

Localizing the speech areas of the brain with navigated transcranial magnetic stimulation

Navigated transcranial magnetic stimulation is used in mapping the areas in the cerebral cortex that are crucial for speech functions. Most commonly this localization is used pre-operatively for patients with brain tumors or epilepsy to identify the location of the speech area in relation to the area of the brain that is to be operated on.

The examination will take 2 to 3 hours.

Before the examination

- Your hair should be clean. Do not use any hair styling products.
- Remove jewellery and other metal objects from your head and neck.
- Do not use moisturizer on your skin before the examination.
- You may eat and drink as usual prior to the examination and treatments. You may also take your prescribed medication according to your doctor's instructions. Please take information about your medication with you to the examination.

During the examination

You will be sitting down during the examination. Surface electrodes that measure muscle activity are attached on the skin of the upper limbs, on top of muscles. A so-called stimulation coil will be moved around near the head to activate the motor cortex. The surface electrodes measuring muscle activity

are used to register muscle responses that correspond to motor cortex activation.

After mapping of the motor cortex, the actual speech area is localized. A motion sensor will be attached to your neck. You are shown pictures on a monitor which you will name out loud.

The examination has no aftereffects.

Contraindications for the examination

The examination cannot be performed if you have

- a pacemaker
- a central nervous system stimulation device
- an inner ear prosthesis
- metal objects, such as clips, in the head area
- an artificial heart valve made of metal
- an insulin pump
- or, if you are pregnant.

After the examination

You will receive the results of the examination from the doctor who treats you.

If you do not know how to find out the results, please contact the outpatient clinic or ward that referred you to this examination.

Other things to note

Please take your Kela-card or identification with you.

You will not be charged for the examination separately.

Cancel the appointment if you cannot come.

If you do not cancel, you will be charged a fine.