# Analysis of cervical motion during flexion and extension cinematographic recordings in asymptomatic elderly.

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Investigate if the normal sequence of segmental contributions in the lower cervical spine during the second half of extension (C4-C5 followed by C5-C6, and then C6-C7) is also present in asymptomatic participants between 55 and 70 years of age by...

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

# Summary

### ID

NL-OMON48175

**Source** ToetsingOnline

**Brief title** Cervical Spine Motion in the Elderly.

### Condition

• Other condition

**Synonym** Cervical Spine Motion

### **Health condition**

Wervelkolomaandoeningen

#### **Research involving**

Human

### **Sponsors and support**

**Primary sponsor:** Zuyderland Medisch Centrum **Source(s) of monetary or material Support:** IO 1604 Neurochirurgie Fonds Zuyd

### Intervention

Keyword: Cervical Spine., Elderly., Motion.

### **Outcome measures**

#### **Primary outcome**

Defining the cervical spines\* physiological motion pattern by analysing the

normal sequence of segmental contributions in the lower cervical spine (C4-C5

followed by C5-C6, and then C6-C7) during the second half of extension in

asymptomatic participants between 55 and 70 years of age.

### Secondary outcome

Determine sROM of C4-C5, C5-C6, and C6-C7 by analysing the flexion and

extension cinematographic recordings in asymptomatic participants between 55

and 70 years of age.

# **Study description**

#### **Background summary**

Physiological motion of the cervical spine is a subject of interest for medical specialists. Segmental range of motion (sROM) has been most commonly used to define motion but inter- and intra-variability is large. Therefore, a sequence of segmental contributions in the lower cervical spine during the second half of extension has been defined in healthy participants (uniform in 80-90%). The mean age of these participants was 23.45 years. Since cervical degenerative disc disease occurs more often in elderly patients, it is of paramount importance to study whether this sequence remains present during aging, regardless of losing 0.11 degrees of sROM each year.

### **Study objective**

Investigate if the normal sequence of segmental contributions in the lower cervical spine during the second half of extension (C4-C5 followed by C5-C6, and then C6-C7) is also present in asymptomatic participants between 55 and 70 years of age by using cinematographic recordings. Two flexion and extension cinematographic recordings of the cervical spine with a two-week interval between recordings will be made.

### Study design

Fundamental research.

### Study burden and risks

Participants receive cinematographic recordings twice. There will be no follow-up.

# Contacts

#### Public Zuyderland Medisch Centrum

Henri Dunantstraat 5 Heerlen 6419PC NL **Scientific** Zuyderland Medisch Centrum

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# **Trial sites**

# **Listed location countries**

Netherlands

# **Eligibility criteria**

#### Age

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

### **Inclusion criteria**

1. Age 55-70 years.

2. Ability to actively perform flexion/extension movements of the neck without pain or other symptoms.

3. No history of neck complaints.

- 4. NDI score of 4 or less.
- 5. KS of 3 or less.
- 6. Informed consent.

# **Exclusion criteria**

- 1. Previous surgery on the cervical spine.
- 2. Symptoms of cervical radiculopathy of myelopathy (e.g. positive Lhermitte\*s sign).
- 3. Active infection.
- 4. Immature bone.
- 5. Previous or actual tumorous processes in the cervical region.
- 6. Previous radiation therapy in the cervical region.
- 7. Not able to speak Dutch.

# Study design

### Design

Study type: Observational invasive		
Masking:	Open (masking not used)	
Control:	Uncontrolled	
Primary purpose:	Basic science	

### Recruitment

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NL	
Recruitment status:	Recruitment stopped
Start date (anticipated):	13-11-2019
Enrollment:	11

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#### Actual

# **Ethics review**

Approved WMO	
Date:	30-07-2019
Application type:	First submission
Review commission:	METC Z: Zuyderland-Zuyd (Heerlen)
Approved WMO	
Date:	24-10-2019
Application type:	Amendment
Review commission:	METC Z: Zuyderland-Zuyd (Heerlen)

# **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** CCMO ID NL70381.096.19