SCANNING PARTICIPANTS WITH CERTAIN TYPES OF IMPLANTS AT FSU MRIF

The MRIF oversight committee has, upon recommendation of the MRIF safety committee, recently (Nov 16, 2019) approved scanning participants with a very limited list of implants. To this end the MRIF safety manual (available at https://mri.fsu.edu/for-researchers/safety-manual/#contraindications) has been updated to reflect the limited types of implants that may be scanned, and the strict conditions under which these individuals can be scanned. Researchers are advised to read the safety manual thoroughly.

People who have undergone surgery for a permanently implanted device should have been given a card with their implant's device name, manufacturer, and model number on it. The information on this card is used to determine whether and under what conditions (e.g., field strength, scan parameters, gradient fields, and applied RF) a participant with an implant can be scanned. In cases where the implant card is unavailable or was not provided to the participant, a copy of the participant's surgical notes (only the relevant portion is necessary) that state the device name, manufacturer, and model number is also acceptable.

Lab managers must obtain the device name, manufacturer, and model number from the participant's implant card. This information must be conveyed to the MRI Technologist for approval via email at least two business days in advance of the scan. Please ensure that only the device name, make, and model numbers are sent by email to maintain HIPPA rights for participants. **Do not send any Personally Identifiable Information (PII) or Protected Health Information (PHI); do not send a copy of the participant's card through email.**

Participants **must** bring their implant card to their study appointment for final verification. **If they fail to provide the implant card on the day of their study, they will not be scanned.** In the event that a participant arrives at MRIF without their implant card, the booking cancellation policy still applies. See https://mri.fsu.edu/for-researchers/getting-started/#cancellationpolicy.

In all cases, the decision to scan an individual is made on a case-by-case basis.

CARDIAC VALVES

All cardiac valves are considered safe to scan on a 1.5T and 3T. However, the procedure described above must be followed.

CORONARY AND CAROTID ARTERY STENTS

Most coronary and carotid artery stents are considered acceptable to scan on a 1.5T and 3T as long as they have become securely anchored in the surrounding tissue. This usually occurs four to six weeks after surgery. There may be certain conditions that apply to different devices. Thus, the procedure described above be followed.

Stents that are located in other parts of the body will not be scanned.

ORTHOPEDIC JOINT PINS AND REPLACEMENTS

Most of the orthopedic implants, materials, and devices evaluated for MRI are made from nonferromagnetic materials or materials that can be safely scanned. Most of the hardware that is surgically implanted is embedded in the bone. Usually, after six weeks, the device has fused to the bone and developed scar tissue to keep it in place. The procedure described above must be followed.

Individuals with external orthopedic fixation systems will not be scanned under any circumstances.

CONTRACEPTIVE DEVICES

Only the following three contraceptive devices have been tested on a 3T magnet:

- Copper T 380A IUD;
- Mirena intrauterine system;
- Implanon rod implant.

Other contraceptive devices that are classified as MRI safe, or have no metallic components, such as the NuvoRing may be scanned.

Non-safe or non-tested Intrauterine Devices (IUD) exist, so only those listed above or deemed MRI safe may be scanned.

ORTHODONTIC APPLIANCES

Most dental braces/orthodontic appliances are non-ferromagnetic, but some exhibit measurable deflection in a strong magnetic field, and others include magnetic components.

Participants may experience vibrations and loosening is possible if the dental implant is not firmly bonded to their teeth.

Immediately prior to the study, confirm with participant that their orthodontic appliance is not loose, does not employ magnets, and is not otherwise MRI conditional or unsafe.

Artifacts from metal components may interfere with the data quality of certain parts of the brain.

TRANSDERMAL MEDICATION PATCHES

Transdermal Medication patches (e.g., pain patches) contain a prescription medication. It is out of the MRI Technologist's scope of practice to manage prescription medication patches.

ANY patch located in the Radio Frequency (RF) field needs to be removed as we cannot reliably determine if a patch has a metal backing. If a patch is known to have metal backing, it needs to be removed before the MRI even if not location in the RF field. The removal of the medical patch must be done with the approval of their physician, not at the request of researchers or the technologist.

If you have any questions regarding anything covered in this memo, please feel free to call Alecia Lapointe, RT (MR) at 850-644-1889 or email at alecia.lapointe@med.fsu.edu.