

# MR imaging of acute appendicitis in adults

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Primary Objective: To determine the sensitivity and specificity of MRI in a consecutive series of adult patients suspected for acute appendicitis  
Secondary Objective(s): Is MRI of additional value in adult patients with inconclusive US? And is...

<b>Ethical review</b>	Approved WMO
<b>Status</b>	Will not start
<b>Health condition type</b>	Gastrointestinal infections
<b>Study type</b>	Observational invasive

## Summary

### ID

NL-OMON33952

### Source

ToetsingOnline

### Brief title

MRI appendicitis adults

### Condition

- Gastrointestinal infections
- Ancillary infectious topics

### Synonym

appendicitis

### Research involving

Human

### Sponsors and support

**Primary sponsor:** Medisch Centrum Alkmaar

**Source(s) of monetary or material Support:** Siemens Nederland, subsidie foreest medical school mca aangevraagd

## Intervention

**Keyword:** abdominal, adults, appendicitis, MRI

## Outcome measures

### Primary outcome

Primary outcome measures are the sensitivity, specificity, positive and negative predictive value and inter observer agreement of MRI in diagnosing acute appendicitis as compared to the reference standard. The MRI findings will be compared to the findings at imaging of the standard diagnostic work-up that preceded MRI (US). The diagnostic value of specific MRI characteristics for appendicitis will be calculated. The value of DWI will be analyzed.

### Secondary outcome

Secondary outcome measures are the acceptance of MRI as compared to US by a questionnaire.

## Study description

### Background summary

Acute appendicitis is the most common cause of acute abdominal pain requiring surgery in adults, typically the adolescent. The main cause of appendicitis is obstruction of the appendiceal lumen that leads to diminished lymphatic and venous drainage, which in turn can result in bacterial infection of the appendiceal wall.

Appendicitis presents with periumbilical pain typically descending to the right lower quadrant, as well as nausea and vomiting in 50% of the patients. If presentation is less specific, it can be difficult to differentiate acute appendicitis from other sometimes non-surgical conditions that result in acute abdominal pain. In these cases, additional imaging is necessary to avoid delay of diagnosis or unnecessary surgical intervention. The main complication of a delayed diagnosis is perforation, which can lead to abscess formation, peritonitis, and even death. The prevalence of appendiceal perforation in various adult series ranges from 23% to 73%. Graded-compression US is the

imaging method of choice, and high sensitivity and specificity can be achieved when employed by experienced examiners. However, the appendix is not always visible, especially if the appendix has a retrocoecal location or if the appendix is perforated. When further evaluation is necessary, other cross-sectional imaging modalities play an important role in diagnosis. Clinical guidelines advice a CT-scan in case the US is inconclusive. CT examination in appendicitis has been validated and the number of CT scans performed in the presurgical diagnosis of appendicitis is increasing rapidly. However the lifetime risk of radiation-induced fatal cancer is estimated to be considerably higher for adolescent exposure. There are some publications describing good results with MR imaging of appendicitis in adults, mainly involving pregnant patients. The introduction of ultra-fast sequences shortens the examination time, resulting in a better visualisation of the abdomen, without exposing the patient to radiation.

## **Study objective**

Primary Objective: To determine the sensitivity and specificity of MRI in a consecutive series of adult patients suspected for acute appendicitis

Secondary Objective(s): Is MRI of additional value in adult patients with inconclusive US? And is Diffusion Weighted Imaging (DWI) of additional value in the imaging of adult patients with suspected appendicitis.

## **Study design**

This will be a prospective study performed at the department of Radiology of the Medical Center Alkmaar. 100 consecutive adult patients suspected of appendicitis will undergo ultrasound and MR Imaging.

## **Study burden and risks**

There is no burden or risk with participation of the study.

## **Contacts**

### **Public**

Medisch Centrum Alkmaar

Wilhelminalaan 12

1815 JD Alkmaar

Nederland

### **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

acute right lower quadrant pain

elevated CRP

abdominal tenderness

### Exclusion criteria

recent abdominal operation

contra-indications for MR Imaging

## Study design

### Design

**Study type:** Observational invasive

Masking: Open (masking not used)

Control: Uncontrolled

Primary purpose: Diagnostic

## Recruitment

NL  
Recruitment status: Will not start  
Start date (anticipated): 01-01-2009  
Enrollment: 100  
Type: Anticipated

## Ethics review

Approved WMO  
Date: 17-04-2009  
Application type: First submission  
Review commission: METC Noord-Holland (Alkmaar)

## 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	NL25413.094.08