

### 1. What is the Exam like?

The exam usually takes 30 to 60 minutes. It consists of several image exposures lasting 2 to 5 minutes each.

You will be asked to remove your make-up, eyeglasses, watch, jewelry, credit cards, dentures, hearing aids and any other metallic objects you are carrying.

The technologist will position you on a cushioned table. A device called a 'coil' may be placed over or under you. This helps the MRI system create the clearest possible image of your body. When you are comfortably positioned, the table will move into the space in the centre of the magnet. The technologist will then step into the control area and will stay in constant contact with you both visually and through an intercom. As the exam proceeds, you will hear a thumping sound for several minutes at a time. Other than the sound, the MRI causes no bodily sensation.

Relax and try to lie as still as possible. Any movement during the scan could blur the image. When the exam is done, the technologist will help you off the table.

### 2. Will I feel anything during the scan?

The MRI scan is completely painless and comfortable. In certain cases, an injection of a contrast agent may be used to better visualize the area of interest as specified by your physician. The contrast material used during an MRI scan typically has few or no side effects.

### 3. Will I need an injection?

In most cases an MRI exam does not require any injections. In some situations, a substance known as a contrast agent may be needed to enhance the ability of the MRI to see into your body. All contrast agents are considered safe.

### 4. Are there any reasons I should not have the scan done?

There are a few conditions which would prevent you from being eligible for an MRI scan. They include:

- Pacemaker
- Neuro-stimulator (tens-unit)
- Ferrous intracranial aneurysm clips
- Implanted drug infusion device

In addition, the follow conditions may affect your scan. Please let the technologist know if you have any of the following:

- Metal implants
- Surgical staples
- Foreign metal objects in eye, or removed from eye  
Σ If you have ever been a sheet metal worker or machinist
- Shrapnel, bullets, or bullet wounds
- Tattoos
- Intrauterine devices (IUD)
- If you are pregnant

### 5. Do I need to prepare for the exam?

There is no special preparation required and you may eat and drink normally prior to the scan.

### 6. How long does the MRI scan take?

The exam can last from 30 minutes to usually no more than one hour.

### 7. What if I am claustrophobic?

CMI utilizes the only Open Bore high field MRI scanner available in the Province. Our scanner permits more than sixty percent of all scan to be conducted with the patient's head outside the magnet which greatly eases the feeling of claustrophobia. However, very anxious patients and small children may be given a sedative to help them relax and lie still during the exam. If you think you will require a sedative, please discuss this with your physician and arrange it prior to your appointment.

**Aneurysm Clips** - Most experts agree that patients who have had surgery for a brain aneurysm should never have an MR study. The clips used for brain aneurysms (even modern clips) may react to the magnetic pull. Other aneurysm clips are safe to be scanned, just not the ones in the brain.

**Back Brace** - This must be taken off prior to the MR scan.

**Cardiac Bypass Surgery** - Sometimes cardiac pacing wires are left in place after heart bypass surgery. It is very important for us to know if these wires are present. Pacing wire presence can be determined by having a recent chest x-ray reviewed. When you pre-register let us know if you have had heart surgery, and you will be informed if a chest x-ray review is needed.

**Contact Lenses** - It is safe to wear contact lenses if you can lie comfortably with your eyes closed.

**Dental Work** - This may cause an artifact (i.e. loss of picture information), but is safe for scanning. However, if you have an unusual amount of dental hardware and we are doing a scan of the head, some of the pictures may be affected. Dentures may need to be taken out for certain studies and you will be provided with a cup to put them in. Caps, crowns, pins, permanent wires, etc. can be scanned without a problem.

**Eye and Ear Surgeries** - If you have had any eye or ear surgery, please notify us during your screening. There are certain eye/ear surgeries in which a metal implant is used and may cause harm to the patient, although most are safe. We may need to get the operative report or talk to the surgeon's office. In some cases, an x-ray can identify metal implants if there is a question about this.

**Eye Shadow** - Some eye makeup has a metallic base and may cause your eyelids to flutter. Therefore, if you are having a study done of your head, please remove all eye makeup before coming to the MRI centre.

**Facial Reconstruction** - Any facial reconstruction, especially near the eyes, needs to be followed up on by one of our staff. We may need to get an operative report or a skull x-ray to verify the location of any implants or wires.

**Groshong Catheter** - This is usually safe to scan, however some of them have a small metal clip which needs to be removed prior to the scan.

**Halo** - This is a type of neck immobilizer, which may or may not be MR compatible, so it is important to tell the scheduler if you are in a halo.

**Hearing Aids** - These must be taken off during all scanning procedures.

**Heart Valves** - Some heart valves are safe to scan; but some are not. Sometimes cardiac pacing wires are left in place after heart bypass surgery. It is very important for us to know if these wires are present. Pacing wire presence can be determined by having a recent chest x-ray reviewed. When you pre-register let us know if you've had heart surgery, and you will be informed if a chest x-ray review is needed.

