

BEST PRACTICE GUIDE: MRI

Who is allowed to make measurements?

To learn more about all requirements you have to meet please read/check:

- CNI [user rules](#)
- the respective [lab rules](#) to each device (to be found in the labs)
- participation in [MR safety briefing](#)

Whom do I want to measure?

- Subjects or patients?
- Who organizes subjects / patients?
 - Subjects can be acquired by LIN/CNI or you do it on your own.
- Can I find enough patients in the period of time planned for my study?
 - Often the search for suitable patients is more difficult and time consuming than expected!
- Which subject characteristics are required?
 - [Contraindications](#) should be checked in every potential subject ahead of scanning.
 - Every subject has to fill in an information sheet prior to each measurement (7 T) / once a year (3 T).
 - In case of any doubts please always contact your PI **prior** to any measurements!
- Which ethics vote is applicable at 7 T? The LIN ethics vote covers healthy subjects from 18 to 65 years. It does not cover:
 - any contrast agents
 - own devices to be used within the scanner, particularly self-made coils and medical products not approved for the field strength

What do I want to measure?

Which stimulation is required?

- [Visual](#): Which field of view is required? Is that attainable?
 - When using a visual stimulation please consider that the brightness of the projector lamp at the 7 T scanner declines over time. It is replaced every 400 hours (about 3 months).
 - Does the subject need glasses? Can the experiment be carried out with MR glasses (+/- 6 diop)? Contact lenses can be used.
- [Acoustic](#): Could the scanner noise disturb your acoustic stimuli? Do the [headphones](#) you wish to use fit into the coil?

Which software do I want to use?

- Do you need software/hardware which is not available at the scanner? In this case please contact us by e-mail to cni@lin-magdeburg.de.
- Which [response device](#) is required?
- Do you need [additional parameters](#) (e.g. physiological data, GSR, EEG, eye tracker)?
- In case you want to use additional devices: Is this covered by the ethics vote? Is an additional insurance necessary?

How long will the measurement take?

- Estimation: 7 T protocol measuring time + 20 minutes
- Recommendation: a measurement should not take longer than 90 minutes.

How do I apply for a study?

- To apply for a study, please use the online [study application](#) on www.lin-magdeburg.de/cni.
- The decision on approval of your application is taken in accordance with the CNI [user rules](#).
- The CNI will inform you via e-mail about approval, and a contact person will be defined.

Do I have funding?

- Please apply for funding of scan time when applying for grants!

- How many subjects / measurements are necessary incl. pilot scans?
- Please keep in mind: Not every measurement is successful, so please plan discard.

How are measurements run?

1. Pilot measurement

1. Test of experimental setup: Does the stimulation run?
2. Does the stimulation wait for the trigger or is it still in simulation mode?
3. Is everything recorded correctly?

2. Subject measurement

- Interview about risks/contraindications is usually conducted by service staff prior to measurement
- In case of any doubt the service staff is authorized to reject measurements and/or to request further documents (e.g. surgery reports) to avoid any risk for the subjects' health.
- Data safety: Please save your data. We only save Dicom files, spectra are not possible!
- Evaluation of pilot measurements. Do protocol / stimulation have to be changed?

3. Measurements

- Clear agreements: Who organizes subjects? Who does the scanning? Who is in charge of running the experiment/paradigm?
- To be checked before measurements:
 - Does the response work?
 - Does the stimulus wait for the trigger?
 - Are all data recorded properly?

What else has to be considered?

- Questions and feedback to CNI
- In case of a substantial contribution of CNI staff to your study, please acknowledge the CNI in your paper:
„We acknowledge the support of the Combinatorial NeuroImaging Core Facility at the Leibniz

Institute for Neurobiology in Magdeburg.”

What to do in case of any irregularities/errors?

Please always report any errors immediately to [CNI staff](#).

Cancellation of measurements

Measurements that have to be cancelled should be indicated by mail to cni@lin-magdeburg.de as soon as possible (see [user rules](#)). This will help provide others with valuable scan time.