Learning force control with an upper limb prosthesis.

No registrations found.

Ethical review	Positive opinion
Status	Other
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON20324

Source
Nationaal Trial Register

Health condition

Upper limb prosthesis, Simulators, motor learning, force control

Sponsors and support

Primary sponsor: University Medical Center Groningen
Source(s) of monetary or material Support: Otto Bock

Intervention

Outcome measures

Primary outcome

Tests: Mean deviation of the produced force in respect to the asked force.

Training: Error (distance from the landed ball to the target).

Secondary outcome

N/A

Study description

Background summary

People with an upper extremity amputation often choose to have fitted a prosthesis to restore the functionality for as best as possible. However, the rejection rate of prosthetic devices is high, mainly due to a low degree of functional use (Biddis and Chau, 2007; Dudkiewicz et al., 2004; Kyberd et al., 1998; Plettenburg, 2002). This functional use can be enhanced by training (Carter, Torrance and Merry, 1969; Lake, 1997; Weeks, Anderson and Wallace, 2003). We expect that by enhancing the functional use through training, the overall use of prostheses will be enhanced. Currently, prosthetic training in rehabilitation centre is not evidence-based but mainly based on own experiences. In this study we will focus on a specific part of a training, the feedback one has to receive to learn to use the prosthesis as good as possible During this study, the focus of learning is on the force control of a myo-electric prosthesis.
The main objective of the study is to determine what type of feedback facilitates learning to control the grip force of a myo-electric hand.

Study objective

Type of feedback will have an influence on learning to control grip force.

Study design

The experiment will take place in September, October and November.

Intervention

Pretest-posttest intervention. Participants will train force control in a virtual game (shooting a ball into a target) for 5 sessions. During the training one half of the participants will receive feedback in the form of knowledge of performance, the other half will receive feedback in the form of knowledge of results. Force control will be tested during three tests, a pretest, a posttest and a retention test.

Contacts

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Eligibility criteria

Inclusion criteria

1. Able-bodied participants;

2. Normal or corrected to normal sight;

3. Right-handed.

Exclusion criteria

1. Earlier experience with a prosthetic simulator;

2. Motor problems concerning measured upper extremity.

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Other
Start date (anticipated):	03-09-2012
Enrollment:	32
Type:	Unknown

Ethics review

Positive opinion

Date:	05-09-2012
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

ID: 37201
Bron: ToetsingOnline
Titel:

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL3448
NTR-old	NTR3599
CCMO	NL40721.042.12
ISRCTN	ISRCTN wordt niet meer aangevraagd.
OMON	NL-OMON37201

Study results

Summary results
N/A