

# Eriksholm Guide to Better Hearing (EGBH)

## Development and testing of an online hearing rehabilitation program

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Previous studies (Thorén et al., 2014) show that online intervention is an effective tool in hearing rehabilitation. These findings initiated the EGBH project. The project is funded by the Oticon Foundation and is conducted by the eHealth group at Eriksholm Research Centre in collaboration with NIHR Nottingham Biomedical Research Centre.



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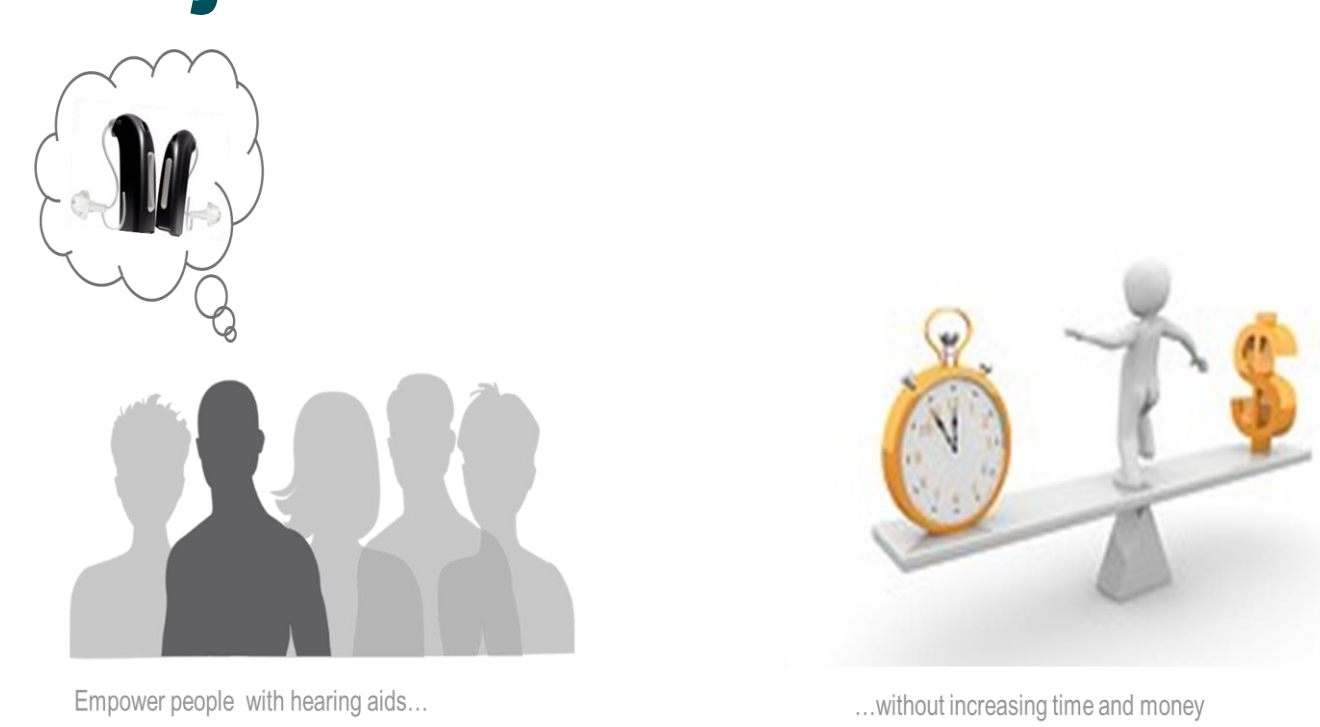
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### Background

Hearing aids ending up in the drawer, as well as the consequences of untreated hearing loss, are expensive for the individual and the society. The vision of the EGBH project is to develop a rehabilitation program that is cost-effective and includes additional rehabilitation components by using modern information technologies.

### Objective



By providing knowledge, experience and reflective tasks Eriksholm Guide to Better Hearing aims at helping people with hearing loss change hearing behavior and become more satisfied and empowered hearing aid users getting the most out of their hearing abilities and thereby sustain social life.

