The feasibility and energy expenditure of adults with stroke playing Wii-Sports

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The aim of this study is to determine the feasibility and energy expenditure of adults with a stroke playing Wii-Sports.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Neurological disorders NEC
Study type	Interventional

Summary

ID

NL-OMON33744

Source
ToetsingOnline

Brief title
COMBAT-CVA

Condition

- Neurological disorders NEC

Synonym
cerebrovascular accident, stroke

Research involving
Human

Sponsors and support

Primary sponsor: Erasmus MC, Universitair Medisch Centrum Rotterdam
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: energy expenditure, feasibility, stroke, Wii-Sports

Outcome measures

Primary outcome

Feasibility :

The feasibility of adults with stroke to play Wii-Sports will be determined with custom made questionnnaires. Examples of questions are:"Can the subject hold the Wii-controller?", "Is the subject physical capable to play Wii-Sports?", "Can the subject play Wii-Sports for 10 minutes continuously?".

Energy expenditure:

The amount of oxygen uptake in the blood (VO2) is used to measure the energy expenditure of the subjects while playing Wii-Sports. The VO2 is expressed in L/min (absolute VO2) or ml/kg/min (relative VO2) or in ml//FFM(kg)/min (relative VO2 per fat free mass). The VO2 is measured with the Cosmed K4 b2 (COSMED, Rome, Italië), a portable system for pulmonary gas exchange analysis.

Secondary outcome

Heart rate (HR):

De heart rate (HR) is the amount of times the heart beats per minute (bpm). The HR is measured with the Cosmed K4 b2.

Metabolic equivalent (MET):

Energy expenditure during Wii-Sports will also be expressed in Metabolic equivalents (METs) to compare the results with energy expenditure data from playing actual sports. A MET is a multiple of oxygen consumption in rest (in

this study we use the energy expenditure during sitting).

Perceived exertion:

Perceived exertion is how hard you feel like your body is working. It is based on the physical sensations a person experiences during physical activity, including increased heart rate, increased respiration or breathing rate, increased sweating, and muscle fatigue. Perceived exertion will be measured with the Modified Borg Scale after Wii-Sports tennis and boxing.

Study description

Background summary

People with stroke have in general an inactive lifestyle and poor physical fitness compared to healthy individuals. Sufficient physical excercise and a good physical fitness have a positive effect on daily functioning, quality of life, and the chance of developing cardiovascular disease. It is, therefore, important that treatment programs are being developed that improve the physical activity level and physical fitness of people with stroke. A possible tool to improve the physical activity level and physical fitness could be Wii-Sports. However, before using Wii-Sports we have to know whether people with stroke can play Wii-Sports and what their energy expenditure is while playing Wii-Sports.

Study objective

The aim of this study is to determine the feasibility and energy expenditure of adults with a stroke playing Wii-Sports.

Study design

This is an cross-sectional intervention study. Custom made questionnnaires will be used to determine wether adults with stroke can play Wii-Sports. To determine the energy expenditure during Wii-Sports the subjects will play Wii-Sports tennis and boxing for 15 minutes each, with a 10 minute rest between the sports. During the game the subjects wear the Cosmed K4 b2 to measure the oxygen uptake (L/min), which is used to calculate the energy expenditure

(Kcal/min).

Intervention

The subjects play two Wii-Sports games (tennis and boxing) for 15 minutes each with a 10 minute rest between the games. If a subject is not able to play the games while standing up he or she can sit in a (wheel)chair to play the games.

Study burden and risks

The risks associated with participation to this study are minimal. Before starting the energy expenditure measurement the subjects are checked for cardial and pulmonary problems with the checklist of the Physical Activity Readiness Questionnaire (PAR-Q). Besides this, the subject can decide by himself the intensity of playing Wii-Sports. A medical doctor will be available during the study.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

- stroke >=6 months ago
- 18 years and older
- Functional Ambulation Categories (FAC) 3, 4 or 5

Exclusion criteria

- Other disorder than stroke which influence physical activity and fitness (e.g. lung disease, rheumatoid arthritis)
- Disorder for which maximum physical strain is too riskfull
- not understanding the reserch tasks due to cognitive disorders, apraxia or language
- total wheelchair dependent

Study design

Design

Study type: Interventional

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	16-03-2009
Enrollment:	10
Type:	Actual

Ethics review

Approved WMO Date:	17-02-2009
Application type:	First submission
Review commission:	METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam)

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
CCMO	NL25243.078.08