Estimating energy expenditure in sedentary physical activity using an accelerometer

Published: 12-04-2007
Last updated: 08-05-2024

To assess the validity of a piezo-capacitive accelerometer to predict energy expenditure related to sedentary physical activity. Secondary objective: To compare physical activity as performed in an respiration chamber with physical activity as...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Appetite and general nutritional disorders
Study type	Observational non invasive

Summary

ID

NL-OMON31141

Source
ToetsingOnline

Brief title
Estimating energy expenditure in sedentary activity

Condition

- Appetite and general nutritional disorders

Synonym
obesity overweight

Research involving
Human

Sponsors and support

Primary sponsor: Universiteit Maastricht
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: activity, energy, expenditure, sedentary

Outcome measures

Primary outcome

Energy expenditure related to physical activity (PAEE) as measured in the

respiration chamber and PAEE as predicted in the respiration chamber.

Secondary outcome

PAEE as predicted in daily life.

Study description

Background summary

Overweight and obesity are becoming a major health problem for society. To investigate the importance of low intensity daily physical activity in the development of overweight an appropriate measurement system is required. A piezo-capacitive accelerometer is probably suited, but has not been investigated for this purpose before. Additionally, it is not clear whether sedentary physical activity in a respiration chamber is representative for physical activity in daily life.

Study objective

To assess the validity of a piezo-capacitive accelerometer to predict energy expenditure related to sedentary physical activity. Secondary objective: To compare physical activity as performed in an respiration chamber with physical activity as performed in daily life.

Study design

Model development, validation of the model, validation of the validation (double validation study). The subject will be measured at the university and in daily life. The first part of the measurement at the university contains standardized physical activities lasting for one hour. The standardized activities are lying, sitting, standing and slow walking on a treadmill (< 5 km/h). The second part of the measurement at the university contains a stay in a respiration chamber for 24 hours. During the measurement in daily life the

subject is expected to fill in a short (one minute) questionnaire every day. In the rest of the time the subject is not restricted to any physical activity. In all measurements the subjects wears a belt around the waist. In the measurement in daily life, the band can be taken off during the night

Study burden and risks

No substantial risks are involved, because of the low intensity of the activities and the easy tasks. The subject visits the university ones. If practically possible the measurement in daily life will start at the end of this visit, if this is not the case an additional appointment will be made.

Contacts

Public
Universiteit Maastricht

Postbus 616
6200 MD Maastricht
Nederland
Scientific
Universiteit Maastricht

Postbus 616
6200 MD Maastricht
Nederland

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

gender: female
age: 18 - 29 year
physical status: healthy

Exclusion criteria

Any disease that can affect physical activity or energy expenditure

Study design

Design

Study type: Observational non invasive

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

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	11-05-2007
Enrollment:	16
Type:	Actual

Medical products/devices used

Registration:	No

Ethics review

Approved WMO

Date:	12-04-2007
Application type:	First submission

Review commission:	METC academisch ziekenhuis Maastricht/Universiteit Maastricht, METC azM/UM (Maastricht)

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	NL16635.068.07