# Changes in Delay Discounting, Time estimation ability and the role of Trauma in Addicted Patients during Initial treatment

Published: 15-02-2021 Last updated: 16-05-2025

The aim of this study is to obtain answers to the following main questions:1. Are delay discounting, time estimation and PTSD influenced by treatment?2. Do patients differ from healthy controls in delay discounting and/or time estimation ability? In...

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

# Summary

### ID

NL-OMON49471

**Source** ToetsingOnline

Brief title DDT-TAP

# Condition

• Other condition

**Synonym** Addiction, trauma

#### **Health condition**

Addiction and trauma

#### **Research involving**

1 - Changes in Delay Discounting, Time estimation ability and the role of Trauma in ... 24-05-2025

Human

### **Sponsors and support**

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

#### Intervention

Keyword: Addiction, Delay discounting, Time estimation, Trauma

#### **Outcome measures**

#### **Primary outcome**

This study will show the differences in patients between study intake and phase

1 completion of treatment for delay discounting, time estimation ability and

PTSD. A significant change would indicate that such variable has improved as a

result of / or is strongly associated with treatment outcomes.

Furthermore, this study will show degree of differences between healthy

controls and addicted patients in delay discounting and time estimation.

#### Secondary outcome

These outcomes are focused on improving diagnostics:

Individual psychological variables at intake that are associated with

abstinence at end of treatment.

Assessment of delay discounting (at intake) as a valid predictor of

treatment-drop out.

Analysis of the association of Trauma associated with delay discounting.

# **Study description**

#### **Background summary**

It has been shown that impulsivity is closely linked with addictive behavior (Lee, Hoppenbrouwers, & Franken, 2019). A commonly used behavioral measure of impulsive decision making is delay discounting which has shown to be associated with addiction and other externalizing behavior (e.g. Bickel, Odum, & Madden, 1999). The basis of delay discounting was the notion that drug dependence can be understood through the lens of behavioral economics; via availability (cost) of the drug, substitutes (other drugs, or non-drug activities) and further the discounting of delayed rewards resulting in \*loss of control\* (Bickel et al., 1998).

One of the recurring hypotheses is that delay discounting as such may be due to aberrations in the subjective perception of time (e.g. Gallistel & Gibbon, 2000; Takahashi, 2005, 2006; Namboodiri, Mihalas, & Shuler, 2014b). A recent review (Paasche, Weibel, Wittman, & Lallane, 2019) has specifically proposed a relationship between time perception and impulsivity in understanding the psychopathology of addiction. Research on changes in delay discounting in association with treatment of addiction is scarce.

Trauma & addiction are strongly related. A recent study found that 45,8% of addicted inpatients had met criteria for lifetime PTSD and 25% met criteria for current PTSD (Kok et al., 2015). A total of 95,8% of patients had suffered at least one trauma and the earliest trauma occurred at a mean of 11,3 years old. Given the association between addiction and delay discounting, one could make the assumption of a relationship between trauma and delay discounting. Research on the relationship between trauma and delay discounting is limited; in BPD, childhood trauma is predictive of delay discounting (Barker et al., 2015) and it has been shown that early traumatized individuals show steeper delay discounting (Simmen-Janevska, Forstmeier, Krammer, & Maercker, 2015). Research on relationship between trauma, delay discounting and addiction is scarce; a recent study found that delay discounting, severity of trauma symptoms and substance use were positively related (Morris et al., 2020)

Generally, problems with delay discounting are defined in the form of steepness, representing a devaluation of future consequences. A far less studied phenomenon in relation to delay discounting is anhedonia, or diminished interest in pleasurable activities and the inability to experience positive emotions. Anhedonia is an important feature of Post-Traumatic Stress Disorder (PTSD; American Psychiatry Association, 2013). Experimental evidence on the association between anhedonia and delay discounting is limited and inconclusive. Furthermore, impaired time distortion is a known aspect of dissociative responses to a traumatic experience (e.g. Bryant, 2007) but this has not been extensively researched.

