Energy expenditure during functional daily tasks in subjects with chronic musculoskeletal pain and healthy subjects

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The main purpose of the current study is to evaluate whether patients with CMP have a higher energy expenditure during walking a prescribed distance or climbing a prescribed number of stair steps than healthy volunteers.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Observational non invasive

Summary

ID

NL-OMON37838

Source
ToetsingOnline

Brief title
Energy expenditure in subjects with chronic musculoskeletal pain

Condition

- Other condition

Synonym
a-specific chronic musculoskeletal pain (CMP); muscle and skeletal complaints

Health condition

a-specifieke musculoskeletale pijnklachten aan het bewegingsapparaat (chronische lage rugpijn en fibromyalgie)

Research involving
Human

Sponsors and support

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

Intervention

Keyword: Chronic muscoloskeletal pain, Energy expenditure, Physical functioning

Outcome measures

Primary outcome

The main study parameter is the difference in energy expenditure per task during walking and stair climbing between subjects with CMP and healthy volunteers.

Secondary outcome

Differences in energy expenditure per minute during walking and stair climbing between subjects with CMP and healthy volunteers.

Differences in energy expenditure per minute during walking and stair climbing between subjects with CLBP and FM.

Differences in time needed to complete both tests between subjects with CMP and healthy volunteers.

Energy expenditure per performed task measured with the Sense Wear Pro Armband

Study description

Background summary

Chronic musculoskeletal pain (CMP) is an important public health problem due to high impact on disability, quality of life, and health care costs. CMP has an

unknown cause and pathology and affects the everyday life of many people. It is characterized by widespread pain, fatigue, and cognitive symptoms. The fear-avoidance model gives a possible solution to the occurrence and persistence of chronic pain. This model states that when people react in a fearful way to pain, they might avoid daily activities and become less active in order to avoid the expected pain or possible injury. This inactivity together with depression and perceived disability has a negative influence on pain intensity. With the further increase of pain, a vicious circle arises and the pain becomes chronic. Eventually physical deconditioning could occur, though the evidence supporting physical deconditioning in patients with chronic pain is contradictory.
Another way to avoid pain or possible injury is to alter the way daily activities are performed. There is evidence that patients with CMP walk more slowly and with a different walking pattern than healthy controls. We hypothesize that this altered way of performing in walking could also be seen in other daily activities such as stair climbing.
This altered way of performing daily activities in patients with CMP is likely to be less efficient, i.e. resulting in a higher energy consumption. This higher energy expenditure during daily activities could also explain the fatigue reported by patients with CMP and the contradictory findings regarding the presence or absence of deconditioning.

Study objective

The main purpose of the current study is to evaluate whether patients with CMP have a higher energy expenditure during walking a prescribed distance or climbing a prescribed number of stair steps than healthy volunteers.

Study design

The differences in energy expenditure between patients with CMP and healthy volunteers are explored in a cross-sectional study.

Study burden and risks

Participants visit the hospital once. They have to fill in several questionnaires regarding daily activities and for patients with CMP also regarding pain and beliefs about pain. Participants perform two tests wearing a gas analysing device, the Oxycon Mobile. They have to walk 500 meters at a self chosen pace and climb 60 stair steps at a self chosen pace. If they feel tired, resting is allowed. Performing these daily life activities is of no risk for the subjects.

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

Subjects with CMP:
1. Diagnosed with fibromyalgia or suffering from chronic low back pain (pain localized below the scapulae and above the gluteal folds for longer than three months)
2. Age between 18 and 65
3. The pain syndrome is not attributable to a recognizable, known specific pathology (e.g. infection, tumour, osteoporosis, fracture, structural deformity, inflammatory disorder (e.g. ankylosing spondylitis), radicular syndrome or cauda equina syndrome).
4. Ability to walk 500 meter without walking aids and walk 60 stair steps with the use of one handrail, resting during these activities is allowed
Healthy volunteers:
1. Age between 18 and 65
2. Ability to walk 500 meter without walking aids and walk 60 stair steps with the use of one

handrail, resting during these activities is allowed

Exclusion criteria

Subjects with CMP
1. Use of β-blockers
2. Co morbidity hampering gas analyses, such as COPD or other lung conditions that require treatment by a lung specialist.
3. Pregnancy
4. Non-fluency in Dutch
Healthy volunteers:
1. Physical musculoskeletal pain
2. Use of β-blockers
3. Co morbidity hampering gas analyses, such as COPD or other lung conditions that require treatment by a lung specialist.
4. Pregnancy
5. Non-fluency in Dutch

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Diagnostic

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	20-04-2012
Enrollment:	120
Type:	Actual

Ethics review

Approved WMO Date:	19-03-2012
Application type:	First submission
Review commission:	METC academisch ziekenhuis Maastricht/Universiteit Maastricht, METC azM/UM (Maastricht)
Approved WMO Date:	22-05-2012
Application type:	Amendment
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	NL39260.068.12