

## Iron Infusions and Iron Injections - MRI

### Purpose

To provide guidance for the safe and appropriate performance of magnetic resonance imaging (MRI) examinations in patients with a history of iron infusion or iron injection, consistent with the principles outlined in the ACR Manual on MR Safety.

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### Policy Statement

Most iron replacement therapies are considered MR Safe and do not pose a direct hazard in the MR environment. Certain iron formulations, most notably ferumoxytol (Feraheme), may significantly alter MR signal characteristics and thereby affect diagnostic interpretation. Identification, documentation, and radiologist review of iron therapy are required prior to MRI examination. The decision to proceed with MRI, modify the protocol, or delay imaging is based on a risk–benefit assessment performed by the interpreting radiologist.

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### Iron Therapy Categories and MRI Considerations

#### A. Intravenous Iron (Non-Ferumoxytol)

Examples include iron sucrose, ferric carboxymaltose, ferric derisomaltose, and iron dextran.

- MR Safety Status: MR Safe
  - Timing Considerations: No mandatory delay is required prior to MRI.
  - Image Quality Considerations: Transient alterations in signal intensity, most commonly within the liver and spleen, may be observed but generally do not preclude diagnostic interpretation.
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#### B. Ferumoxytol (Feraheme)

Ferumoxytol is an intravenous iron preparation with superparamagnetic properties.

- MR Safety Status: MR Safe
- Primary Consideration: Substantial effects on MR signal characteristics due to susceptibility and T1/T2 shortening.

Potential Effects on MRI:

- Alteration of T1-, T2-, T2\*-weighted, susceptibility-weighted, and angiographic sequences
- Imaging findings that may simulate hemorrhage, iron deposition, or vascular pathology

Scheduling Considerations for Non-Urgent Imaging:

- Brain MRI and MR Angiography: minimum of **4 weeks** following administration (longer intervals may be preferred)
- Abdominal MRI (including liver and spleen): imaging effects may persist for up to **3 months**
- Other anatomic regions: timing to be determined by the interpreting radiologist based on protocol and clinical indication

\*\* Radiologist review is required for MRI examinations performed within these intervals.

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### C. Intramuscular Iron Injections

- MR Safety Status: MR Safe
  - Timing Considerations:
    - MRI of the same anatomic region may be deferred for 1–2 weeks to reduce localized artifact.
    - MRI of other anatomic regions may proceed without delay.
  - Image Quality Considerations: Local susceptibility artifact may be present at the injection site.
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### **VI. Exceptions**

MRI examinations may proceed without delay in urgent or emergent clinical situations, provided that the potential impact on image quality is deemed acceptable by the interpreting radiologist.

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### **VII. References**

- American College of Radiology. *ACR Manual on MR Safety*. Current edition.
  - American College of Radiology. *ACR Practice Parameter for Performing and Interpreting Magnetic Resonance Imaging (MRI)*.
  - FDA Prescribing Information: Ferumoxytol (Feraheme).
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### **VIII. Summary**

Iron replacement therapies are generally MR Safe. Ferumoxytol requires additional consideration due to its effects on MR signal characteristics. Final determination regarding MRI timing and protocol modification rests with the interpreting radiologist, consistent with ACR guidance.

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