

Virtual visual cues to reduce freezing in Parkinson's disease: an explorative study

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Freezing of gait (FOG) is a particularly disturbing and potentially harmful symptom occurring in a majority of people with Parkinson's Disease (PD) over the course of disease. External cues, such as a metronome or bars on the floor, aid in...

Ethische beoordeling	Positief advies
Status	Werving nog niet gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON21397

Bron

Nationaal Trial Register

Verkorte titel

-

Aandoening

Parkinson's Disease; Freezing of Gait; ziekte van Parkinson; Bevriezen van lopen

Ondersteuning

Primaire sponsor: University of Twente

Overige ondersteuning: ZonMW

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

The main study parameters are 'freezing severity', 'step time variability variability', 'modal footstep latency', 'motor initiation' and 'stopping performance'. The study parameters are

contrasted between: 1) Cue responsiveness (during VR foot pedalling and overground walking), and 2) the correlation between freezing during overground walking and VR foot pedalling; both uncued and visually cued.

Toelichting onderzoek

Achtergrond van het onderzoek

Freezing of gait (FOG) is a particularly disturbing and potentially harmful symptom occurring in a majority of people with Parkinson's Disease (PD) over the course of disease. External cues, such as a metronome or bars on the floor, aid in timing and scaling of automatized movement, thereby facilitating initiation and continuation of gait. The mechanism behind visually cued movement has not been fully elucidated. The cerebellar-thalamo-cortical (CTC) network is likely involved in synchronizing movement with an external rhythm, but has not been studied in patients with PD and FOG (PD-FOG). In this study, we aim to validate a paradigm to be used in future neuroimaging studies investigating the neuronal networks underlying visually cued movement. In addition, this behavioural experiment explores whether moving visual cues in a virtual reality (VR) environment can improve motor timing and reduce freezing in persons with PD-FOG.

Doel van het onderzoek

Freezing of gait (FOG) is a particularly disturbing and potentially harmful symptom occurring in a majority of people with Parkinson's Disease (PD) over the course of disease. External cues, such as a metronome or bars on the floor, aid in timing and scaling of automatized movement, thereby facilitating initiation and continuation of gait. The mechanism behind visually cued movement has not been fully elucidated. The cerebellar-thalamo-cortical (CTC) network is likely involved in synchronizing movement with an external rhythm, but has not been studied in patients with PD and FOG (PD-FOG). In this study, we aim to validate a paradigm to be used in future neuroimaging studies investigating the neuronal networks underlying visually cued movement. In addition, this behavioural experiment explores whether moving visual cues in a virtual reality (VR) environment can improve motor timing and reduce freezing in persons with PD-FOG.

Onderzoeksopzet

Experiments are conducted during a single visit to the University of Twente.

Onderzoeksproduct en/of interventie

the main objective of this study is to validate a VR foot pedalling paradigm to study visual cueing and freezing of gait in patients with PD-FOG, to allow for its use in future neuroimaging studies. The secondary objective is to assess the influence of virtual visual cues on freezing and motor timing ability in persons with PD and FOG.

Contactpersonen

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

In order to be eligible to participate in this study, a subject must meet all of the following criteria:

- age > 18 years

Participants in the PD-FOG group should additionally meet the following criteria:

- idiopathic Parkinson's Disease fulfilling the UK Brain Bank criteria
- experiencing freezing of gait minimally twice a day. This is defined as a score of 1 on question 1 "have you experienced freezing of gait in the past month" on the New Freezing of Gait Questionnaire (NFOGQ), and at least one freezing of gait episode has been observed by a parkinsonnet-registered physiotherapist, neurologist or one of our clinical researchers.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

A potential subject who meets any of the following criteria will be excluded from participation in this study:

- Significant cognitive impairments. This is defined as a score on the mini mental state

examination (MMSE (30)) equal to or smaller than 14, or a score on the frontal assessment battery (FAB(31)) of equal to or smaller than 13.

- Comorbidities that cause severe gait impairment (e.g. severe arthrosis or neuropathy)
- Inability to lie supine for the duration of the test period
- Inability to walk 150 meters unaided
- Severe visual impairments preventing the participant from using the virtual reality display

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	N.v.t. / één studie arm
Blinding:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland	
Status:	Werving nog niet gestart
(Verwachte) startdatum:	01-04-2017
Aantal proefpersonen:	35
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies	
Datum:	16-02-2017
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 45400

Bron: ToetsingOnline

Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL6229
NTR-old	NTR6409
CCMO	NL60687.044.17
OMON	NL-OMON45400

Resultaten