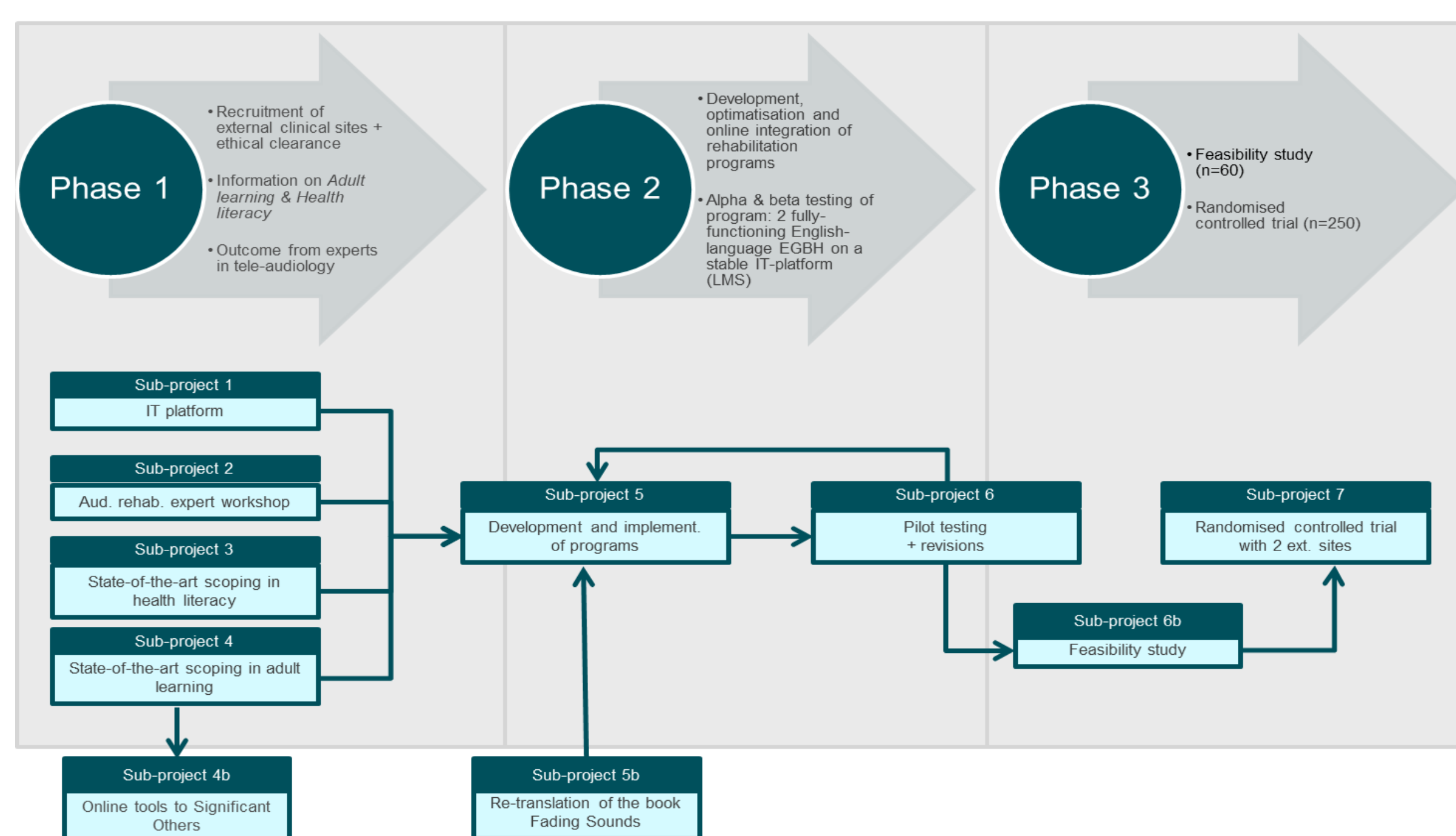
### Method

The framework of the EGBH project can be divided into three phases reflecting the focus on both development and testing of the program.

