# Attentional demand of walking in post-polio patients: the association with incidence of falls

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| **Ethical review** | Approved WMO |
| **Status** | Pending |
| **Health condition type** | Muscle disorders |
| **Study type** | Observational non invasive |

## Summary

### ID

NL-OMON29899

**Source**
ToetsingOnline

**Brief title**
Dual-task walking in PPS

### Condition

- Muscle disorders
- Neuromuscular disorders

**Synonym**
late effects of poliomyelitis, postpolio syndrome

**Research involving**
Human

### Sponsors and support

**Primary sponsor:** Academisch Medisch Centrum
**Source(s) of monetary or material Support:** Ministerie van OC&W

## Intervention

**Keyword:** Poliomyelitis, Postpoliomyelitis Syndrome, Walking

## Outcome measures

### Primary outcome

Walking performance, assessed with a 2-min walking tests and a dual-task walking test.

The 2-min indoor walking test will be performed on a closed marked indoor trajectory. The indoor oval track has a length of 50 m. Subjects are instructed to walk at a self-preferred walking speed for 2 minutes. The walking distance will be measured.

2) the dual task walking test consists of a 50m walking test combined with a secondary cognitive task. In this test subjects are instructed to walk, on a marked trajectory, a distance of 50m twice at their own speed with their normal walking aid (if needed) without stopping. The first 50m walk will be performed without a secondary task. During the second 50 m walk, subjects will solve orally presented arithmetic problems while walking. Trial duration of each trial will be recorded. The total time of the 2 trials, the difference between the 2 trials and walking velocity at the first 50m walk will be analyzed.

The incidence of falls will be based on the subject*s self report. A questionnaire will be administered, addressing demographic data, frequency of tripping, frequency and description of falls over the last 12 months, their consequences, and community services utilized.

### Secondary outcome

Quadriceps muscle strength will be measured with a Biodex dynamometer.

## Study description

### Background summary

In older subjects, weakness of the lower limbs increases the risk of falls, particularly in situations in which the whole body weight is placed on 1 leg. Persons previously affected by poliomyelitis (polio subjects) commonly have long-standing muscle weakness, often in the lower limbs. These patients are often unstable when standing and walking, and they report frequent falls (Cosgrove et al 1987; Silver and Aiello 2002, Lord et al. 2002). In frail elderly subjects and patients with Parkinson, dual-task walking tests have been used to identify individuals at-risk for falling. It is not known whether dual-task walking tests can predict falls in polio subjects.

### Study objective

The aims of the study are fourfold: 1) to assess dual-task walking performance in patients with late sequelae of polio and compare this to dual-task walking performance of age-matched healthy controls; 2) to investigate the reproducibility of a dual-task walking test
3) to determine the frequency of falls over the last 12 months, circumstances surrounding them, and the consequences of falls and 4) to investigate the association between dual-task walking performance and incidence of falls in patients with late sequelae of polio.

### Study design

Study design: a cross-sectional study.

### Study burden and risks

Patients with late effects of poliomyelitis will visit the department of Rehabilitation AMC twice. During the first visit they will perform the 2 walking tests. Measurement of quadriceps strength will be performed. The questionnaire on fall events will be administered. During the second visit, the walking tests will be repeated.
No risks are associated with performing the walking tests at a self-preferred, comfortable walking speed. Sufficient rest will be provided between the walking tests.

Healthy control subjects will visit the department of Rehabilitation once.
During this visit they will perform the 2 walking tests and quadriceps strength will be measured.

# 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

Patients: 1) diagnosis of poliomyelitis; 2) ability to walk 50 m with or without walking aid.
Controls: good health

## Exclusion criteria

1) impaired vision; 2) hearing loss.

# Study design

## Design

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

## Recruitment

NL

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| Recruitment status: | Pending |
| Start date (anticipated): | 15-04-2006 |
| Enrollment: | 60 |
| Type: | Anticipated |

# Ethics review

Approved WMO

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| Application type: | First submission |
| Review commission: | METC Amsterdam UMC |

# 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 | NL11978.018.06 |