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**OCCUPATIONAL EXPOSURE TO MRI-RELATED
ELECTROMAGNETIC FIELDS IN DUTCH HEALTH CARE AND
RESEARCH WORKPLACES**

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Objectives Persons working around MRI systems are exposed to electromagnetic fields (EMF), particularly static magnetic fields (SMF). This can give rise to acute short-lasting symptoms.

In order to provide an overview of the current exposed populations and their exposure situations, we performed an inventory within the health care and research sector throughout the Netherlands.

Methods A questionnaire was sent to 152 MRI departments that owned at least one MRI system, in order to gather information on scanners, (historical trends in) usage, number of persons working near MRI scanners and safety measures in place.

Results We achieved a high overall response rate of 95%. Most MRI scanners in use (56%) had a magnetic field strength of 1.5 Tesla. A trend towards the use of higher-strength systems was visible. An estimated 7000 persons are currently working near an MRI scanner, of which 54% will be exposed to static magnetic stray fields at least once per month. Only 9% of this population is present during image acquisition for more than once per month. Differences in exposure to MRI-related EMF depend mostly on occupation, main application of the MRI department (eg, diagnostic vs research scans) and type of subjects scanned (human vs animals).

Conclusions Approximately 7000 individuals in the Netherlands are currently exposed to stray fields from MRI scanners. The intensity of the exposure is rising due to increasing use of stronger scanners. A study focusing on personal exposure and occurrence of acute symptoms within this occupational population is warranted.