**Phase 1:** Preparations and obtaining knowledge about adult learning, health literacy and tele audiology.

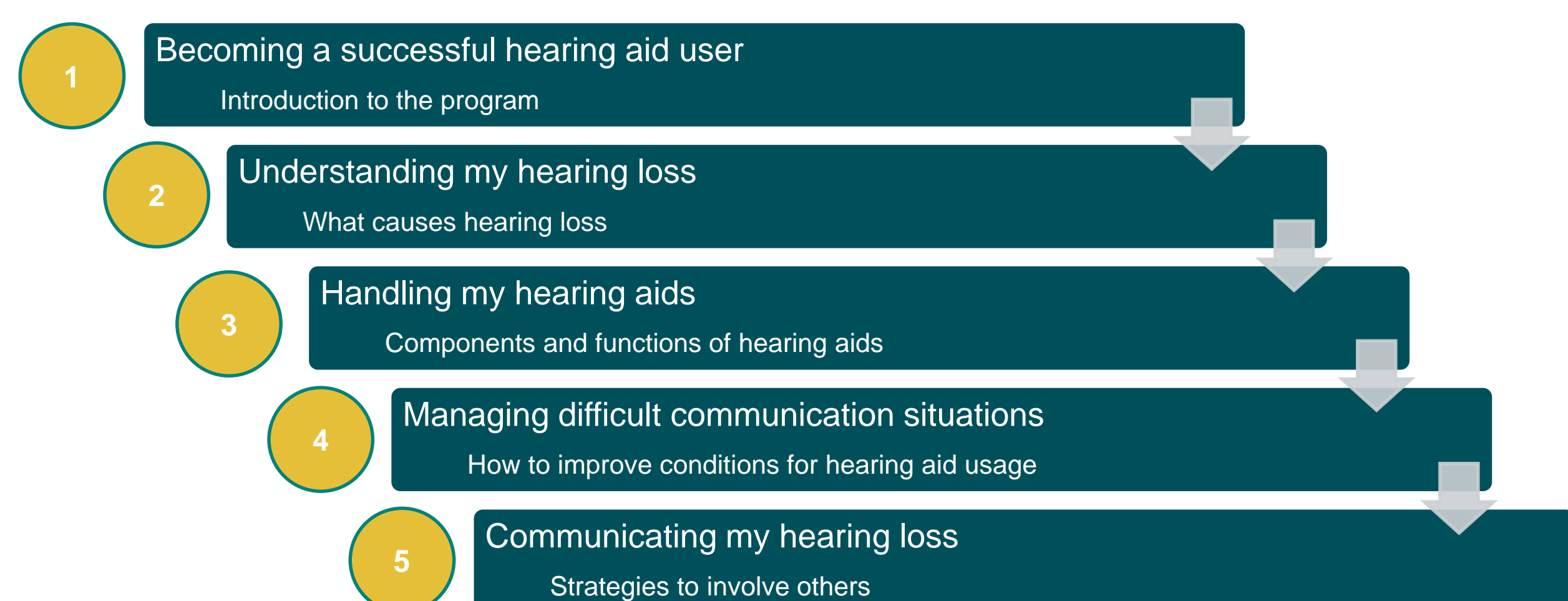
**Phase 2:** Development, optimization and online integration of the online rehabilitation program plus Alpha and Beta Testing.

