

# The role of dynamic testing in predicting rehabilitation outcome in elderly stroke patients

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It is expected that the dynamic version of the Wisconsin Card Sorting Test (dWCST) is a valid measure of cognitive learning potential in terms of psychometric properties and construct validity. In terms of feasibility it is anticipated that the...

<b>Ethische beoordeling</b>	Positief advies
<b>Status</b>	Werving gestopt
<b>Type aandoening</b>	-
<b>Onderzoekstype</b>	Observationeel onderzoek, zonder invasieve metingen

## Samenvatting

### ID

NL-OMON23982

### Bron

Nationaal Trial Register

### Verkorte titel

DYNAMITES

### Aandoening

stroke, neuropsychology, treatment outcome, rehabilitation, aged (65 and over)

### Ondersteuning

**Primaire sponsor:** Zuyderland Medical Center

**Overige ondersteuning:** None

### Onderzoeksproduct en/of interventie

### Uitkomstmaten

### Primaire uitkomstmaten

Cognitive learning potential as measured by the dynamic Wisconsin Card Sorting Test (dWCST) and the dynamic Clock Drawing Test (dCDT) . The Utrecht Scale for Evaluation of clinical Rehabilitation (USER) will be used to measure rehabilitation outcome.

## Toelichting onderzoek

### Achtergrond van het onderzoek

**Rationale:** During rehabilitation patients need to relearn old skills, learn new skills and learn to cope with disability. Dynamic testing, a specific type of neuropsychological assessment, examines the effects of brief training on test performance and aims to measure the patients' learning potential.

**Objective:** The current study investigates the use of dynamic testing in elderly stroke patients and examines whether a dynamic measure of cognitive learning potential has additional value in predicting rehabilitation outcome. In this study the dynamic Wisconsin Card Sorting Test (dWCST) and a newly developed dynamic version of the Clock Drawing Task (dCDT) will be compared in terms of feasibility and validity for measuring cognitive learning potential in elderly stroke patients.

**Study design:** A prospective longitudinal observational design will be used.

**Study population:** Patients admitted to the geriatric rehabilitation unit of Zuyderland Medisch Centrum (location Sittard) who are diagnosed with a stroke.

**Main study parameters/endpoints:** 60 participants will complete the dWCST and the dCDT. The Utrecht Scale for Rehabilitation (USER) measures functional outcome and is the independent variable. To investigate the validity of the dynamic tests general psychometric properties and three different learning potential indices will be examined. Hierarchical regression analyses will be used to investigate the added value of dynamic testing in predicting rehabilitation outcome, after controlling for age, ADL dependency at admission, global cognitive functioning (MoCA), memory function (VAT) and depression (GDS-15). In addition to the data collection for answering the main research questions, 30 participants will merely complete a repeated version of the Clock Drawing Task (rCDT), in order to differentiate between learning potential versus practice effects.

**Nature and extent of the burden and risks associated with participation, benefit and group relatedness:** The burden for the participants is low. For as much as possible data will be used that already is collected as a part of regular health care. The USER is filled out by a trained member of the nursing staff and therefore concerning the USER there is no burden for the participants. For Sample 1 (N=60) the administration of extra tests will take approximately 1,5 hour in total. For Sample 2 (N=30) the only additional test is the rCDT, this will take approximately 5 minutes. As with the regular neuropsychological assessment it is possible that participants experience mild feelings of frustration or anxiety. Given the observational nature of the study there are no risks for the participants. Possible benefit to the participants

is that they may feel positively about themselves because they have helped contribute to the generation of new knowledge which is important for the care of elderly stroke patients.

### **Doel van het onderzoek**

It is expected that the dynamic version of the Wisconsin Card Sorting Test (dWCST) is a valid measure of cognitive learning potential in terms of psychometric properties and construct validity. In terms of feasibility it is anticipated that the duration of the assessment of the dWCST will be substantial (approximately 60 minutes) and therefore less suitable for the elderly population.

Since the dynamic version of the Clock Drawing Task (dCDT) is a newly developed test procedure, current research is exploratory. It is estimated that the feasibility in terms of duration time is acceptable (less than 15 minutes). Therefore, in terms of feasibility (i.e. duration time) it is expected that the dCDT is most appropriate for the elderly population. Whether the dCDT can measure cognitive learning potential and which of these two dynamic tests (i.e. dCDT, dWCST) will be most valid in measuring cognitive learning potential will be investigated in the current exploratory study

### **Onderzoeksopzet**

T 0 : USER will be filled out in the week of admission to rehabilitation unit

T 1: MoCA, dCDT, dWCST, VAT, GDS-15 (approximately 2-3 weeks after admission to rehabilitation unit)

T2: USER will be filled out in week of discharge (variable for each participant and dependent on duration of rehabilitation)

### **Onderzoeksproduct en/of interventie**

Not applicable.

## **Contactpersonen**

### **Publiek**

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088-459 7837

### **Wetenschappelijk**

Zuyderland Medisch Centrum  
Martine Wilbers

## Deelname eisen

### Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

In order to be eligible to participate in this study, patients must meet the following criteria:

- 1) diagnosis of stroke based on medical records and objectified by a neurologist.
- 2) sufficient command of the Dutch language based on clinical judgement.
- 3) informed consent.

### Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

A potential participant will be excluded based on clinical judgement, in case of:

- 1) severe aphasia
- 2) current psychiatric disorder and/or substance abuse
- 3) a diagnosis of degenerative brain disease, such as objectified dementia present before stroke.
- 4) minimally conscious state

## Onderzoeksopzet

### Opzet

Type:	Observationeel onderzoek, zonder invasieve metingen
Onderzoeksmodel:	Anders
Toewijzing:	N.v.t. / één studie arm
Blinding:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

### Deelname

Nederland	
Status:	Werving gestopt

(Verwachte) startdatum: 09-09-2019  
Aantal proefpersonen: 90  
Type: Werkelijke startdatum

## Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nee

## Ethische beoordeling

Positief advies  
Datum: 10-08-2019  
Soort: Eerste indiening

## Registraties

### Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

### Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

### In overige registers

Register	ID
NTR-new	NL7947
Ander register	METC Z (Zuyderland en Zuyd Hogeschool) : METC Z 096

## Resultaten