



From: Chad Holder, MD 
TRA MR Medical Director

Date: December 7, 2020

Subject: Patients with dermal piercings undergoing MR exams

Page 66 of the TRA MRI Safety Manual (dated March 2018) states the following about body piercing:

Even if body piercing is made from nonferromagnetic materials, it may cause artifacts or may be subject to RF-related heating if it is near the imaging volume. As a precautionary measure, the patient should remove all body piercings prior to the MR exam.

Effective immediately, please note the following addition to the Manual regarding dermal piercings and **share this important information with all MR team members**. (The guidance is available at http://www.mrisafety.com/maint/vf_SafetyInformation/.)

Different types of materials are used to make dermal or body piercing jewelry. While non-metallic piercings introduce no risk in the MR environment, some jewelry is made of ferromagnetic and nonferromagnetic metals and therefore presents problems to patients undergoing MR exams or individuals present in Zone IV.

For ferromagnetic jewelry, risks include uncomfortable sensations from movement or displacement of the piercing(s). These sensations may be mild-to-moderate depending on the site of the body piercing and the ferromagnetic qualities of the jewelry (e.g., mass, degree of magnetic susceptibility, etc.). In extreme cases, injuries may occur.

For body piercing jewelry made from electrically conducting metal, there is a possibility that MR-related heating could cause excessive temperature increases if the jewelry is located in the area of the transmitted RF. Considering the size and shape of most items used for piercings, the risk of excessive heating of body piercing jewelry is relatively low.

While ferromagnetic piercings present displacement or projectile risk and conductive piercings present heating risk, dermal piercings may also affect image quality. If the jewelry is present in the imaging field of view and in proximity of any underlying pathology, the overall quality of the exam may be compromised.

Because of the potential safety and/or image quality issues, it is recommended that metallic body piercing jewelry be removed prior to entering the MR environment, if possible. Nonetheless, some patients or individuals with body piercings are often reluctant or may be unable to remove their jewelry. Consequently, if it is not possible to remove metallic body piercing jewelry, the patient or individual should be informed regarding the potential risks.

If the body piercing jewelry is made from ferromagnetic material, the patient may feel it pull or tug in Zone IV. Accordingly, in Zone II, a powerful handheld magnetic may be used to test the jewelry. If indeed the piercing is ferrous, some means of stabilization (e.g., application of adhesive tape or bandage) should be used to prevent movement or displacement of the object.”



Although the risk of excessive heating is low for a single, small piece of jewelry, some patients may present with an array of piercings as shown here. (Photo available at <https://listovative.com/top-9-body-piercings-health-risks-problems-and-dangers/>.) An icepack or cold compress may be used to prevent or relieve discomfort.

Prior to the MR exam, the patient should be instructed to inform the MR technologist immediately if heating or other unusual sensation occurs in association with the body piercing jewelry.

Thank you for your assistance. If you have any questions, please contact me at cholder@triadradiology.com.