Developing a new test for ability to control an arm prosthesis.

No registrations found.

Ethical review	Not applicable
Status	Recruiting
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON25334

Source
NTR

Health condition

This experiment will be executed with healthy subjects.

Sponsors and support

Primary sponsor: University Medical Centre Groningen (UMCG)
A. Deusinglaan 1
9713 AV Groningen
The Netherlands
Source(s) of monetary or material Support: UCF, Revalidatiefonds

Intervention

Outcome measures

Primary outcome

Primary outcome measure per test;

1. Serious game: Adaptive catching; the plateau phase of the aperture of the gripper in the game (grasping profile) and he difference between the aperture of the virtual gripper and the diameter of three differently sized virtual balls

a. Prosthesis task: Compressible objects; Duration of maximum hand aperture (i.e., plateau phase, goniometer) and the number of millimeters the compressible objects are compressed.

The above described measures will be ranked per test. These ranks will be analyzed.

Secondary outcome

Secondary outcome measures;
1. Adaptive catching
a. Number of bounced objects
b. Accuracy. This is defined as the total number of items caught divided by the number of object that reached the bottom of the screen (dropped and missed objects).
2. Compressible objects
a. Aperture of the hand
b. Opening velocity
c. Closing velocity

Study description

Background summary

Recruting countries: the Netherlands

Study objective

In the process of developing a serious game for testing patients' level of myocontrol a part of the test needs to be validated. In a previous trial we found differences between several tests that need further inspection. The current study focusses on determining whether subject are equally good at a game and a similar prosthesis task after a period of training.

Study design

All subjects will be measured for 24 (2x12) minutes on five consecutive days. The primary results are based on magnitudes. In the prosthesis task these distances will be measured using a goniometer and a calliper. In the serious game these measures are based on data collected from the gripper that is displayed on the screen.

Intervention

During this study all subject will undergo two tests. One of these tests will be executed with the use of a myoelectric prosthesis simulator. The other test will be executed in a virtual environment, using a serious game. Both the myoelectric prosthesis simulator and the serious games are controlled using surface EMG measured on the flexor and extensor of the wrist. All participants will come back on five consecutive days to train both test for 12

minutes each. The two tests will be presented to the participants in a random order. During the serious game, only level one will be played.

Contacts

Public
Center for Human Movement Sciences-UMCG, University of Groningen. Building-Room 3216-213

A. Heerschop
A. Deusinglaan 1

Groningen 9713 AV
The Netherlands
+31 (0) 50 363 8902 // +31 (0) 6 44103626
Scientific
Center for Human Movement Sciences-UMCG, University of Groningen. Building-Room 3216-213

A. Heerschop
A. Deusinglaan 1

Groningen 9713 AV
The Netherlands
+31 (0) 50 363 8902 // +31 (0) 6 44103626

Eligibility criteria

Inclusion criteria

The subjects included in this study are able bodied and right handed, with normal or corrected to normal vision. Both male and female subject will be included. All subjects included will be between 18 and 50 years of age.

Exclusion criteria

Subjects with (history of) pain or musculoskeletal impairments of the arms or upper body will not be included. The same accounts for subjects with prior experience in the use of myoelectric devices and subjects younger than 18 or older than 50.

Study design

Design

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

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	14-12-2015
Enrollment:	15
Type:	Anticipated

Ethics review

Not applicable

Application type:	Not applicable

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

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

No registrations found.

In other registers

Register	ID
NTR-new	NL5449
NTR-old	NTR5593
Other	: ECB 2014.02.28_1

Study results