Simulators and upper limb prostheses.

Gepubliceerd: 31-08-2011 Laatst bijgewerkt: 15-05-2024

After training one arm with a prosthetic simulator it is expected that the other arm will improve.

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

Samenvatting

ID

NL-OMON21697

Bron
Nationaal Trial Register

Aandoening

Bimanual transfer, upper limb prosthesis, simulators.
Bimanuele transfer, armprotheses, simulatoren.

Ondersteuning

Primaire sponsor: UMC Groningen
Overige ondersteuning: ZonMW

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

During three tests, pretest (day 1), posttest (day 5) and retention test (day 11) the movement and initiation time of three functional activities are measured using E-prime. With two deformable objects the force control is measured (the amount of pressure applied).

Toelichting onderzoek

Achtergrond van het onderzoek

People with an upper extremity amputation often choose to have fitted a prosthesis to restore the functionality for as best as possible. But the rejection rate of prosthetic devices is high, mainly due to a low degree of functional use (Biddiss & Chau, 2007; Dudkiewicz, Gabrielov, Seiv-Ner, Zelig, & Heim, 2004; Kyberd, Davey, & Morrison, 1998; Plettenburg, 2002). Functional use can be enhanced by training (Carter, Torrance, & Merry, 1969; Lake, 1997; Weeks, Wallace, & Anderson, 2003). To achieve maximum success in prosthetic use it is important to start to train in the first weeks after the amputation (Atkins, 1992; Dakpa & Heger, 1997; Gaine, Smart, & Bransby-Zachary, 1997). However, in these initial stages of rehabilitation the wounds are not healed yet and the prosthesis is not finished. To be able to start training within these initial stages, we propose to use the unaffected limb. With an upper limb prosthetic simulator, as developed earlier in Groningen, training can start with the unaffected hand. It is hypothesised that training the unaffected hand results in a higher starting level and faster learning of the affected hand. This effect is called ‘transfer of learning’ (Hicks, Gualtieri, & Schoeder, 1983; Karni et al., 1998; Kumar & Mandal, 2005; Lee, Hinder, Gandevia, & Carroll, 2010; Mier & Petersen, 2006; Pereira, Raja, & Gangavalli, 2011).

If we indeed establish that this transfer has effect on learning to use a prosthesis, then this might help the rehabilitation after an amputation of the upper limb to become faster and more efficient.

Doel van het onderzoek

After training one arm with a prosthetic simulator it is expected that the other arm will improve.

Onderzoeksopzet

First experiment 15-aug-2011;

Second experiment 19-sept-2011;

Third and fourth 1-oct-2011.

Onderzoeksproduct en/of interventie

The trainingsgroup gets a training with a prosthetic simulator for half an hour on 5 consecutive days, while the control group does not get any intervention. The training consist of the Southampton Hand Assessment Procedure.
In three tests, for both groups, the execution of tasks is analyzed.

Contactpersonen

Publiek

Hanzeplein 1
S. Romkema
Groningen 9700 RB
The Netherlands
+31 (0)50 3610108

Wetenschappelijk

Hanzeplein 1
S. Romkema
Groningen 9700 RB
The Netherlands
+31 (0)50 3610108

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Healthy participants: Normal or corrected to normal sight, rigth handed.

Experienced prosthetic users: Normal or corrected to normal sight, unilateral forearm amputation, experience with a myo-electric prosthese.

Novice prosthetic users: Unilateral forearm amputation.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Limited sight despite correction;

2. Motor problems concerning measured upper extremity;

3. Experience with the prosthetic simulator.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Gerandomiseerd
Blindering:	Open / niet geblindeerd
Controle:	Geneesmiddel

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	15-08-2011
Aantal proefpersonen:	116
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	31-08-2011
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 38367
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL2907
NTR-old	NTR3053
CCMO	NL35268.042.11
ISRCTN	ISRCTN wordt niet meer aangevraagd.
OMON	NL-OMON38367

Resultaten

Samenvatting resultaten
N/A