Predicting the Speech Intelligibility in Fluctuating and Reverberant Background Noise

Published: 01-04-2014 Last updated: 20-04-2024

To validate the Extended Speech Transmission Index (ESTI) model for fluctuating noise in reverberant conditions in both normal hearing and hearing impaired subjects

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

Summary

ID

NL-OMON44646

Source ToetsingOnline

Brief title Predicting Speech Intelligibility

Condition

• Hearing disorders

Synonym Hearing Impairment, Hearing Loss

Research involving Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: Fluctuating noise, Reverberation, Speech intelligibility, Speech Transmission Index

Outcome measures

Primary outcome

This study aims to validate the ESTI model using speech intelligibility

measurements. We aim to do speech intelligibility measurements for all subjects

in different conditions (noise type en reverberation time) and compare these to

the model outcomes.

Secondary outcome

NA

Study description

Background summary

People often have problems with speech understanding in noise, especially when they suffer from hearing impairment. This project aims to estimate the speech intelligibility in fluctuating noise and reverberant environments in order to advise in assistive listening devices, hearing aids and/or acoustical adjustments

Study objective

To validate the Extended Speech Transmission Index (ESTI) model for fluctuating noise in reverberant conditions in both normal hearing and hearing impaired subjects

Study design

An observational feasibility study.

Study burden and risks

Since this study is observational, the burden for the subject is minimal. The

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tests, which are similar to those done in clinical practice, will be done during a one time visit. The experiments can potentially lead to a much broader application of the Speech Transmission Index (STI). This will give professionals a better tool to quantify problems which people experience in the working or classroom environment.

Contacts

Public Academisch Medisch Centrum

Meibergdreef 9 Amsterdam 1105AZ NL **Scientific** Academisch Medisch Centrum

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

Normal hearing subjects: Over 18 years of age Hearing threshold <= 20 dB (PTA0.5/1/2/4 kHz);Hearing impaired subjects: Over 18 years of age Sensorineural hearing loss

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Symmetrical hearing loss: The difference between the average PTA at 0.5/1/2/4 kHz of both ears can be maximally 10 dB Hearing thresholds (assessed within the last 6 months): Threshold > 35 dB PTA0.5/1/2/4kHz

Exclusion criteria

Language problems Conductive hearing loss: Average air-bone gap of > 10 dB at 0.5/1/2/4/ kHz

Study design

Design

Study type: Observational non invasive		
Masking:	Open (masking not used)	
Control:	Uncontrolled	
Primary purpose:	Diagnostic	

Recruitment

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NL	
Recruitment status:	Recruitment stopped
Start date (anticipated):	24-04-2014
Enrollment:	40
Туре:	Actual

Ethics review

Approved WMO	
Date:	01-04-2014
Application type:	First submission
Review commission:	METC Amsterdam UMC
Approved WMO	
Date:	17-11-2016

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Application type: Review commission: Amendment 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
 NL48348.018.14