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MRI Safety – Thermal burns and SAR

Purpose:
The purpose of this policy is to establish standards of care relating to MRI safety, specifically, thermal burns and SAR.

Policy:
In accordance with ACR Guidance Document on MR Safe Practices located at URL: http://onlinelibrary.wiley.com/doi/10.1002/jmri.24011/pdf, it is the policy of Excel Imaging to implement safe MRI system SAR practices and limit the potential for thermal burns.

Procedure:
1. The technologist shall ensure that all patients are aware of the potential risk of burns from permanent (tattoo) eyeliner, body tattoos, body piercings or who are wearing facial make-up which may contain ferromagnetic particles, in the magnetic field.
2. The MRI technologist shall remove any unnecessary metallic objects including drug delivery patches, ECG leads and jewelry from the patient. Any electrically conductive material that must remain in the MR system shall be prevented from directly contacting the patient’s skin. Electrical insulating material may be used.
3. The technologist shall position the patient and any cables in a manner to prevent any closed loops. Skin to skin contact between hands, thighs, knees, and calves may promote development of thermal burns during scan. Loops of wires lying across the patient’s skin may also cause burns.
4. The technologist will ensure there is not any direct contact between transmit RF coils and the patient skin. Insulated coils or an insulation material with a thickness of at least 1 cm will be placed between the patient’s skin and the transmit RF coils. This may be accomplished by having the patient place his hands above his head or by using elbow pads between the patient and the transmit RF body coil.
5. The MRI operator shall be prompted and confirm continuance to 1st level controlled SAR mode. SAR levels above 1st level may impose significant risk to the patient and require IRB approval. The MR system shall be locked against entering 2nd level controlled SAR operating mode.
6. If the patient expresses a heating sensation or other discomfort, the technologist will discontinue the scan and perform a thorough assessment of the situation.