

MRI: Spectroscopy Scan

How to prepare and what to expect

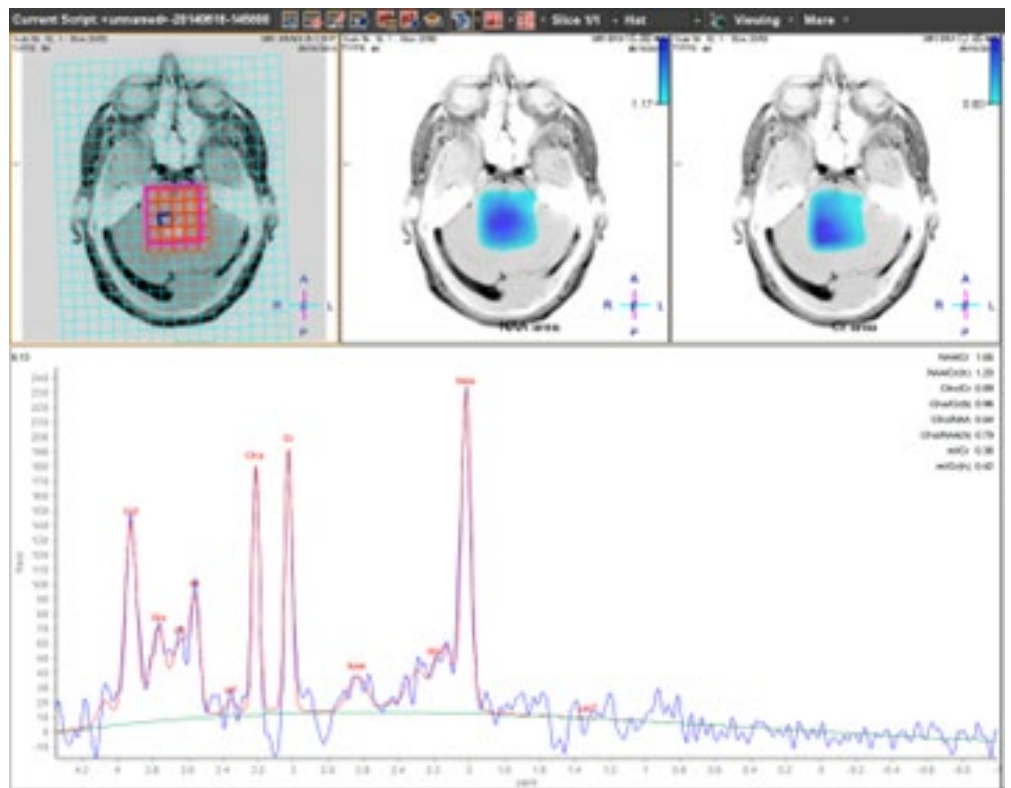
This handout explains how an MRI spectroscopy scan works, how to prepare, what to expect during the scan, and how to get your results.

What is an MRI scan?

Magnetic resonance imaging (MRI) is a way to take pictures of your internal organs and tissues. It uses radio waves and a strong magnet to provide clear and detailed pictures. Even different types of tissue within the same organ are easily seen in an MRI image.

What is spectroscopy?

Spectroscopy measures chemical changes in the brain. It is often used to diagnose a brain tumor. This test can also be used to find tissue changes in stroke and epilepsy.



An MRI spectroscopy scan takes images of the brain and also creates a graph that shows the activity of the brain tissue.

An MRI spectroscopy scan creates graphs that show the *metabolites* in the tissues. Metabolites are the byproducts created by cells as they break down food and use it for energy (*metabolism*).

The graphs show what tissues are normal and what tissues are abnormal. These graphs can help your doctor know if a tumor is growing or dying.

How does the scan work?

Most MRI scans involve taking several sets of images. Each set will show a different cross-section of your brain or a different area in your brain. It takes 1 to 8 minutes to take each set.