**Hernia Mesh** - This is safe and will not cause you any harm, even if it is metal.

**Embedded Wires/Stimulators/Batteries** - These are put in for muscle problems, among other things. They can never be scanned and could cause bodily harm.

**Implanted Electrodes, Shunts, Pumps, or Other Electrical Devices** - Some of these are safe and some are not. Please be sure to tell the scheduling secretary if you have one of these and we will confirm whether it is safe for you to have the scan.

**Intrauterine Device (IUD)** - Currently there are no known contraindications for an IUD.

**Joint Replacement** - If you have a hip replacement, knee replacement, etc., this is usually safe to scan. If the joint replaced is the joint being scanned, we do need the operative report because the images may not be optimal if there is a metal implant. However, it will not harm you to be scanned.

**Leg Brace or Prosthesis** - These need to be taken off prior to the MR study.

**Lens Implants** - Orbital lens implants are not a problem.

**Limb Replacement** - If a patient has a removable prosthetic device, it will need to be removed during the scan since most of them have metal components. If it is permanent, it will not cause you harm, however we should still be made aware of it.

**Medication Patches** - Medication patches, such as nitroglycerin, birth control, or nicotine patches must be removed prior to scanning because some of them have a small metal wire inside and could cause injury.

**Nitroglycerin Patch** - We can never scan a patient with a nitroglycerin patch. It must be removed prior to scanning because they have a small metal wire inside and could cause injury.

**Orbital Implants** - Lens implants from cataract surgery are safe. Artificial eyes may need to be taken out prior to your study if they are removable. Please inform the scheduler if you have an orbital implant when reviewing the screening questions.

**Pacemaker** - We can never scan a patient with a pacemaker. The magnetic field would severely impair the function of the pacemaker. If you have a cardiac pacemaker, we will need to cancel your MR study and you should follow up with your doctor to find an alternative diagnostic study.

**Penile Implants** - Some penile implants may have metal components and we will need to find out the manufacturer and serial number of the implant. This can most often be obtained from the operative report.

**Pins/Screws/Wires** - These metals, if surgically implanted because of broken bones, are generally no problem. However, if the metal wire/pin, etc. is put in place for any other reason, these should be reviewed on an individual basis. Most of these are safe to scan; however, some of them may cause problems for you so it is important to notify the scheduler of any metal implants.

**Pregnancy/Breast-feeding** - We normally do not scan pregnant women. If you think you might be pregnant, you must have a negative pregnancy test done or wait until your menstrual period before we can perform the scan. If you are breast-feeding, an unenhanced routine MRI/MRA is not a problem. However, if your scan is enhanced, you should plan to bottle-feeding the baby for 48 hours after the scan until the contrast material has passed through your system. There are no known side effects; but breast-feeding is not recommended for 48 hours following enhancement.

**Previous Metal in the Eyes** - If you have ever had any metal chips or fragments in your eyes from welding, grinding, or any accidents of any sort, an eye x-ray must be taken prior to the study. Even if the metal fragment was taken out, or came out on its own, or if it occurred a long time ago, an x-ray is the only way to confirm that there are no fragments remaining. This is important because if there are any small fragments in the eye, it could potentially damage the eyes. We will arrange these orbital x-rays prior to your scan. If there is any question about whether there may be metal in your eye, the x-ray must be taken.

**Rings** - Rings are okay to keep on if they are difficult to get off. They will not be affected by the magnetic field and will not cause the patient any harm during the scan. One exception might be if we are scanning a hand or wrist since metal near the area of the scan may cause artifact or interference in the imaging. Earrings will need to be taken out, as will nose rings, lip rings, tongue studs, and other body piercings, etc.

**Rods in the Back** - These may cause artifact; but will not cause you harm. Depending on how big the rods are and the area we are scanning, this may/may not affect the results of your study.

**Shrapnel** - Shrapnel may present a problem. It is important to review each individual case with our staff. Depending on the location of the shrapnel, you may or may not be able to be scanned.

**Tubal Ligation** - Clips are no problem.

**Tubes in the Ears** - Tubes in ears (for recurrent infections) are safe.

**Vasectomy** - Any related clips are no problem.

**Vena Cava Umbrella** - We need to review an operative report regarding this implant. Some of these are not MR compatible.

**Wires in the Chest from Heart Surgery** - Although sternal wires are no problem during an MRI scan, sometimes cardiac pacing wires are left in place after heart bypass surgery. It is very important for us to know if these wires are present because they can cause you injury if certain types of MRI scans are being done. Pacing wire presence can be determined by having a recent chest x-ray reviewed. When you pre-register, let us know if you've had heart surgery, and you will be informed if a chest x-ray review is needed.