Measuring speech recognition abillities in quiet and noise in cochlear implant users

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

Summary

ID

NL-OMON33056

Source
ToetsingOnline

Brief title
Measuring speech recognition abilities in CI users

Condition

- Hearing disorders

Synonym
hearing impaired, hearing loss

Research involving
Human

Sponsors and support

Primary sponsor: Vrije Universiteit Medisch Centrum
Source(s) of monetary or material Support: Ministerie van OC&W,bedrijf: Cochlear Benelux NV,Cochlear Benelux NV

Intervention

Keyword: cochlear implants, speech intelligibility, speech reception threshold test

Outcome measures

Primary outcome

For five speech tests, including tests in quiet and tests in noise, we will measure recognition thresholds in test and retest. We will evaluate the applicability of the tests for measuring communication abilities in CI users. Reliability of the tests will be estimated from test-retest differences. The validity of the digit-triplet test will be studied from the correlations with well established speech tests.

Secondary outcome

Scores on language test and results of a questionnaire on auditory performance.

Study description

Background summary

Speech recognition abilities vary considerably among Cochlear Implant (CI) users, and knowledge of the underlying factors is still very limited. In future studies we aim to investigate how auditory coding and non-auditory factors influence the speech recognition abilities in CI users. For measuring speech recognition several test procedures are commonly used. However, especially for CI users, all of these tests have their drawbacks like: floor and ceiling effects outside a narrow applicability range, or unwanted association with language proficiency. A recently developed test from our department, using digit triplets as speech signal applied in noise, seems to be less affected by these problems and therefore better suitable for evaluating speech recognition in CI users. In the current study we want to compare the digit-triplet test with more commonly used tests on speech recognition.

Study objective

The primary objective is to investigate to investigate the construct validity

of the digit-triplet test for measuring the speech-recognition ability. For this reason we will study the relations between scores on the triplet test with other speech-intelligibility scores, scores on a linguistic test and subjective auditory performance. Secondly we will investigate the reliability and feasibility of the triplet test as compared to more common tests.

We aim to find a test that is applicable for a broad range of hearing losses to make comparison of test scores among listeners possible. Additionally we will look for a suitable outcome measure for future studies on factors affecting the speech recognition abilities in CI users.

Study design

cross-sectional study

Study burden and risks

Participants will attend a 2 hour test session. Tests include 5 speech recognition tests, a language test and a questionnaire on auditory performance in daily life. Participants are at no health 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

age > 18
Native language: Dutch
CI users, hearing aid users or normal hearing persons

Exclusion criteria

age < 18
native language other than Dutch
relevant medical issues

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:	Recruiting
Start date (anticipated):	04-08-2009
Enrollment:	75
Type:	Actual

Ethics review

Approved WMO Date:	19-06-2009
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	NL27875.029.09