For Your Safety

Health Review

We need to know about certain **health conditions** before giving you an MRI scan. Please tell us if you:

- Have any problems with your liver or kidneys, or need a liver or kidney transplant
- Are on dialysis
- Have allergies to any drugs or *contrast* (X-ray dye)
- Have had any surgeries

Screening for Metal

If you have any metal on or in your body, an MRI can harm you.

The strong MRI magnet will pull on any *ferromagnetic* object, such as iron and some other metals.

This is why we need to know if you have any metal in or on your body before we give you an MRI scan. Even small amounts of metal that will not harm your body can ruin the MRI image.

Please tell our staff if you have:

- Aneurysm clips, heart pacemaker, artificial heart valve, implanted port, infusion catheter (such as Port-o-cath, Infusaport, or Lifeport), intrauterine device (IUD), prosthetic hip, plates, clips, pins, or screws, surgical staples, or any other implanted metal object
 - Most times, surgical staples, clips, plates, pins, and screws do not cause problems during MRI if they have been in place for more than 4 to 6 weeks. If needed, we may do an X-ray to check for metal.

- Tattoos or permanent eyeliner
- Medicine patches
- A bullet or *shrapnel* (piece of metal) in your body
- Ever worked with metal
- Tooth fillings or braces
 - Dental work is not usually affected by the MRI, but fillings and braces may affect pictures of the face or brain.

How do I prepare?

- Please talk with your referring provider if you have any concerns about managing pain or anxiety during your MRI scan.
- *Women:* Tell your provider if you are pregnant or breastfeeding, or if there is any chance you could be pregnant.

On the Day of Your Scan

- **Remove anything that might contain metal.** This includes:
 - Makeup or nail polish
 - Hairpins
 - Jewelry
 - Glasses and hearing aids
 - Any dental work you can remove
- You must change into a hospital gown before your scan. We will give you a gown when you arrive in the MRI department.
- If you have an insulin pump or a patch that delivers any type of drug, we will ask you to remove it.
- *Women:* Before the scan begins, tell the technologist if there is any chance you could be pregnant.

What happens during the scan?

- You will lie on a sliding table. We will place a device called a *surface coil* (antenna) around your head.
- The technologist will move you inside the MRI scanner, then leave the room to take the pictures.
- During the scan, you will hear very loud tapping or knocking noises. In between the sets it is quiet. During this quiet time, you may talk with the technologist through an intercom.

- The scan usually takes about 45 to 60 minutes to complete. Some studies may take longer if more pictures are needed.
- You need to lie very still while each set of scans is being done. Any movement will affect the results.
- Some patients need an injection of contrast to make certain tissues or blood vessels easier to see. If you need contrast for your scan, a material called *gadolinium* will be injected about 30 minutes after the scan begins. It will be injected through a small *intravenous* (IV) line in your arm or hand vein.
- After the scan, we will ask you to wait while we check the pictures for quality. We will take more pictures if needed.

What will I feel during the scan?

- MRI does not cause pain.
- Some patients may feel anxious (*claustrophobic*) when they are inside the MRI unit. Please tell the doctor who referred you for the MRI if you are claustrophobic. You may receive medicine to help you relax.
- You may feel warmer during the MRI scan. This is normal. If you start to feel uncomfortable, please tell the MRI technologist.
- If a contrast injection is used, you may feel discomfort at the needle site. During the injection, you may also feel coolness at the site or smell or taste something. These side effects will go away quickly.
- You will hear loud tapping or knocking noises during the scan. We will provide earplugs or headphones with music to help block some of these sounds.

Who interprets the results and how do I get them?

A radiologist skilled in MRI will review and interpret your MRI images. The radiologist will not talk with you about the results, but will send a report to your primary care provider or referring provider. Your own provider will give you the results.

You and your provider will then decide the next step, such as treatment for a problem, as needed.

You may also read your results on your MyChart page. If you need copies of your images on disc, call 206.598.6206.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

- UWMC Imaging Services:
206.598.6200
- HMC Imaging Services:
206.744.3105