# Diagnosis of Scaphoid Fractures and Displacement: Reliability of CT versus MRI A Prospective Study

Published: 01-07-2008 Last updated: 07-05-2024

To assess the diagnostic performance characteriscs of CT versus MRI scanning for suspected scaphoid fractures.

Ethical reviewApproved WMOStatusPendingHealth condition typeBone disorders (excl congenital and fractures)Study typeObservational invasive

# Summary

## ID

NL-OMON31855

**Source** ToetsingOnline

**Brief title** Diagnosis of Scaphoid Fractures CT vs. MRI

# Condition

• Bone disorders (excl congenital and fractures)

**Synonym** scaphoid fracture, wrist fracture

**Research involving** Human

## **Sponsors and support**

#### Primary sponsor: Academisch Medisch Centrum

1 - Diagnosis of Scaphoid Fractures and Displacement: Reliability of CT versus MRI ... 14-05-2025

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

### Intervention

Keyword: CT, MRI, scaphoid, trauma

### **Outcome measures**

#### **Primary outcome**

Each observer (participating members of the COAST study group) will assess the

presence of a suspected scaphoid fracture; and for the evaluation of

displacement study: displacement, translation and angulation of fragments

according to the standard radiological parameters (translation and displacement

>1mm, angulation >15 degrees in lateral view)

#### Secondary outcome

not applicable

# **Study description**

#### **Background summary**

The scaphoid bone is the carpal bone most commonly fractured in wrist trauma. This type of fracture is typical in young male population sustaining trauma during sports or heavy labor duties.

Early fracture detection and diagnosis of suspected scaphoid fractures is of great importance since the vascularity of this bone is a jeopardizing factor in fracture healing. Early detection and adequate treatment can provide predictable and satisfactory rates of healing. In contrast, delay of diagnosis and failure to recognize displacement are important risk factors for non-union of scaphoid wrist fractures. Fractures that are not displaced are considered by most as stable; in addition several studies have demonstrated predictable rates of healing with conservative treatment for this type of fractures. Conversely, displaced fractures are recognized as instable, with a significant risk of non-union if not treated surgically.

This prospective study evaluates the intra- and inter-observer variability of CT\*the most common currently used modality of imaging diagnosis\* versus

MRI-scans in the diagnosis of a scaphoid fracture and in the diagnosis of displacement.

#### **Study objective**

To assess the diagnostic performance characteriscs of CT versus MRI scanning for suspected scaphoid fractures.

#### Study design

All patients that previously had wrist trauma and are clinically suspect for having a scaphoid fracture will be prospectively included in our study when they present within 24 hours after the injury. Twenty scans from non-fractured patients, 20 non-displaced fractures and 10 displaced scaphoid fractures will be the minimal sample size for this study. Scan must be obtained within 72 hours after presentation. All images will be organized in blinded packages and then will be distributed online among member of the COAST study group to determine the presence or absence of a scaphoid fracture and for assessment of displacement.

#### Study burden and risks

Except for the two hours extension of their planned visit for the regular clinical examination of their wrist, there is no further burden for the patients.

# Contacts

**Public** Academisch Medisch Centrum

Meibergdreef 9 1100 DD Nederland **Scientific** Academisch Medisch Centrum

Meibergdreef 9 1100 DD Nederland

# **Trial sites**

# **Listed location countries**

Netherlands

# **Eligibility criteria**

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

### **Inclusion criteria**

All patients that previously had wrist trauma and are clinically suspect for having a scaphoid fracture will be prospectively included in our study when they present within 24 hours after the injury. Scan must be obtained within 72 hours after presentation.

# **Exclusion criteria**

Patients with a known history of:

- \* Prior scaphoid fracture
- \* Perilunate fracture-dislocations of the wrist
- \* Pregnant women

# Study design

## Design

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

### Recruitment

NL

4 - Diagnosis of Scaphoid Fractures and Displacement: Reliability of CT versus MRI ... 14-05-2025

Recruitment status:	Pending
Start date (anticipated):	04-02-2008
Enrollment:	90
Туре:	Anticipated

# **Ethics review**

Approved WMO Application type: Review commission:

First submission 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 CCMO

ID NL21686.018.08