

## Thinking twice about tattoos?

by Marcella Durand

**D**id you know? Black or dark brown tattoo inks contain iron oxides that occasionally react to the powerful magnetic field that is part of the MRI (magnetic resonance imaging) process. Tattoos may also cause “artifacts” that can distort or block the image itself.

However, the risk of either occurrence is low, and even extensive tattoos are not considered a reason to avoid diagnostic MRIs (the ones done to figure out if a person has MS or not). But tattoos may disqualify people with MS from participating in clinical trials. An online call for participants in a study at the National Institutes of Health to test the ability of MR imaging to detect damage in the brains of people with MS states that “subjects with tattoos will be excluded if those are in a dangerous location in the body or made with colors whose content in iron (e.g., dark blue or dark green) cannot be definitely ruled out by the investigators.”

### Data on danger is not scary

Out of a 2002 survey of 135 people with cosmetic tattoos (tattooed eyeliner, eyebrows, lips, or cheeks) who underwent MRIs, only two reported sensations of tingling or burning—both which subsided after the procedure. The researchers concluded that “it appears MR imaging may be performed in patients with permanent cosmetics without any serious soft tissue reactions or adverse events.”

Less data exists on decorative tattoos, but a few isolated incidences of reactions have been reported in letters to scientific journals. In a case reported in the **American Journal of Roentgenology**, a 23-year-old man developed second-degree burns in the black thunderbolts tattooed on his arm. The researchers theorized the thunderbolt shapes may have approximated

a radiofrequency pick-up loop and therefore absorbed more energy.

Tattooing is an ancient art, but it may not always mix so well with modern technology.

### Avoiding reactions

If you have tattoos, make sure to tell the MRI technician beforehand. The 2007 ACR Guidance Document for Safe MR Practices recommends that cold compresses or ice packs be placed on dark or extensive tattoos during an MRI, so ask about that option. The document also says that new tattoos—those less than 48 hours old—may smear or smudge at the edges.

Frank G. Shellock, PhD, adjunct clinical professor of Radiology and Medicine at the Institute for Magnetic Resonance

Safety, Education, and Research at the University of Southern California, and who administers **MRIsafety.com**, stressed that the risk of going undiagnosed or unmonitored is much greater than the risk of MRI, and that people with tattoos should undergo MRIs “without reservation.” He added that there aren’t any special considerations for people with MS and tattoos.

Marcella Durand is an associate editor of this magazine.

