

# Sound perception in elderly

Published: 02-05-2013

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|                              |                            |
|------------------------------|----------------------------|
| <b>Ethical review</b>        | Approved WMO               |
| <b>Status</b>                | Recruiting                 |
| <b>Health condition type</b> | Hearing disorders          |
| <b>Study type</b>            | Observational non invasive |

## Summary

### ID

NL-OMON45100

### Source

ToetsingOnline

### Brief title

SUPER

### Condition

- Hearing disorders

### Synonym

deafness, hearingloss

### Research involving

Human

### Sponsors and support

**Primary sponsor:** Universitair Medisch Centrum Groningen

**Source(s) of monetary or material Support:** NWO ,Marie Curie Actions; ITN

### Intervention

**Keyword:** Aging, Hearing-impairment, Speech perception

## Outcome measures

### Primary outcome

The main study parameters will be changes in performance levels, eye-track shape or length, and EEG evoked responses due to hearing impairment, aging, or hearing device use.

### Secondary outcome

The secondary outcomes are the understanding of these effects as a function of distortion level in the audio signals and the understanding of dynamics between different measures, as they reflect different sensory and central nervous system processes.

## Study description

### Background summary

Previous research has shown that elderly and hearing impaired listeners, as well as users of hearing aids and cochlear implants have difficulties understanding speech in noise backgrounds. Because many hearing-impaired people are also elderly, it is not currently known how much hearing impairment and how much aging contribute to these difficulties. Knowing this is important to produce more effective rehabilitation programs that are better customized for individuals.

### Study objective

The purpose of this study is to understand the complex dynamics between hearing impairment and aging for auditory perception.

### Study design

The study is an observational study, with both within-subject and across- group comparisons. During screening age-related cognitive changes will be measured using linguistic, working-memory, and attention tests. In all experiments the participants will attend to audio and/or audiovisual recordings that are

processed to imitate audio distortions due to background sounds. In behavioural experiments we will measure perception accuracy of these sounds and response times. In physiological experiments we will measure eye tracking and EEG signals. New audio and/or audiovisual recordings may also be collected.

### **Study burden and risks**

There is no known risk, nor benefit associated with participation. Screening will last 1.5 hours. The data collection will last between 3 to 8 hours per listener, including breaks and broken into multiple sessions to minimize fatigue and maximize alertness. Session duration and the number of sessions will be adjusted for each participant as needed.

## **Contacts**

### **Public**

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NL

### **Scientific**

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## **Trial sites**

### **Listed location countries**

Netherlands

## **Eligibility criteria**

### **Age**

Adults (18-64 years)

Elderly (65 years and older)

## Inclusion criteria

- Age > 18 years, but younger than 80 years
- Healthy subjects, other than hearing disorders or cochlear-implant use
- Native Dutch speaker for experimental data collection; Native or nonnative Dutch speakers for recordings collection

## Exclusion criteria

- Known linguistic or speech disorders (such as dyslexia)
- In speech experiments: Non-native Dutch speaker

## Study design

### Design

**Study type:** Observational non invasive

Masking: Open (masking not used)

Control: Uncontrolled

Primary purpose: Other

### Recruitment

NL

Recruitment status: Recruiting

Start date (anticipated): 14-05-2013

Enrollment: 1040

Type: Actual

## Ethics review

Approved WMO

Date: 02-05-2013

Application type: First submission

Review commission: METC Universitair Medisch Centrum Groningen (Groningen)

Approved WMO

|                    |                                                         |
|--------------------|---------------------------------------------------------|
| Date:              | 10-03-2015                                              |
| Application type:  | Amendment                                               |
| Review commission: | METC Universitair Medisch Centrum Groningen (Groningen) |
| Approved WMO       |                                                         |
| Date:              | 18-04-2017                                              |
| Application type:  | Amendment                                               |
| Review commission: | METC Universitair Medisch Centrum Groningen (Groningen) |

## 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     | NL42969.042.12 |