Performance Monitoring and Response Inhibition in Cannabis Dependent Patients: An Event-Related Brain Potential Study

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

Summary

ID

NL-OMON37592

Source
ToetsingOnline

Brief title
Cognitive Control in Cannabis Dependence

Condition

- Other condition

Synonym
cannabis addiction, cannabis dependence

Health condition

middelen afhankelijkheid

Research involving

Human

Sponsors and support

Primary sponsor: Erasmus Universiteit Rotterdam
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: Cannabis addiction, EEG, Inhibition, Performance monitoring

Outcome measures

Primary outcome

The main study parameters are ERP modulations in response to the Go/NoGo and Eriksen Flanker Task. The end of this study will be reached when 60 participants are included and tested successfully.

Secondary outcome

To investigate whether there is a correlation with the amount and years of use on the one hand and the degree of errors and diminished neural correlates on the other hand. To investigate whether there is a correlation with the amount and years of use on the one hand and the degree of response inhibition on the other hand.

Study description

Background summary

Two important aspects of the cognitive control system in contemporary addiction models are inhibitory control and performance monitoring. The suggestion is made that impaired response inhibition is associated with difficulties to resist the use of a substance and that substance dependent patients are often insensitive to future negative consequences. Deficits in response inhibition and performance monitoring have been found in several addiction populations but have not yet been confirmed in cannabis dependent patients.

Study objective

The primary goal is to investigate whether there are deficits in the response inhibition and performance monitoring in cannabis dependent patients on both a behavioral and an electrophyisiological level. The secondary goals are to investigate whether there is a correlation with the amount and years of use on the one hand and the degree of errors in perfomracne monitoring and response inhibition on the other hand.

Study design

Participants will perform two tasks. First, participants will perform a Go/NoGo Task utilizing ERP measurements to examine the electrophysiological correlates of response inhibition. Second, participants will perform an Eriksen Flanker Task, utilizing ERP measurements to examine the electrophysiological correlates of performance monitoring. In both tasks, cannabis dependent patients will be compared with nicotine dependent controls. Participants need to be abstinent of cannabis for 24 hours and abstinent of nicotine for 2 hours. Both experiments will take place in the Erasmus Behavioral Lab of the Erasmus University in Rotterdam.

Study burden and risks

EEG is a safe, painless and non-invasive method for measuring brain activity. Since participants have to sit relatively still, effort will be made to make the test session as comfortable as possible (comfortable chair, pillows, breaks between blocks of trials).

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

1) Signed informed consent
2) Age between 18 and 25 years old
3) Normal or corrected-to-normal vision (is able to read presented text in EEG task easily)
4) Being a sigaterette smoker (at least 3 sigarettes in a week);Additional criterium for patient-group
5) Meeting the DSM-IV criteria of cannabis dependence

Exclusion criteria

1) History of significant medical illness and/or psychiatric disorders
2) Psychotropic medication
3) Alcohol use within 24 hours of the day of testing
4) Nicotine use within 3 hours of the experiment;Patient group
5) Meeting the DSM-lV criteria for dependence on other substances than nicotine or cannabis;Control group
5) Meeting the DSM-lV criteria for dependence on other substances than nicotine

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other

Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)

Primary purpose: Basic science

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-07-2012
Enrollment:	60
Type:	Anticipated

Ethics review

Approved WMO

Date:	04-07-2012
Application type:	First submission
Review commission:	METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam)

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	NL39635.078.12