Improving listening in noise
Noise suppression for hearing-impaired listeners

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The aim of the study is to establish the effectiveness of the developed LINE-1 noise suppression scheme for settings that are realistic under the technical possibilities of hearing aids and cochlear implants (CIs). The present study is a...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Hearing disorders
Study type	Observational non invasive

Summary

ID

NL-OMON36091

Source
ToetsingOnline

Brief title
Improving listening in noise

Condition

- Hearing disorders

Synonym
hearing impairment, speech-in-noise reception

Research involving
Human

Sponsors and support

Primary sponsor: Vrije Universiteit Medisch Centrum
Source(s) of monetary or material Support: NWO-STW Valorisatie grant fase 2

Intervention

Keyword: Hearing impairment, Noise reduction, Speech in noise

Outcome measures

Primary outcome

The effectiveness of the LINE-1 noise suppression scheme will be investigated

for different types of noise while adhering to the technical possibilities of

hearing aids and CIs.

Secondary outcome

na

Study description

Background summary

Hearing impairments can have different causes and are different for all patients with hearing complaints. Different expressions of hearing impairment have different effects on the daily life of the patients. However, one of the main complaints is not being able to understand speech under adverse conditions, which impedes communication. For improved communication, a noise-suppression scheme was developed that improves speech reception in noise by 1 to 2 dB, depending on conditions. The current project focuses on implementing this scheme under the technical limitations of present-day hearing assistants.

Study objective

The aim of the study is to establish the effectiveness of the developed LINE-1 noise suppression scheme for settings that are realistic under the technical possibilities of hearing aids and cochlear implants (CIs). The present study is a valorisation study in the sense that the outcomes, when positive, will be used to interest the manufacturers of hearing aids and CIs in applying the present technology in their commercial devices.

Study design

Hearing study using processed and unprocessed speech-in-noise stimuli. The

auditory stimuli are presented via head phones to normally-hearing and hearing-impaired listeners and via speakers or the auxiliary input for CI wearers.

Study burden and risks

The burden of the participants comprises of either repeating perceived speech or of pressing a key on a keyboard in response to the speech. A complete measurement session will take approximately one hour and thirty minutes to two hours (with brakes). The sound presentation levels used will all be in the comfortable range of the listeners. If any listeners happen to find any sound presentations too loud, those presentations will be reduced in level to a level that is comfortable for them. The proposed type of research is extremely low risk.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)

Elderly (65 years and older)

Inclusion criteria

Normally hearing: good hearing, younger than 80
Hearing impaired: able and modarately hearing impaired, younger than 80
CI patients: able and CI wearer, younger than 80

Exclusion criteria

Older than 80, younger than 18
Word identification scores in quiet below 60 percent correct

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	25-05-2011
Enrollment:	48
Type:	Actual

Medical products/devices used

Generic name:	Experimental noise suppression algorithm
Registration:	No

Ethics review

Approved WMO Date:	24-05-2011
Application type:	First submission
Review commission:	METC Amsterdam UMC

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL35754.029.11