**Phase 3:** Testing and validation of the effect of the program.

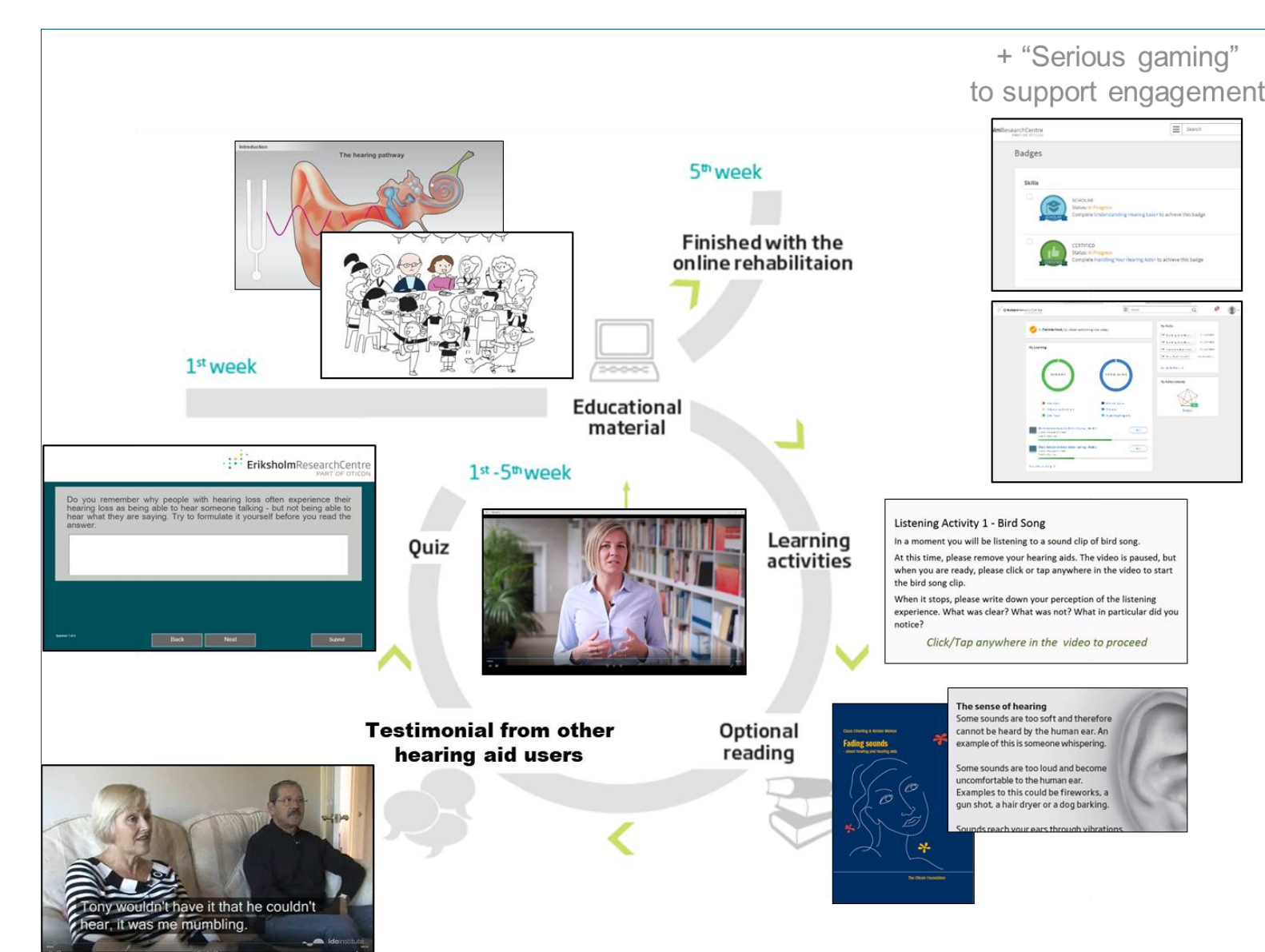


### Structure of Eriksholm Guide to Better Hearing

The Eriksholm Guide to Better Hearing is composed as a five week online learning program containing five different modules, one module to be finished every week. The duration of each module is about 90-120 minutes and the modules follow the same template build upon insights into health literacy and adult learning.



A hearing coach is used as the central part to guide participants through each module and glue the different elements of the program. Each module consists of elements focusing on giving the participants knowledge about hearing loss, taking control of his or hers hearing situation, and being reflective and interactive.



### Module elements

- Hearing Coach
- Quotes
- Introduction videos
- Testimonial videos
- Reflections
- Animated videos
- Technical knowledge
- Knowledge test
- Recap videos

### Testing

The Eriksholm Guide to Better Hearing has been thoroughly tested in parallel with it's development to enhance the quality of the program before the final RCT commences.

Usability and Feasibility study design	Key messages
<b>Usability study at Nottingham site (N=28)</b>	
(N): 25 experienced HA users and 3 new HA users Method: At home test of module 1-5 Feedback: Feedback questionnaire (n=20) and focus group (n=8)	Nov. 2016- Feb. 2017 • A lot of technical issues (e.g. froze/crashing) using the system, and it wasn't very easy to use, e.g. too difficult to move back/forward • Language too technical and not aimed at the target audience • However, they thought the content was useful/educational, and exceeded that usually provided by an NHS audiologist
<b>Alpha Testing at Eriksholm site (N=3)</b>	
(N): 3 Eriksholm employees Method: Monitored crash test of module 1-3 Feedback: Feedback sessions which were recorded and used to make minor revisions of the program	June 2017 • Screen text too small and not aimed at elderly people • Submit and Next buttons are not consistent across modules • Once the Submit button has been pressed the answer cannot be edited • The main problem was that several videos did not work
<b>Beta Testing at Eriksholm site (N=13)</b>	
(N): 13 experienced HA users Method: At home test of module 1-3 Feedback: Feedback sheet and spontaneous feedback by mail and phone	June 2017 • Various logging in problems for several test subjects • Automatic generated emails from the Captivate Prime program confuse test subjects • Continuous problems with the Submit button • The main problem was that several of the videos did not work
<b>Feasibility study at Nottingham site (N=40)</b>	
(N): 14 experienced HA users and 26 new HA users Method: At home test of module 1-5 Feedback: Feedback questionnaire	Nov. 2017- May 2018 • The majority found the program informative, and enjoyable • The majority liked the option of pausing the program and to have illustrations and videos • Especially useful and implementable information about hearing aids, hearing loss and communication tactics • The main limitation identified was that several of the videos within the program did not work. As a result of this finding, work is currently underway to resolve this issue
<b>RCT at Nottingham site Sep.2018 - Sep.2019</b>	

### Preliminary results

Preliminary analysis from the feasibility study suggests that the participants have reduced handicap, as measured by the HHIE (Ventry & Weinstein, 1982), and greater hearing aid self-efficacy, as measured by the MARS-HA (West and Smith, 2007). Analysis of additional outcome measures is ongoing. A randomized controlled trial (RCT) of the Eriksholm Guide to Better Hearing will provide clinical and cost-effectiveness evidence to demonstrate whether this tool is beneficial for online hearing rehabilitation in the UK's National Health Service.

### Conclusion

Eriksholm Guide to Better Hearing seems to present an effective way to help people with hearing loss to sustain social life and become more satisfied hearing aid users. The usability and feasibility testing of the program has provided many useful aspects about this online hearing rehabilitation program, which are essential to the successful completion of a future RCT. If effective, this program could be implemented into future clinical services.

### References

- Thorén, E.S.; Öberg, M.; Wänström, G.; Andersson G. and Lunner, T., 2014. A randomized controlled trial evaluating the effects of online rehabilitative intervention for adult hearing-aid users  
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