

**Guidelines for the Management of Patients with Embolization Coils Used
for Cerebral Aneurysms or Arteriovenous Malformations
Referred for MRI Examinations***

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In the clinical magnetic resonance imaging (MRI) setting, it is often necessary to manage patients with embolization coils used for cerebral aneurysms or arteriovenous malformations (AVMs)(1-6). MRI labeling information exists for numerous embolization coils used for those applications. By following the MRI labeling information (i.e., presented in the *Instructions for Use*, the Patient Identification Card, etc.), patients with embolization coils used for cerebral aneurysms or AVMs have safely undergone MRI examinations, including those performed using MR systems operating at 3-Tesla. Notably, there has never been an adverse event reported in association with performing MRI in patients with these implants.

Unfortunately, the standard policy that MRI labeling information is required before allowing the use of MRI in patients with embolization coils used for cerebral aneurysms or AVMs limits access to this important diagnostic imaging modality for those patients for which labeling information is unavailable. In consideration of the relevant peer-reviewed literature and other related information (1-6), it is acceptable and safe to perform MRI examinations in patients with all embolization coils used for cerebral aneurysms or AVMs by following specific guidelines developed by taking into consideration the primary safety concerns (i.e., magnetic field interactions and MRI-related heating) for these implants.

By adhering to these MRI conditions, patients with embolization coils used for cerebral aneurysms or AVMs can benefit from the diagnostic imaging information provided by this important noninvasive imaging modality.

Guidelines: A patient with embolization coils used for cerebral aneurysms or AVMs may undergo MRI using the following guidelines:

- 3-Tesla or less
- No restriction on the direction of the static magnetic field
- No restriction on the value of the spatial gradient magnetic field

- Whole body averaged specific absorption rate (SAR) of 2-W/kg (i.e., operating in the Normal Operating Mode for the MR system)
- Maximum imaging time, 15 minutes per pulse sequence (multiple pulse sequences per patient are allowed)

***Important Note:** The “Guidelines for the Management of Patients with Embolization Coils Used for Cerebral Aneurysms or Arteriovenous Malformations Referred for MRI Examinations” should only be implemented for use after the careful review by the supervising radiologist or other physician responsible for the MRI facility and with the adoption of the information as a written policy.

Important Note: Any deviation from the above MRI conditions requires prior approval by the supervising physician.

Important Note: These guidelines must be reviewed on an annual basis to confirm that no embolization coil used for the treatment of a cerebral aneurysm or an AVM has become available that substantially deviates from the above MRI conditions or that is labeled, MR Unsafe.

References

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