

Research Project

Name of Institution and department: Leiden University Medical Center,

Department of Radiology and Nuclear Medicine

Link to website: <https://www.lumc.nl/en/afdelingen/radiologie/c.j.gorter-mri-center>

City and Country of Institution: Leiden, The Netherlands

RESEARCH GROUP

The Department of Radiology at the LUMC has both a strong clinical as a research component. The Department houses 13 full professors of Radiology and Nuclear Medicine, with specialties from interventional radiology to hardware development. The goal of the department is to conduct innovative and disruptive research that is translational, clinical as well as sustainable. On a daily basis you will be embedded in the C.J. Gorter MRI Center, a research group that spans a broad range of MRI research topics, aimed at improving MRI methodology for physiological understanding and clinical MRI. In collaboration with Philips we explore the possibilities of midfield MRI at 0.6T with a prototype scanner.

Seeing more with less (titanium implants at 0.6T)

In this project we want to determine the clinical benefits of 0.6T MRI in our clinical routine, especially when considering metal implants in the spine and hip. So far, we have scanned over 10 patients with metal implants in the spine (study ongoing, count June 2026) both at 0.6T and 1.5T with promising results, and we want to prospectively evaluate the image quality and improve the protocol where needed.

OBJECTIVES

- **Determine the clinical value of 0.6T in comparison to 1.5T**
 - Based on the assessment of radiologists
 - Based on the usefulness for neuro- and orthopedic surgeons
- **Find room for improvement in the current protocol.**

APPLICANT'S DUTIES

- **Participation in midfield MRI research group with attendance of group meetings at department of Radiology and Nuclear Medicine, and the C.J. Gorter MRI Center**
- **Attendance of progress meeting with Philips collaborators**
- **Evaluation of patient scans**
- **Participation in performance of patient scans**

- **Report in the form of an abstract or manuscript**

APPLICANT'S BENEFITS

- You will get the opportunity to participate in a running research project where most of the patient scans are performed and data is available to be processed
 - You will be part of a diverse research group (The C.J. Gorter MRI Center)
 - You will be supervised by a team of MSK radiologists and technical researcher
 - You will get the opportunity to write and present an abstract or paper based on the findings
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- Project Leader: Laura Kox (MSK radiologist)
 - Members: Martijn Nagtegaal (postdoc researcher), Ana Navas (MSK radiologist), Prof. dr. Thijs van Osch