Auditory and cognitive effects on the intelligibility of speech in noise

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The main objective of this study is to increase current insights into the role of auditory and cognitive factors in the reduced ability to understand speech in noisy environment, particularly for hearing impaired people. These insights will help to…

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

Summary

ID

NL-OMON38146

Source
ToetsingOnline

Brief title
Hearing and cognition in speech understanding

Condition

- Hearing disorders

Synonym
hearing impairment, hearing loss

Research involving
Human

Sponsors and support

Primary sponsor: Vrije Universiteit Medisch Centrum
Source(s) of monetary or material Support: het Heinsius-Houbolt Fonds

Intervention

Keyword: age, cognitive factors, hearing impairment, speech intelligibility

Outcome measures

Primary outcome

Scores of auditory test including speech understanding skills. Scores of

cognitive tests. Correlations between them.

Secondary outcome

Scores of language skills tests.

Study description

Background summary

There are numerous evidences for the essential role of cognition in the process of understanding spoken language, particularly in association with hearing loss. As a consequence, it becomes increasingly important to identify the relationship between hearing and cognition. Difficulties in understanding speech, especially in noisy environments, is a common problem among visitors of Audiology Centers, also if auditory tests do not reveal any abnormalities. This fact indicates that auditory tests such as the pure tone audiogram, which primarily measure damage in cochlea processing, are not sufficient to explain the prevalent problems in speech understanding in adverse listening situations. A complete understanding of the processes involved in hearing en listening in noisy environments would give us insights into the functions of both the ear and cognition. In this project we are going to investigate the particular contributions of hearing and cognition that are involved in the process. The results of this research will help to optimize the diagnostics and rehabilitation of hearing impaired people and people with unexplained complaints.

Study objective

The main objective of this study is to increase current insights into the role of auditory and cognitive factors in the reduced ability to understand speech in noisy environment, particularly for hearing impaired people. These insights will help to increase the effectiveness of hearing rehabilitation by providing background information for ways of rehabilitation complementary to hearing

aids.

Another objective is to develop a clinically applicable test that measures the cognitive contributions to speech understanding.

Study design

Cross-sectional study

Study burden and risks

Participants will be invited for two a test session with a duration of 2.5 hours. They are going to do 3 auditory tests, 1 language skills test, and two cognitive tests. There are no foreseeable risks connected to participation in this research. The burden for the individual participant is low.

Contacts

Public
Vrije Universiteit Medisch Centrum

de Boelelaan 1117
1081 HV Amsterdam
NL
Scientific
Vrije Universiteit Medisch Centrum

de Boelelaan 1117
1081 HV Amsterdam
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age

Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

- age > 18
- Dutch is mother tongue
- no diagnosis of dyslexia

Exclusion criteria

- age < 18
- mother tongue other than Dutch
- relevant medical issues
- diagnosed with dyslexia

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:	Diagnostic

Recruitment

NL

Recruitment status:	Completed
Start date (anticipated):	20-11-2009
Enrollment:	240
Type:	Actual

Ethics review

Approved WMO Date:	02-11-2009
Application type:	First submission
Review commission:	METC Amsterdam UMC
Approved WMO Date:	21-02-2012
Application type:	Amendment
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	NL28507.029.09