University Health™	Policy #: Rad Proc 14. 4. 12
SUBJECT: SAR	**Effective: 10/1/2013** **Revised: 2/2015: 2/2017**
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Purpose: To bring awareness to SAR and it affects during MRI scanning. SAR) The **Specific Absorption Rate** is defined as the RF power absorbed per unit mass of an object, and is measured in watts per kilogram (W/kg).
The SAR describes the potential for heating of the patient's tissue due to the application of the RF energy necessary to produce the MR signal. Inhomogeneity of the RF field leads to a local exposure where most of the absorbed energy is applied to one body region rather than the entire person, leading to the concept of a local SAR. Hot spots may occur in the exposed tissue, to avoid or at least minimize effects of such theoretical complications, the frequency and the power of the radio frequency irradiation should be kept at the lowest possible level. Averaging over the whole body leads to the global SAR. It increases with field strength, radio frequency power and duty cycle, transmitter-coil type and body size. The doubling of the field strength from 1.5 Tesla (1.5T) to 3 Tesla (3T) leads to a quadrupling of SAR. In high and ultrahigh fields, some of the multiple echo, multiple-slice pulse sequences may create a higher SAR than recommended by the agencies. SAR can be reduced by lower flip angle and longer repetition times, which could potentially affect image contrast.
Normally no threatening increase in temperature could be shown. Even in high magnetic fields, the local temperature increases not more than 1°C. 2.1°C is the highest measured increase in skin temperature. Eddy currents may heat up implants and thus may cause local heating.

Policy:
Follow the thermal burns policy Rad Proc 14.4.10. Notify the MR medical director and MRI manager. Pt will be evaluated by Radiology designated by the MR medical director. The Radiology Resident will assess the burn and make necessary treatment decisions. Reporting all burn via variance per Hospital Policy.