

Applicability of an internet-based speech-in-noise test for noise-induced hearing loss screening purposes in occupational health

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

Summary

ID

NL-OMON36097

Source

ToetsingOnline

Brief title

Applying a speech-in-noise screening test for NIHL in occupational health

Condition

- Hearing disorders

Synonym

hearing impairment, noise-induced hearing loss

Research involving

Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum

Source(s) of monetary or material Support: Stichting Arbouw

Intervention

Keyword: Noise-induced hearing loss, Prevention, Screening, Speech-in-noise

Outcome measures

Primary outcome

Differences in test outcomes obtained in the various conditions will be calculated and compared in order to accurately implement the test for the occupational practice. Results of Earcheck performed in an at-home situation will be compared to pure-tone audiometry results of a large group of noise-exposed employees to assess the test sensitivity and specificity in this specific population.

Secondary outcome

NA

Study description

Background summary

Although noise-induced hearing loss (NIHL) can be entirely prevented, NIHL is currently the most reported occupational health disease in the Netherlands. A recently improved internet-based speech-in-noise test (*Earcheck*) could be of great value in occupational health. This test was specifically designed to detect beginning NIHL, and can be performed at home, at own initiative, and more frequently than current practice. Therefore, Earcheck can play an important role in prevention of NIHL, by detecting hearing loss in an early stage and by raising awareness about the risks of noise exposure for hearing ability.

Study objective

The purpose of this study is to determine how this screening test can be used best in practice, and whether Earcheck is a valid test, compared to the

pure-tone audiogram, that is applicable in a large population of construction workers exposed to noise.

Study design

This study consists of two parts. The first part is an implementation study of Earcheck, to investigate the differences in test results obtained in a well-controlled lab environment and in a less-controlled at-home situation. The participants will perform the online speech-in-noise tests both at the AMC and at home. Effects of test environment, test presentation, transducers and presentation level on the results of two versions of the online Earcheck is investigated.

The second part of the study examines the applicability of Earcheck for NIHL screening purposes in a hearing conservation program in the construction industry. To assess the validity of Earcheck in this population, 400 construction employees will perform two versions of the online Earcheck at home. Test results will be compared to results of the pure-tone audiogram, the clinical standard, obtained from recent periodic occupational health examination.

Study burden and risks

Since this study is observational, the burden for the patient is minimal. The majority of the study population will perform four speech-in-noise tests at home via internet, each taking 5 minutes. Thirty participants will perform several tests, similar or equal to those done in clinical practice, during a one time visit of approximately 2 hours. To reduce the load to a minimum, several short breaks will be taken. There are no risks associated with the investigational test.

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

18 years of age or older

recently (< 3 months) underwent a periodic occupational health examination

normal hearing ability (hearing threshold levels at octave frequencies ≤ 20 dB HL) or

sensorineural noise-induced hearing loss (one or more hearing threshold levels at 2-6 kHz ≥ 25 dB HL)

Exclusion criteria

Language problems

Conductive hearing loss (air-bone gap > 15 dB)

Hearing problems due to other etiologies than noise exposure

Study design

Design

Study type: Observational non invasive

Masking: Open (masking not used)

Control: Uncontrolled

Primary purpose: Diagnostic

Recruitment

NL
Recruitment status: Recruitment stopped
Start date (anticipated): 11-12-2011
Enrollment: 430
Type: Actual

Ethics review

Approved WMO
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	NL37252.018.11