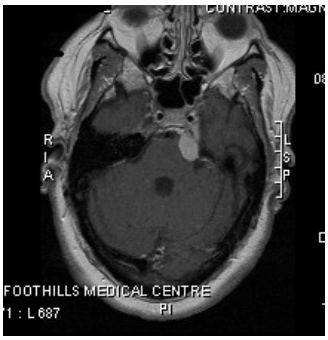
## *MRIs*

***What is an MRI?***




Magnetic resonance imaging (MRI) uses radiofrequency waves and a strong magnetic field rather than x-rays to provide remarkably clear and detailed pictures of internal organs and tissues. *Example of an MRI shows a tumor on the trigeminal nerve*

Because the MRI can give such clear pictures of soft-tissue structures near and around bones, it is an excellent choice to look at structures inside the skull.

No radiation exposure is involved with an MRI.

***How should I prepare for the procedure?***

Because the strong magnetic field used for MRI will pull on any ferromagnetic metal objects implanted in the body, MRI staff will ask whether you have a prosthetic hip, heart pacemaker (or artificial heart valve), implanted port, infusion catheter (brand names Port-o-cath, Infusaport, Lifeport), intrauterine device (IUD), or any metal plates, pins, screws or surgical staples in your body. In most cases surgical staples, plates, pins and screws pose no risk during MRI if they have been in place for more than four to six weeks.

Tattoos and permanent eyeliner may also create a problem. You will be asked if you have ever had a bullet or shrapnel in your body or ever worked with metal. If there is any question of metal fragments, you may be asked to have an x-ray that will detect any such metal objects.

Tooth fillings usually are not affected by the magnetic field but they may distort images of the facial area or brain, so the radiologist should be aware of them. The same is true of braces, which may make it hard to "tune" the MRI unit to your body. You will be asked to remove anything that might degrade MRI images of the head, including hairpins, jewelry, eyeglasses, hearing aids and any removable dental work.

The radiologist or technologist may ask about drug allergies and whether head surgery has been done in the past. If you might be pregnant, this should be mentioned.

Some patients who undergo MRI in an enclosed unit may feel confined or claustrophobic. If you are not easily reassured, a sedative may be administered. Roughly one in 20 patients will require medication to reduce the anxiety associated with claustrophobia.

***How is the procedure performed?***

The patient is placed on a sliding table and positioned comfortably for the MRI examination. Then the radiologist and technologist leave the room and the individual MRI sequences are performed. The patient is able to communicate with the radiologist or technologist at any time using an intercom.

Depending on how many images are needed, the exam will generally take 15 to 45 minutes, although a very detailed study may take longer. You will be asked not to move during the actual imaging process, but between sequences some movement is allowed. Patients are generally required to remain still for only a few seconds to a few minutes at a time.

Usually people with TN will be given a contrast material (gadolinium) to enhance the visibility of tissues or blood vessels. This is given intravenously about 2/3 of the way through the exam.

***What will I experience during the MRI procedure?***

MRI causes no pain but some patients can find it uncomfortable to remain still during the examination. Others experience a sense of being "closed in," though the more open construction of newer MRI systems has done much to reduce that reaction. You may notice a warm feeling in the area under examination; this is normal but if it bothers you the radiologist or technologist should be notified.

If a contrast injection is needed, there may be discomfort at the injection site and you may have a cool sensation at the site during the injection. Most bothersome to many patients are the loud tapping or knocking noises heard at certain phases of imaging. Ear plugs may help.

Open MRI machines


The very newest MRI machines have open sides and leave more space between the machine and the patient.

Gadolinium

Gadolinium is a chemical element used as a contrast agent to make the MRI scans turn out better. About 30 million people every year receive gadolinium.

There are many people on social media with claims of illness caused by Gadolinium. Chuck Norris, for example has filed a law suit against claiming that his wife has gadolinium deposition disease from medical scans taken five years ago. The FDA announced that it had reviewed scientific studies and identified "no harmful effects" associated with the contrast lingering in brain tissue in people with normal kidney function.

There are a few people who may have an allergic reaction to the dye. Some people also feel a warm sensation after the drug is injected. Most people do not have any reaction and the dye is removed from your body within 24 hours via the urine.

Here in Calgary you need to have a pre-scan blood test to prove adequate kidney function before they will do an MRI with the dye.

This can be a caution not to believe everything you read on-line even if the information comes from a movie star.