Beyond the Genetics of Addiction

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The proposal is organized around five interrelated themes:1. Unravel the interplay between genetic and environmental influences on substance use by using extended twin-family designs.2. Disentangle genes and pathways involved in substance use with...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Lifestyle issues
Study type	Observational non invasive

Summary

ID

NL-OMON39205

Source
ToetsingOnline

Brief title
Addiction

Condition

- Lifestyle issues

Synonym
alcohol, caffeine, cannabis, smoking, substance use

Research involving
Human

Sponsors and support

Primary sponsor: Vrije Universiteit
Source(s) of monetary or material Support: ERC Starting grant 284167 van J.M. Vink

Intervention

Keyword: Genetics, Individual differences, Nicotine/alcohol/caffein/cannabis, Substance use

Outcome measures

Primary outcome

(longitudinal) questionnaire data on:

smoking behavior/ nicotine dependence

alcohol use and abuse

caffeine consumption

cannabis use

Secondary outcome

age

sex

Study description

Background summary

Most substances have well-known negative health consequences. Tobacco use is the world*s leading cause of preventable death and is estimated to cause lung cancer (70-90%), chronic respiratory disease (56-80%) and cardiovascular disease (22%). The proportion of disease burden attributable to alcohol equals around 4% of the global disease burden and this proportion was greatest in the US and Europe. In contrast, some studies have reported beneficial effects of (small amounts) of alcohol. Cannabis use is associated with increased risk for the subsequent use of more harmful drugs such as cocaine and heroin (15) and higher risk to psychotic symptoms (16). The effects of caffeine on human behavior are diverse, but for the healthy adult population, moderate daily caffeine intake is not associated with adverse health effects (17).

Substance use is common. Currently around 27% of Dutch population of 16 years and older smoked, about 80% of the Dutch population (>= 12 years) reported to drink alcohol and about 33% of 15-25 year olds have ever used cannabis (in Dutch sample), (Central Bureau of Statistics, 2009). Caffeine is consumed regularly by 80 to 90% of the adults as an ingredient of coffee, tea and other products (18). The prevalence of substance use is higher in man than in women. The pattern of substance use in the Netherlands is comparable with other European countries and the US and Australia.

Twin studies have shown that both heritable and environmental factors play a role in substance use and abuse. For initiation, the contribution of genetic factors is somewhat lower than for dependence variables. Linkage and candidate gene studies have revealed interesting candidate genes and chromosomal regions. Recently, genome-wide association analyses have revealed several important genes for substance related phenotypes.

The current project focuses on the sources of individual differences in the liability to substance use, the comorbidity of different substances and the consequences for health.

Study objective

The proposal is organized around five interrelated themes:
1. Unravel the interplay between genetic and environmental influences on substance use by using extended twin-family designs.
2. Disentangle genes and pathways involved in substance use with DNA-variant data.
3. Explore differential gene expression patterns associated with substance use.
4. Test the added value of biomarkers for substance use (measured in blood or urine) in understanding the individual variation in substance use.
5. Unravel relation between substance use and health by linking twin-family data to medical databases.

Study design

Longitudinal twin-family study
A combination of genetic epidemiological, molecular genetic and gene-environment interaction approaches will be used. Data will be analyzed with multivariate methods, longitudinal models as well as other state-of-the art methods.

Study burden and risks

All individuals registered with the NTR aged 18 years and older will receive an invitation letter and an information brochure outlining the present study. Participants will receive a link to the online survey and a (personal) login code. If they do not complete the online version, they will receive a reminder and a paper version of the list several weeks later. Participants are free to complete the qeustionnaire within their own time in their own home and there are no consequences to non-participation. Participants do receive (short) personal feedback on their data. Final results (on group levels) of the survey are published in scientific papers, on the NTR website and reported in the yearly Twinfo magazine, that is send out to all individuals registered with the NTR.

Participants are also invited to send us a sample of their scalp hair in order to measure exposure to substances.

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

Registered with the Netherlands Twin Register, and 18 years or older.

Exclusion criteria

All persons under the age of 18 years are excluded, as are those who have indicated that they do not want or are unable to participate in questionnaire research.

Study design

Design

Study type: Observational non invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	21-05-2013
Enrollment:	47000
Type:	Actual

Ethics review

Approved WMO

Date:	26-02-2013
Application type:	First submission
Review commission:	METC Amsterdam UMC

Approved WMO

Date:	27-07-2013
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	NL40627.029.12