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Providing the highest level
of comprehensive epilepsy
care to patients throughout
their lifetime.

What is MSI?

Magnetic source imaging (MSI) is a noninvasive imaging tool used to locate abnormal brain activity, which can help determine the source of seizures. MSI also maps where important functions are controlled in the brain, like listening and talking.

How does MSI work?

MSI uses two important technologies:

- Magnetoencephalography (MEG)
- Magnetic resonance imaging (MRI)

MEG measures subtle magnetic fields associated with the brain's electrical currents. This can help to identify areas of seizure onset and to locate various brain functions. MRI completes the picture by showing brain structure. MSI refers to the combination of MEG and MRI.

Why get MSI?

MSI is often used as a pre-surgical evaluation tool for epilepsy and brain tumor patients. The service helps providers create successful surgery care plans for patients.



Before MSI:

Tell your doctor if you have any of the following:

- Neurostimulators (RNS, DBS or VNS)
- Pacemaker
- Defibrillator
- Hearing aids
- Any other metal in your body (including some dental work such as caps, retainers, etc.)

Avoid wearing clothes that have metal, such as zippers, metal hooks, snaps or underwire bras.

Arrive without makeup or hair products.

Do not wear jewelry during the study.

Eat, drink, and take your medications as you normally would (unless told otherwise by your provider).

During MSI:

EEG & MEG are usually recorded simultaneously. After EEG electrodes are mounted, an MSI technician will place removable markers on your head. Sensors may be placed on other areas of the body, including your arms or legs.

An MSI recording helmet will be placed on your head in order to record your brain's electrical activity.

During the recording, you will be asked to lie down on your back. You could be asked to perform tasks, such as looking at pictures, listening to words, or doing hand motions.

How long will the study take?

The MSI study typically lasts 1 to 2.5 hours, but it may take up to 4. You are expected to remain as still as possible (unless instructed otherwise) – do not move your head or neck.

What if I have a seizure during the study?

If you have a seizure during the MSI study, providers will take proper safety precautions. They will ask you to remain as calm and still as possible.

Will MSI hurt?

MSI imaging is noninvasive and painless.

