The power of implicit motor learning 2.0 Application of analogy, errorless and observational learning after stroke

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Applying analogy, errorless and observational learning can for improve gait velocity and temporal-spatial gait parameters in clients after stroke.

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

Samenvatting

ID

NL-OMON25282

Bron
Nationaal Trial Register

Aandoening

Stroke

Ondersteuning

Primaire sponsor: Zuyd University of applied sciences
Maastricht University
Adelante
Zuyderland
Acedmic Hospital Maastricht
Overige ondersteuning: This study is financially supported by Stichting Alliantie Innovatie (Innovation Alliance Foundation), RAAK-Pro (2014-01-49PRO)

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Primary outcome variable are changes in temporal and spatial aspects of the gait pattern (amongst others gait width and step length), measured by the Vicon 3D motion capture system.

Toelichting onderzoek

Achtergrond van het onderzoek

Introduction
Healthcare professionals working in rehabilitation, like physiotherapists and occupational therapists, are experts in supporting relearning of motor tasks in people with a disability. When supporting the learning process of people after stroke, physiotherapists and occupational therapists are confronted with cognitive impairments that often occur within this target group and may hinder the learning process.
New insights from more fundamental research confirm the assumption that implicit learning is an approach that makes motor learning easier for clients with cognitive impairments. However, the results of these studies cannot be generalized to daily practice yet. Therefore, it remains unclear how implicit learning in daily practice, aimed at learning daily movements like walking, should be shaped and whether it is effective to optimally stimulate clients.

In this study it will be established which aspects of walking are improved by using three different applications of implicit motor learning.

Research questions
Which potential effective applications of analogy, errorless and observational learning can be identified for improving gait in clients after stroke?

Design
A cross-sectional experimental study in a motion lab (Maastricht University and Zuyd University of Applied Sciences) with 3D-movement analysis.
Intervention: Within the motion lab (3D motion capture system from Vicon), strategies will be investigated in controlled conditions to examine which applications seem useful. There are several applications of each strategy. Participants will be randomly assigned to own of the three strategies.

There are two measuring points interspersed with one week. At both measuring moments gait analysis will take place as described below (duration approximately one hour). During the first measuring point additional information is retrieved from the participants regarding characteristics and possible effect modifiers.

Population

75-90 clients after stroke in the subacute (> 3 months) and chronic rehabilitation phase (> 6 months).

Outcome measures
Primary outcome variable are changes in temporal and spatial aspects of the gait pattern. Potential confounders will be measured and taken into the analysis.

Doel van het onderzoek

Applying analogy, errorless and observational learning can for improve gait velocity and temporal-spatial gait parameters in clients after stroke.

Onderzoeksopzet

There are two measuring points interspersed with one week. At both measuring moments gait analysis will take place as described below (duration approximately one hour).

Onderzoeksproduct en/of interventie

Every participant will receive one of the implicit learning strategies (analogy, errorless or observational learning). Allocation of the strategies is determined at random. During a session within the gait laboratory, each learning strategy will be applied in three different ways aiming at improving three different characteristics of the gait pattern. Instructions belonging to the application are given to the participant. He/she is encouraged to use these instructions during a short walks. This is repeated 3 times per application. After a short break the same procedure is repeated for the next application.

Contactpersonen

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Potential participants will need to fulfill the following criteria:

-have a hemiparesis

-be able to walk 10 meters without manual assistance

-would like to improve their walking ability

-have a low walking speed (cut-off for self-selected gait speed <1.0m/s56)

-are able to visit one of the motion labs (either at Zuyd University in Heerlen or at Maastricht University)

-understanding of the Dutch language, enough to follow the a simple instruction

-signed informed consent

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

-additional impairments which are not related to stroke but can influence the gait pattern (e.g. severe osteoarthritis or amputation of the lower limb,

-additional neurological impairment (e.g. Parkinson’s Disease).

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Anders
Toewijzing:	N.v.t. / één studie arm

Controle: N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	01-11-2015
Aantal proefpersonen:	75
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	02-11-2015
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	NL4990
NTR-old	NTR5510

Register	ID
Ander register	Zuyd/ImplicitMotLearning_2.0/MotionLab : 15N153

Resultaten