- Information MR examination -

Magnetic Resonance Imaging

Department of Education and Psychology

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Dear participant(s),

Magnetic resonance imaging (MRI) provides the possibility for non-invasive diagnosis and observations which cannot be obtained with other methods. Although the procedure has already found widespread clinical application, extensive research is still required to open up new methods and areas of application. This applies in particular to new ways of studying the human brain.

Today, about twenty years after the introduction of MRI, around 60 million examinations are carried out annually worldwide and there have been no adverse side effects or after-effects. To the best of our knowledge, no adverse effects are expected from the experimental conditions we use.

**Investigation**

**Magnetic resonance imaging does not use X-rays or radioactive materials.** During the examination, your body is in a magnetic field. Radio wave pulses with FM (frequency modulated) frequencies produce echo signals that are picked up by sensitive antennas. A computer uses this information to calculate sectional images of your body, known as a magnetic resonance spectrum. The examination is carried out in a special shielded room to avoid interference from local radio transmitters. You lie on a bed which slides into the device’s opening, about 65 cm in diameter. Depending on the research question, the examination can last between half an hour to two hours. The magnetic field and the scanner itself are normally unnoticeable, but you will hear the typical functional knocking caused by the switching on of weak magnetic fields. During certain examinations, nerves may be stimulated which can lead to a slight "tingling" or "muscle twitching". This rarely occurs and does not pose any danger to you.

**During the examination, you should lie calmly and relaxed and do not move. Especially important is that you keep your head still. At any time during the experiment, you can contact the examiner, who can also see you, via an emergency button and intercom system. If possible, however, you should wait for a pause between measurements.**

**Safety and security**

Before you enter the examination room, it is absolutely necessary to remove all metallic objects that are on your body, on your clothes, or in your pockets (e.g., mobile phones, coins, pens, keys, hair clips, watches, jewellery, glasses, belts, hearing aids). Cheque cards with magnetic strips must also remain outside the examination room, otherwise they will be erased by the magnetic field. The examination itself is a completely harmless procedure. For certain risk groups, e.g., persons with metal parts in their body (implants), with a severely damaged cardiovascular system or under the influence of certain drugs, however, it sometimes houses considerable dangers. For example, bone screws may be twisted in the magnetic field, vascular clips may be loosened, or the cardiovascular system may be overloaded. In order to exclude a danger for you, you receive a questionnaire from us, which you will please thoroughly and conscientiously read and fill out.

Within the scope of this MRI examination, no doctor-patient relationship is established, and no clinical diagnosis is carried out. The MRI examinations carried out within the framework of the scientific study serve exclusively scientific purposes and do not satisfy the criteria of comprehensive diagnostics. Therefore, actual clinically relevant deviations from the norm may not be detected.

However, there is a possibility that signal anomalies may be detected during the scientific analysis of the data. In this case, the researcher arranges for a neuroradiological expert to determine whether the findings require additional tests or clarification. In the unlikely event of a finding requiring clarification, you will be informed about the finding by employees of the Centre for Cognitive Neuroscience Berlin (CCNB).

In our experience, the probability that an MRI examination finding requires treatment is very low (approx. 1 in 1000). Nevertheless, such findings can have medical, professional, and other social consequences. If a pathological finding is made after detailed neurological diagnostics, there is, for example, an obligation to notify private health insurance or life insurance providers. Furthermore, a neurological diagnosis may result in psychological stress.

**Data storage and data protection**

Your consent to participate in the study and the MRI examination includes our legal basis for the collection and storage of your personal data. The data consists of your name, date of birth, height, weight, your answers to the MRI questionnaire, and all MRI image data collected during the study.

The collected MRI image data is stored in a pseudonymous form under the indication of a letter-number-code independent from your name. The assignment of data to your name can only be done via the internal database of the CCNB. This database is secured according to current standards and is subject to strict access control. In accordance with the currently valid guidelines, the data collected is stored at the CCNB for 10 years and is then deleted. In anonymized form, the data may be stored beyond that period by the respective examiner/s. In this anonymized form, it is no longer possible to relate the data to a specific person.

At any time, you have a right of information regarding the personal data stored about you. Please contact the CCNB staff for more information ([fmri\_study@ewi-psy.fu-berlin.de](mailto:fmri_study@ewi-psy.fu-berlin.de)).

At any time, you have the right to delete or correct or restrict the processing of your collected personal data, if this is possible at that time. You can revoke your declaration of consent at any time without giving reasons. For the revocation of your consent or the deletion of your personal data, please contact the CCNB staff ([fmri\_study@ewi-psy.fu-berlin.de](mailto:fmri_study@ewi-psy.fu-berlin.de)).

For further questions regarding data protection, please contact the data protection officer of the Freie Universität Berlin, Dr. Karsten Kinast ([datenschutz@](mailto:datenschutz@)fu-berlin.de).

You have the right to lodge a complaint with the responsible data protection supervisory authority (Berliner Beauftragte für Datenschutz und Informationsfreiheit, Friedrichstraße 219, 10969 Berlin, [mailbox@datenschutz-berlin.de](mailto:mailbox@datenschutz-berlin.de)).

Please ask us if you did not understand something or if you want to know more about the examination method. We will be happy to give you further information and answer any questions you may have.