

# Walking energetics and fatigue in persons with rheumatoid arthritis and osteoarthritis

Published: 23-10-2020

Last updated: 08-04-2024

To understand walking-related factors that contribute to fatigue and the relationship with total physical activity and social participation in daily life among pwRA and pwOA.

<b>Ethical review</b>	Approved WMO
<b>Status</b>	Recruiting
<b>Health condition type</b>	Other condition
<b>Study type</b>	Observational non invasive

## Summary

### ID

NL-OMON52542

### Source

ToetsingOnline

### Brief title

Walking energetics and fatigue in RA and OA

### Condition

- Other condition
- Autoimmune disorders

### Synonym

Rheumatoid Arthritis and osteoarthritis

### Health condition

osteoartrose

### Research involving

Human

## Sponsors and support

**Primary sponsor:** Medisch Universitair Ziekenhuis Maastricht

**Source(s) of monetary or material Support:** Ministerie van OC&W

## Intervention

**Keyword:** Cost of walking, Fatigue, Osteoarthritis, Rheumatoid arthritis

## Outcome measures

### Primary outcome

- Cost of walking
- Preferred walking speed
- Walking fatigability

### Secondary outcome

- Biomechanical characteristics of walking
- Daily physical activity
- Social role participation
- Daily life fatigue
- Physical activity and health
- Instantaneous perceived fatigue

## Study description

### Background summary

Persons with Rheumatoid Arthritis (pwRA) and persons with osteoarthritis (pwoA) experience increased fatigue in daily life of which a small part is explained by direct effects of disease activity such as pain and inflammation. Walking, as the core daily activity of humans, is altered in pwRA and pwoA compared to healthy subjects. The observed lower walking speed in pwRA and pwoA is not only related to lower quality of life but also with higher levels of fatigue. Underlying mechanisms supporting this relationship are currently unknown. When

considering the biomechanical principles of gait in healthy subjects, the preferred walking speed is also the walking speed with the lowest energetic cost. When translating this to pwRA or pwOA, the lower preferred walking speed is expected to increase the energetic demand during walking, referred to as the Cost of walking (Cw). Thus, insight into overall fatigue among pwRA or pwOA compared to healthy subjects, might be improved by understanding the relationship between (a) Cw of the preferred walking speed and the energetically most efficient walking speed on the one hand, and (b) walking speed, Cw, biomechanical walking characteristics and fatigability during walking. Secondary, the Cw and the presence of fatigability, will be related to total daily activity and participation, to help us better understand fatigue in RA and OA.

### **Study objective**

To understand walking-related factors that contribute to fatigue and the relationship with total physical activity and social participation in daily life among pwRA and pwOA.

### **Study design**

An exploratory observational case-control study

### **Study burden and risks**

The participants might feel fatigued after performing the walking trials.

## **Contacts**

### **Public**

Medisch Universitair Ziekenhuis Maastricht

Universiteitssingel 50  
Maastricht 6226ER  
NL

### **Scientific**

Medisch Universitair Ziekenhuis Maastricht

Universiteitssingel 50  
Maastricht 6226ER  
NL

## Trial sites

### Listed location countries

Netherlands

## Eligibility criteria

### Age

Adults (18-64 years)

### Inclusion criteria

- Diagnosed Rheumatoid Arthritis or hip Osteoarthritis
- Not in remission (Disease Activity Score >2.6 OR erosions in the feet for pwRA)
- Age range 18-70
- Walking without walking aid/ orthosis
- Understanding Dutch language

### Exclusion criteria

- Arthroplasty of Hip/Knee/Ankle/Shoulder
- Severe arthrosis Hip/Knee/Ankle/Shoulder (as an indication for surgery)
- Recent fracture of lower limb affecting gait (<12 months)
- Contra indication for physical activity
- Comorbidities affecting gait (COPD, Parkinsons disease)
- Fixation lumbar and cervical spine (atlas-dens)

## 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:	Treatment

## Recruitment

NL	
Recruitment status:	Recruiting
Start date (anticipated):	03-06-2021
Enrollment:	76
Type:	Actual

## Ethics review

Approved WMO	
Date:	23-10-2020
Application type:	First submission
Review commission:	METC academisch ziekenhuis Maastricht/Universiteit Maastricht, METC azM/UM (Maastricht)

Approved WMO	
Date:	11-08-2021
Application type:	Amendment
Review commission:	METC academisch ziekenhuis Maastricht/Universiteit Maastricht, METC azM/UM (Maastricht)

Approved WMO	
Date:	14-11-2022
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	NL72955.068.20