurately perform all steps in the self-fitting procedure



Successful self-fitters who sought help from the clinical assistant were more likely to believe that **health care professionals** are the ones who are **ultimately responsible for their health and wellbeing**

Logistic regression model correctly classified 66% of the participants ($\chi^2 = 6.58, p = 0.04$)



Non-audiologic factors played a role in who was able to self-fit and the means by which they did so

The **majority of people required support** with self-fitting

Support can be successfully provided by an appropriately **trained non-clinician**

Implications for
service delivery

Go beyond the
audiogram:
assess relevant
non-audiologic
factors

Provide access
to trained
personnel for
on-demand
support

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