

Laboratory rules for the 3 Tesla MRI at the Leibniz Institute for Neurobiology

All persons wishing to carry out or accompany measurements on the 3 Tesla MRI (doctors and other persons) are obliged to have taken part in the annual safety training in the Zenit or LIN and been trained by specialist employees about the peculiarities of the measurement process and what to do in an emergency. This must be documented by a signature in the device log.

The general rules of conduct explained in the safety training apply:

- Ferromagnetic items of any description must not be brought into the MRI room. In exceptional cases, slightly magnetic measuring devices (e.g. voltmeter, wobble generator) can be used by experts if there is no study participant or other person in the hazard area.
- Once every calendar year, every study participant must complete and sign the latest LIN consent form to ensure that the general study participant insurance held by LIN is valid. This is also required if a study-specific consent form has already been signed in advance.
- The introductory interview must cover previous surgery to rule out there being any metallic objects in the body. In case of doubt (e.g. gall/appendix, knee surgery), the relevant surgical report must be requested and presented to the study supervisor nominated by the CNI in good time **in advance** (see safety instructions). The person carrying out the measurement must cancel the measurement if there is any remaining doubt.
- All study participants must put on ear defenders before all measurements.
- The following personnel requirements apply to all measurements on study participants:
 - At least 2 persons must be present at all times.
 - Both persons must be capable of entering the MRI room at any time (remove all metal). The person carrying out the measurement and the support person must enter the MRI room **before** the study participant. Other persons arriving later may only enter the MRI room **after** the study participant has left.
 - At least one of the two persons or a third person must be able to communicate fluently with the relevant study participant.
 - A German speaker must be directly on-call in order to inform the emergency doctor if required.
- Before entering the MRI room, the study participant must be asked once again whether they have removed all objects about their person (jewellery, watches, glasses, braces/false teeth).

Before the examination, the use of the MRI scanner must be entered in the eGroupWare calendar with a link to the project.

All study participant measurements must be entered in the laboratory log at the time of the examination. This rule does not include phantom measurements. At least the study participant code with sequential number, date, measurement start and end time, protocols measured and a code for the measuring person must be entered (see example sheet).

All measurements (apart from phantom measurements) are saved promptly by Andreas Fügner or Jörg Stadler as tar files to a Dicom server at the LIN. Only images are saved, no spectrums, as these are not accepted by the Dicom server. Phantom measurements are only backed up on specific request. Saved data and phantom measurements are deleted at irregular intervals from the scanner without prior notice when storage space gets low.

Structural changes or new electrical installations in the MRI room must be discussed and agreed at an organisational meeting.

The hardware or software of the MRI scanner's control computer must not be changed.

Only experts are authorised to apply patches, and these must be documented in the device log. Essentially, memory must be freed up again as quickly as possible, as measurements can be disrupted if the hard drive is too full.

Software installations on the stimulus computer and changes to hardware and software must be approved by the special laboratory for non-invasive imaging.

Musterseite für das Laborbuch Probandenmessungen/ Example Page for Laboratory Note Book

Datum/Date

**Probandenkürzel_Fortlaufende Nummer/
Subject ID_Running Number**

Spule/Coil

**Probandenvor- und Nachname/
Subject Sure name + Last name**

Referenzamplitude (V)

Studienname/Study name

**Startzeitpunkt/
Start time**

1. Localizer
2. ...
3. ...
4. ...
5. ...
6. ...
7. usw.

**Endzeitpunkt/
End time**

Platz für Bemerkungen/Störungen → Störungen unbedingt im „Gerätebuch 3Tesla – Störungen und Fehlermeldungen“ dokumentieren und eine Email an joerg.stadler@LIN-magdeburg.de

Space for notes and errors
→ **IMPORTANT:** Please document errors in the “Gerätebuch 3Tesla – Störungen und Fehlermeldungen” and send an email to joerg.stadler@LIN-magdeburg.de

**Unterschrift Operator/
Signature Operator**