Feasibility study on the use of the Dutch translated version of the Penn Web-based Neurocognitive Battery in twin families.

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The aim of this study is to test the feasibility, reliability and validity of a Dutch version of the Penn Computerized NeuroPsychological testing system (CNP). It is tested wether our translated version is feasible for use in the Dutch population at...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Cognitive and attention disorders and disturbances
Study type	Observational non invasive

Summary

ID

NL-OMON36602

Source
ToetsingOnline

Brief title
Use of computerized neuropsychologic testing in twin research

Condition

- Cognitive and attention disorders and disturbances

Synonym
attention, cognition, memory

Research involving
Human

Sponsors and support

Primary sponsor: Vrije Universiteit

Source(s) of monetary or material Support: NWO

Intervention

Keyword: cognition, feasibility, heritability, reliability

Outcome measures

Primary outcome

Prestatiematen tijdens verschillende CNP taken:

1. Motor Practice Test

2. Emotion Recognition Test

3. Continuous Performance Test (number/letter version)

BREAK

4. Face Memory Test

5. Word memory Test (parent/child version)

6. Short Letter N-back test

7. Face Memory Test - Delayed Memory

8. Word memory Test - Delayed Memory (parent/child version)

BREAK

9. Conditional Exclusion Test

10. Emotion Differentiation Test

11. Short Computerized Fingertapping Test

12. Matrix Reasoning Test

BREAK

13. Visual Object learning Test

14. Logical reasoning (parent/child version)

15. Age Differentiation Test

16. Line Orientation Test

17. Visual Object learning Task - Delayed Memory

Secondary outcome

Covariates: sex and age, body mass index, educational attainment, reading ability, current profession (for adults), lifestyle information (exercise, smoking, alcohol), sleep duration, general health, blood pressure, and medication use.

Study description

Background summary

The University of Pennsylvania has developed a computerized neuropsychological testbattery, which has been used in scientific studies extensively. It was developed for several reasons, one of which was to overcome logistic problems that are part of pen-and-paper neuropsychological tests such as long administration times, and the administration and scoring of these tests that require training and may vary among administrators. The tests used in the CNP are based on existing tests, but have been modified to computer administration, providing domain scores for accuracy, speed and efficiency on all tasks. The CNP tests performance on a range of cognitive measures, like speed of information processing, emotion processing, attention, memory and executive functions. The battery used here consists of 17 subtests and takes on average one hour to administer. The cognitive functions that these tasks measure have proven to be related to brain structures and functioning, to be associated with psychiatric disorders, and to be heritable. Because of this, the tests are considered good endophenotypes in genetic studies for example for schizophrenia, and anxiety and depressive disorders.

Study objective

The aim of this study is to test the feasibility, reliability and validity of a Dutch version of the Penn Computerized NeuroPsychological testing system (CNP). It is tested wether our translated version is feasible for use in the Dutch population at large, specifically adolescents and their parents. Relevant questions are, for example, do subjects understand the instructions at all ages and education levels. Are there floor or ceiling effects in one or more subtests? What is the distribution of the performance scores? Can the CNP be

administerde at home with a laptop? What are the physiological reactions of the study?
In addition, the reliability of performance on the 17 subtests is assessed by examining the monozygotic twin correlation as a proxy for test-retest reliability. Validity of the battery will be tested by comparing the mean scores and distrubutions to those obtained in different countries (for instance UK and the US), and by testing the effects of educational attainment. The final goal is the availability of a Dutch translation of the Penn Web-based Neurocognitive Battery that is used in many countries in reserach on normal and abnormal brain development.

Study design

During the study the twin families can visit the VU University or will be visited at home by two researchers/assistants. Using a laptop version of the Penn Neurocognitive test battery and a short interview data will be collected on:
1. performance on 17 subtests reflecting 30 different cognitive functions (information processing speed, emotion recognition, attention, short and long term memory, executive functioning).
2. covariates including sex and age, body mass index, educational attainment, reading ability, current profession (for adults), lifestyle information(exercise, smoking, alcohol), sleep duration, general health, blood pressure, and medication use.

Administration of the Neurogcognitive test battery will take approximately one and a half hour. Two subtests, Word Memory test and the Short Logical reasoning test have special versions for adults and children. In between testing we take three breaks ; in the last break a short interview is conducted to assess the covariates. During the other breaks the blood pressure will be measured.

Study burden and risks

The computer test battery has been constructed to be as user friendly as possible. Instructions emphasize that some of the trials wiil be very hard on everybody. We deliberately make it possible that the families can choose between visiting the VU University or be visited at home to reduce the total time that they need to invest in the study as much as possible.

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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)
Elderly (65 years and older)

Inclusion criteria

Twin families with twins in the range 13 year or older. Both twins and at least one parent must be willing to participate.

Exclusion criteria

Known neurologic disorders (epilepsy, psychosis, pareses, paralysis, etc) or the use of neuroleptics, antihistaminergic, or antidepressives, pregnancy, cardiac desease (under treatment of the cardiologist); metal objects in thorax.

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):	15-03-2011
Enrollment:	400
Type:	Actual

Ethics review

Approved WMO Date:	18-02-2011
Application type:	First submission
Review commission:	METC Amsterdam UMC
Approved WMO Date:	05-12-2011
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	NL34493.029.10