

Speech reception in children in realistic listening scenarios

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We measure the speech understanding of children in different acoustic conditions and on different performance levels: the speech recognition threshold (i.e. just intelligible), and a comfortable intelligibility level. We do this because we want to...

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

Summary

ID

NL-OMON46286

Source

ToetsingOnline

Brief title

Speech reception in children

Condition

- Other condition
- Hearing disorders

Synonym

speech recognition in a noisy environment, Speech recognition in noise

Health condition

Ontwikkeling van het gehoor

Research involving

Human

Sponsors and support

Primary sponsor: Vrije Universiteit Medisch Centrum

Source(s) of monetary or material Support: Bedrijf, Sonova

Intervention

Keyword: Classroom acoustics, Primary school, Speech recognition curve, Speech recognition in noise

Outcome measures

Primary outcome

Speech Reception Threshold per group and per age group, on different performance levels and in different acoustic circumstances.

Secondary outcome

Speech recognition curves for the four groups, different age groups and different acoustic circumstances.

Study description

Background summary

This study aims to assess the skills of primary school children to understand speech in a noisy classroom-like setting. When we know how the scores on a speech in noise test (Digits In Noise test (DIN, Smits et al., 2013) and Sentences in Noise Test (Plomp & Mimpen, 1979; Versfeld et al, 2000) are related to children's abilities to understand speech in a realistic environment, we can use this knowledge to determine the acoustic circumstances (expressed in Speech Transmission Index (STI, Houtgast & Steeneken, 1973; Steeneken & Houtgast, 1980)) a child needs for comfortable listening. We hypothesize that children demand better acoustic circumstances compared to adults. The results of this study will be used in the clinic to advise about minimal and optimal acoustic conditions in everyday listening environments (e.g., classroom environments) for children with hearing impairment (HI) or specific language impairment (SLI).

Study objective

We measure the speech understanding of children in different acoustic conditions and on different performance levels: the speech recognition threshold (i.e. just intelligible), and a comfortable intelligibility level. We do this because we want to know what acoustic circumstances a child needs for comfortable intelligibility. We distinguish different groups in this study: typically developing children, children with hearing impairment (HI) and children with specific language impairment (SLI), in different age groups. We hypothesize that children demand better acoustic circumstances compared to adults.

Study design

Cross-sectional study

Study burden and risks

No health risks are associated with participation. All stimuli will be presented at safe sound pressure levels. Total test-time will not exceed 75 minutes, including a break for the participant. Benefit for participants will be an assessment of their hearing. Additionally, the participating children will receive toys and the participating adults will receive a fee of €7,50. Travelling expenses will be covered.

The study is group related (we include minors), since we want to know how children perform when it comes to understanding speech in different acoustical conditions.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age

Adolescents (12-15 years)

Adolescents (16-17 years)

Adults (18-64 years)

Children (2-11 years)

Elderly (65 years and older)

Inclusion criteria

Hearing thresholds: 20 dB or better at all octave frequencies from 250 to 8000 Hz

Age: between 4 and 12 years and adults

Native language: Dutch

Negative otologic history (except for the hearing impaired group)

Exclusion criteria

Mental disorder

Speech/Language disorder (except for the group with specific language impairment)

Native language other than Dutch

Positive otologic history (except for the hearing impaired group)

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):	08-12-2016
Enrollment:	164
Type:	Actual

Ethics review

Approved WMO	
Date:	27-10-2016
Application type:	First submission
Review commission:	METC Amsterdam UMC
Approved WMO	
Date:	15-02-2017
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	NL56186.029.16