

## MRI: Spectroscopy Scan

### *What to expect and how to prepare*

*This handout explains how an MRI spectroscopy scan works, how it is done, how to prepare, what to expect, and how to get your results.*

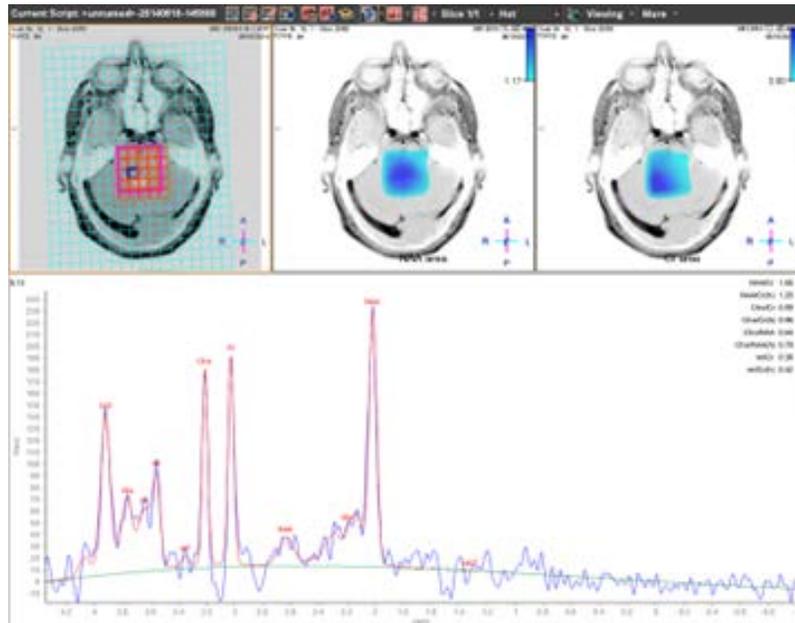
### What is an MRI spectroscopy scan?

*Magnetic resonance imaging (MRI) uses radio waves and strong magnets to take pictures of the organs and tissues of the body. An MRI spectroscopy scan also creates graphs that show the *metabolites* in the tissues. Metabolites are byproducts created by cells as they break down food and use it for energy (*metabolism*).*

The spectroscopy 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?

An MRI scan most often involves taking several sets of images. Each set lasts from 1 minute to 8 minutes. When done, each set will show a different cross-section of your brain or a different area within your brain.



*An MRI spectroscopy scan takes images of the brain and also creates graphs that show the activity of the brain tissue.*

## For Your Safety

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
- Need a liver or kidney transplant
- Are on dialysis
- Have allergies to any drugs or contrast material
- Have had any surgeries
- Are pregnant or may be pregnant

We also need to know if you have any **metal in or on your body** before we give you an MRI scan. The strong MRI magnets will pull on any *ferromagnetic* object, such as iron and some other metals.

Please tell MRI staff if you have any of these in your body:

- 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 it is possible that metal fragments in your body will cause problems with the MRI, we may first do an X-ray to check for them.
- 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.

Please also **remove any other items that might contain metal** and affect your MRI pictures. These include:

- Hairpins
- Jewelry
- Glasses and hearing aids
- Any dental work you can remove

## How is the scan done?

- You will change into a hospital gown.
- You will lie on a sliding table and a device called a *surface coil* (antenna) will be placed around your head.
- The technologist will move you inside the MRI scanner, then leave the room to take the MRI 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 spectroscopy 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 material* 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, you will be asked to wait until the pictures are checked for quality. More pictures will be taken 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, but 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. You may also feel coolness at the site during the injection, or smell or taste something. These side effects will go away quickly.
- For many patients, the loud tapping or knocking noises during the scan are annoying. We will provide you with earplugs and headphones with music.

### Questions?

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

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

## 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 doctor. This doctor will give you the results.