

When seeking the services of an MRI facility you have choices. Whether you are considering being imaged at CMI or another clinic, there are important questions to ask to ensure that you are receiving the very best that MRI imaging has to offer.

Within the imaging community, there is considerable variability with respect to technology, the protocols and sequences that are used to obtain your images and perhaps most importantly, the technicians and radiologists who administer, read and report your images.

Other considerations include the quality of the service that you receive and the manner in which your findings are reported to you.

You may find the answers to these questions helpful in searching for an imaging facility that best suits your needs.

What type of technology/equipment does the facility use?

The type of MRI scanner used will directly impact the quality of image being produced and is one of the critical components of image quality. If you wish the best images available it is imperative that the technology being utilized is “high-field”. A high-field scanner has the ability to discern anomalies in far greater detail than low-field/extremity magnets and is particularly important when imaging the brain and core of the body. True high-field MRI machines are those with a magnetic field of 1.5 Tesla or greater. In addition, as MRI technology changes & advances quickly ask if the machine is more than 5 years old and, if so, ask if it has undergone a major hardware/software upgrade to keep current.

Does the clinic have the right hardware for the scan?

If you need a brain, shoulder, knee, foot, wrist, breast, chest or abdomen scan make sure the clinic has a dedicated coil (a piece of hardware the scanner uses to pick up signal) for that particular area. Some clinics use an all-purpose coil in place of a coil dedicated to the body part and if so that will negatively impact image quality and therefore the diagnostic accuracy of the examination.

What specific protocols will be utilized in your scan?

A high-field MRI scanner can be programmed with hundreds of commands. A protocol is the name for the series of commands and sequences a clinic programs into their machine to scan different areas of the body. These protocols can differ significantly between clinics and can materially affect the information obtained and therefore diagnostic confidence of your scan. Take for example the MRI evaluation of post traumatic changes in the brain. In the peer reviewed literature it has been established that particular sequences (2mm Gradient T2* & SWI) are most sensitive for the detection of small hemorrhages that can occur in trauma. Yet most public and private facilities do not include these sequences limiting the sensitivity of the examination. The same protocol issues are true for many other parts of the body.

Are the Radiologists who read the scans hospital-based & specialized in the area of the body that they are reading?

The importance of the qualifications and the ability of the radiologist who reads the scans cannot be overstated. Radiologists who are hospital-based or directly affiliated with a teaching-based hospital have extensive experience garnered through the thousands of scans they have reviewed in their time working at the hospital. In Canada, radiologists who have not spent a significant time on staff at a hospital reading MRI will not have had the same opportunity to gain the requisite experience.

Another critical consideration is whether the radiologist reading your scan is specialized in reading images in that area of the body. Due to the broad scope of radiology many radiologists have specialized training or experience in particular body parts. For example, a radiologist may be primarily focused on the interpretation of neuroimaging examinations but not be involved in the interpretation of chest, abdominal or pelvic imaging. Increased experience and expertise in a particular area will improve the accuracy of the reporting radiologist in this particular area.

Is the scanner being used an “open or wide-bore” design?

Patients now have the opportunity to seek out the new generation “open or wide-bore” designed scanners that, for example, CMI utilizes. These scanners provide approximately twice the room in the magnet than traditional high-field scanners and because of their shorter length of tunnel (4ft as opposed to 8ft) more than 60% of exams are performed with the patient’s head outside of the magnet. Without sacrificing anything in image quality, open bore scanners significantly reduce feelings of anxiety or claustrophobia. These wide-bore scanners can comfortably accommodate patients up to 550 lbs as opposed to the weight limit of 300 lbs in traditional magnets.

Open-bore scanners should not be confused with “Open” scanners which are typically open on 3 sides and are low field magnets (1.0 Tesla or less) which, though comfortable, provide inferior image quality.

How does the clinic report its findings?

It is important for a MRI facility to work in partnership with your referring physician. The communication between the referring physician and the radiologist should be open and readily accessible. Your referring physician has the most familiarity with your personal and medical history, and is the best person to report back to you the results of your imaging. In this way, you and your physician will have the opportunity to review your findings together, discuss how the results may be related to your medical history and discuss potential treatment options with you.

In the interest of speed of reporting, some clinics offer the radiologist to review your results with you immediately following your scan. While a radiologist is likely able to review your results (the radiologist on site may not be the one who specializes in the area you had scanned), they lack the critical personal and medical information specific to each patient (such as your relevant history and/or previous images and tests) to be able to properly discuss your results.

A respect for continuity of care and partnership with the referring physician are important factors to consider when choosing a clinic.