In summary, there are indications that addiction, delay discounting, time estimation and trauma are associated, but the nature of these relationships is in need of further research. The primary goal of the present study is to assess whether delay discounting and time estimation ability improves in patients from pre-treatment to post-treatment. Furthermore, we hypothesize to find a reduction in delay discounting as an indicator of treatment success. As part of this, time estimation ability will be assessed. We expect to find an association between improved delay discounting and improvements in time estimation. In summary, we aim to establish the extent of the associations between treatment success, delay discounting and improvements in time estimation ability. Finally, we expect to find associations between PTSD-severity, delay discounting and time estimation ability.

### Study objective

The aim of this study is to obtain answers to the following main questions: 1. Are delay discounting, time estimation and PTSD influenced by treatment? 2. Do patients differ from healthy controls in delay discounting and/or time estimation ability?

In addition, the study will address the following secondary questions:

- 3. Which individual psychological variables at intake are associated with abstinence at end of treatment?
- 4. Is delay discounting (at intake) a valid predictor of treatment-drop out?
- 5. How is Trauma associated with delay discounting?

### Study design

The design of the study is observational. Patients will receive treatment exactly as per normal protocols; additional information will be gathered on:

- patients addiction severity
- IQ
- measures of self-assessed impulsivity
- trauma
- time estimation ability

The present study will be conducted at the outpatient clinic of Antes, where substance dependent participants will be monitored during their first phase of treatment. This first phase of treatment on average lasts 6 months and is primarily aimed at discontinuing a patients\* substance use and relapse prevention. Phase 1 treatment is individualized, focused on abstinence. Treatment is likely to include Cognitive Behavioral Therapy; however, alternatives may be more suitable. Some patients will receive medication to support abstinence. Measurement will be repeated at the end of phase 1 treatment (after 6 months), in addition to abstinence status (self-report). Abstinence self-report will be validated by 4 weekly urinalysis tests in the final weeks of treatment.

#### Study burden and risks

Burden and risks of patients' participation are limited.

# Contacts

Public Erasmus Universiteit Rotterdam

Burgemeester Oudlaan 50 Rotterdam 3062 PA NL **Scientific** Erasmus Universiteit Rotterdam

Burgemeester Oudlaan 50 Rotterdam 3062 PA NL

# **Trial sites**

### **Listed location countries**

Netherlands

# **Eligibility criteria**

Age Adults (18-64 years) Elderly (65 years and older)

### **Inclusion criteria**

Patients

5 - Changes in Delay Discounting, Time estimation ability and the role of Trauma in ... 24-05-2025

- 1. Age 18-65 year;
- 2. Substance use disorder
- 3. Willingness to participate in the study (informed consent procedure);
- 4. Motivation to persist in abstinence of substances

Healthy Controls

- 1. Age 18-65 year;
- 2. Matched on age, origin, education and sex with patients
- 3. No diagnosis of substance use disorder or psychiatric illness.
- 4. Willingness to participate in the study (informed consent procedure)

### **Exclusion criteria**

Patiënten

- 1. IQ < 80 and inability to read, speak, or write Dutch
- 2. Homelessness
- 3. Acute psychotic disorder

Healthy controls 1. substance use disorder (assessed by questionnaire and DSM criteria)

# Study design

### Design

Study type:	Observational non invasive	
Intervention model:	Other	
Allocation:	Non-randomized controlled tria	
Masking:	Open (masking not used)	
Control:	Active	
Primary purpose:	Health services research	

### Recruitment

...

NL	
Recruitment status:	Recruiting
Start date (anticipated):	11-03-2022
Enrollment:	167
Туре:	Actual

6 - Changes in Delay Discounting, Time estimation ability and the role of Trauma in ... 24-05-2025

# **Ethics review**

Approved WMO Date: Application type: Review commission:

15-02-2021 First submission 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 CCMO ID NL74743.078.20