

# Neuromuscular aging in the upper limb in chronic stroke in adults above sixty years - a motor control study

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To show if there is an increase in reflex time as a function of time after stroke (6 months - 10 years after stroke)

<b>Ethical review</b>	Approved WMO
<b>Status</b>	Pending
<b>Health condition type</b>	Central nervous system vascular disorders
<b>Study type</b>	Observational non invasive

## Summary

### ID

NL-OMON32017

### Source

ToetsingOnline

### Brief title

Neuromuscular aging after stroke

### Condition

- Central nervous system vascular disorders

### Synonym

stroke/CVA (cerebrovascular accident)

### Research involving

Human

### Sponsors and support

**Primary sponsor:** Leids Universitair Medisch Centrum

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

## Intervention

**Keyword:** biomechanical, haptic robot, reflex time, stroke/CVA

## Outcome measures

### Primary outcome

reflex time measured from force perturbation experiment

reflex time measured from position perturbation experiment

### Secondary outcome

biomechanical parameters:

1. inertia of the hand ( $\text{g/m}^2$ )
2. viscosity/damping ( $\text{Nms/rad}$ )
3. intrinsic elasticity/stiffness ( $\text{Nms/rad}$ )
4. velocity-dependent reflex gain ( $\text{Nms/rad}$ )

## Study description

### Background summary

Aging/degeneration in the neuromuscular system has been operationalised as reflex time.

Support for this assumption comes from cross-sectional and longitudinal studies showing an increase in reflex time as a function of increase in age.

Reflex time increases after stroke.

Unpublished reports of experiments with reflex time after stroke, done in the laboratory of motion analysis in LUMC suggest an additional increase in reflex time as a function of time after stroke. This effect becomes manifest from around 24 months after stroke.

### Study objective

To show if there is an increase in reflex time as a function of time after stroke (6 months - 10 years after stroke)

## Study design

cross sectional

## Study burden and risks

A single measurement session of 1.5 hours including neurological exam and experiments with a haptic device (robot).

No risks involved.

## Contacts

### Public

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### Scientific

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## Trial sites

### Listed location countries

Netherlands

## Eligibility criteria

### Age

Adults (18-64 years)

Elderly (65 years and older)

### Inclusion criteria

1. ischaemic stroke
2. an NIHSS (National Institute of Health Stroke Scale) score of 2 or 3

## Exclusion criteria

1. Cognitive disorders which may hamper instruction of the subject.
2. Other neurological, spinal or muscular disorders which can distort the results of the study.
3. Inability to activate the wrist flexors or exert a force with the wrist flexors.

## Study design

### Design

**Study type:** Observational non invasive

Masking: Open (masking not used)

Control: Uncontrolled

Primary purpose: Basic science

### Recruitment

NL

Recruitment status: Pending

Start date (anticipated): 01-01-2008

Enrollment: 32

Type: Anticipated

## Ethics review

Approved WMO

Application type: First submission

Review commission: METC Leids Universitair Medisch Centrum (Leiden)

## 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	NL20098.058.07