

Main Risks of MRI

Contraindications:

Pregnant patients due to potential harmful increases in amniotic fluid temperature.

Metal-Related Risks

The powerful magnetic field in an MRI can attract ferromagnetic objects and turn them into dangerous projectiles. This includes both external items (like oxygen tanks, keys, or cell phones) and certain internal medical implants. Even small objects like paperclips or scissors can be quickly pulled from your hands and potentially cause injury to anyone nearby.

Medical Device Risks

Certain medical implants pose significant contraindications for MRI scanning, including:

- Cardiac implantable electronic devices (pacemakers, defibrillators)
- Metallic intraocular foreign bodies
- Some aneurysm clips
- Certain medication pumps
- Metallic fragments

However, some newer devices like certain pacemakers, neurostimulation systems, and medication pumps are MRI-compatible. The exact type must be known so special safety procedures can be followed.

Burn Risks

The most commonly reported adverse events from MRI are heating and/or burns (thermal injuries), with second-degree burns being the most frequent patient issue.

Patients with tattoos may experience warming sensations and should use ice packs or padding if the tattoo is in contact with the bore or MRI coil.

Contrast Agent Risks

If contrast dye is used, there's risk of allergic reactions, especially for patients with allergies to medications, contrast dye, iodine, or shellfish.

The contrast may also affect conditions like allergies, asthma, anemia, low blood pressure, and sickle cell disease.

Other Environmental Risks

The changing magnetic fields create loud knocking noises that can potentially damage hearing if adequate ear protection isn't used.

Most MRI incidents can be prevented by following standard safety practices, with one study finding that 74% of incidents could have been avoided with proper protocols.)