

## **Adult Magnetic Resonance Imaging Examination**

### **Introduction**

Magnetic Resonance Imaging (MRI) is a safe, accurate, no radiation and painless imaging modality. It utilizes a strong magnetic field, radiowaves, and state of the art computer technology to produce excellent images and provide diagnostic information for suspected pathology in different parts of the human body.

### **Before Examination**

- Unless otherwise specified in the appointment sheet, there are no food or drink restrictions. Continue to take any medication prescribed by your doctor unless otherwise directed. Please kindly refer to the attached MRI appointment sheet for the detailed arrangements.
- Eye make-up should be avoided on the day of examination.
- Please inform our staff if you have the following items or conditions because they are potentially hazardous and may interfere with the MRI examination by producing artefacts.
  - You have implants or foreign bodies inside your body such as:
    - Internal shunt
    - Cardiac implantable electronic devices such as cardiac pacemaker or implantable cardioverter defibrillator (ICD)
    - Prosthetic heart valve, Cardiac Occluders or closure devices
    - Neurostimulator or Electrodes or Programmable CSF shunt
    - Surgical clips
    - Metal mesh or wire suture
    - Insulin or implanted pumps
    - Hearing aids
    - Cochlear implants
    - Dentures or dental fillings
    - Intravascular coils, filters or stents
    - Metallic foreign bodies
    - Intrauterine contraceptive device
    - Orthopaedic metallic devices (e.g. pins, nails, screws, plates, wires, rods)
    - Medication patch (i.e. transdermal patch) that contains metal foil
  - You are now or used to be a metal worker.
  - You have been injured by metallic fragment, shrapnel, bullet or any metallic foreign body.
  - You have been injured in the eye by a metallic foreign body.
  - You have tattoo or permanent eye-lining.
  - You have history of renal failure, renal disease or renal surgery.
  - You are pregnant or suspect that you could be pregnant.
  - You suffer from claustrophobia.
- You will be asked to change into a gown provided. You must remove from your body any loose ferromagnetic items, metallic objects (e.g. glasses, wrist watch, necklace, earrings, safety-pin, hair-slide, etc.), and items which may be damaged by the magnetic field (e.g. credit cards, Octopus card, HKID card, cell phones, etc.) prior to entering the magnet room. A locker will be provided for you to secure your personal belongings.

### **During Examination**

- MRI examinations may take between 30 minutes to 1 hour to complete depending on the body part imaged. You are required to keep still during the examination. Some patients may require sedation or even general anaesthesia in order to prevent movements during the examination.

- Ear plugs or headphone will be provided to protect you from the noise generated by the machine during the examination.
- To enhance your safety, an intercom system is installed inside the examination room so that you can communicate with our staff during the examination. In addition, an emergency call bell is also available which you can hold and press for assistance if necessary.
- In some examinations, Gadolinium-based MR contrast agent will be administered intravenously in order to show the pathology more clearly.

### **After Examination**

Normally the examination will not cause any discomfort. After the scan, normal activities could be resumed without any restrictions. The MRI images will be examined by radiologist and the MRI report will be sent to your referring clinician.

### **Risks or Complications**

Long term biological effects of MRI examination on human body and fetus are still not fully understood.

#### General Risks or Complications

- Noise is unavoidable during the course of the MRI examination. There might be a loud tapping, knocking or chirping sound during the examination. The sound loudness can be up to 130dB or above.
- Peripheral nerve stimulation with transient tingling sensation, muscle twitching, warmth and pain.
- Claustrophobia – anxiety response, excessive fear or panic attack when exposure to enclosed MRI gantry.
- Gadolinium-based MR contrast media is a very safe drug. Reactions are uncommon and usually very mild. Minor reactions such as headache, dizziness, nausea or vomiting, might occur in about 1% of patients. Contrast medium extravasation can cause some discomfort, swelling or pain at the injection site that usually disappears in one or two days.

#### Specific Risks or Complications (including low probability serious consequence risks or complications)

- Rarely, Gadolinium-based MR contrast media can cause severe reaction, such as convulsion, severe anaphylaxis and death. The chance of this fatal occurrence is about 1 in 400,000.
- MRI Non-compatible implants or devices might be displaced, heat up and causing tissue burning, malfunction or attached to the magnet.
- On very rare occasions, heat can build up in the tissues and burns can occur.
- Patient with renal failure may (1-7%) develop nephrogenic systemic fibrosis after receiving intravenous Gadolinium-based MR contrast media. Some affected patients can develop joint contractures, joint immobility, multi-organ failure. This reaction may in very rare cases be fatal.
- Gadolinium may deposit in various structures of the brain following repeated injection of Gadolinium-based MR contrast medium. To date, there is no proof that these Gadolinium deposits in the brain have been associated with adverse health effects or pathological consequences.

### **For Pregnant or Breastfeeding Patient**

- If you think that you are pregnant on the date of the examination, please consult your clinical doctor for advice as soon as possible. There is no documented evidence of harmful effect of MRI on the developing human fetus throughout the pregnancy. Only a small number of animal

studies have raised the possibility of teratogenic effects of MRI exposure in early pregnancy and the potential risk of acoustic damage to the fetus.

- Very small percentage of Gadolinium-based MR contrast medium may be excreted into the breast milk and absorbed by the infant's gut. There is no documented evidence of harmful effect of the contrast medium to the infant. Mother and infant can continue breast-feeding after receiving the contrast medium.

### Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. If you have any questions concerning about your MRI examinations, please feel free to ask the staff of the Magnetic Resonance Imaging Centre or contact your referring doctor.