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| Ochsner \| LSU Health SHREVEPORT | **POLICY #: Rad Policy 14.1** |
| **SUBJECT:** : MRI Overview and Clinical indicators | **Effective: 10/1/2018**<br>**Revised 02/2019** |
| **APPROVED BY** **Eduardo Gonzalez-Toledo, MD Phd** | **Page 1 of 3** |

Purpose: This policy will provide a very brief overview of the current status of MRI Imaging with regards to indications for the most frequently examined anatomic areas.

Background: BRAIN/CENTRAL NERVIOUS SYSTEM:

**MR**I is the most appropriate initial imaging examination for diagnosing neurological disease in ambulatory and cooperative patients.

**Contraindications:**

1. Severe claustrophobia
2. Cardiac pacemakers
3. Non-removable bioelectronic devices
4. Known intracranial ferromagnetic aneurysm clips
5. Ferromagnetic particles within the eye
6. Uncooperative patient

**Acute cranial trauma** is often best imaged using CT because these patients tend to be uncooperative. Acute subarachnoid hemorrhage is best visualized by CT.

Primary and metastatic tumors, infections, infarctions, chronic trauma and congenital malformations are all best visualized with **MRI**.

The sensitivity of MRI in the Central Nervous System is further increased by the use of an intravenous agent, Gadoterate meglumine (Dotarem). Dotarem is indicated for intravenous use in MRI to visualize lesions with abnormal vascularity (or those thought to cause abnormalities in the blood brain barrier) in the brain (intracranial lesions), spine and associated tissues as well as within the thoracic, abdominal, pelvic cavities and the retroperitoneal space.

**SPINE**

**MRI** of the spine is the preferred method for examining patients for disc disease and spinal stenosis. In most cases it has replaced the need for Myelography.

The extent of tumors that may affect the spine arising within the vertebral column, extradural or intradural in location, or within the spinal cord are much better evaluated by MRI than any other modality. Osteomyelitis, discitis and other types of infections are easily identified by MRI. Congenital abnormalities are easily identified by MRI. Congenital abnormalities of the spine and cord are readily detected. Infiltrative processes of the marrow of the vertebral bodies, such as metastatic disease, are typically better detected by MRI than by plain film, CT, or bone scan.

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**Indications:**

BRAIN

1. Primary neoplasms
2. Metastases
3. Vascular abnormalities
4. Venous agiomas
5. Arteriovenous malformation
6. Infarctions (non-acute)
7. Post-Traumatic injuries
8. Seizure disorders
9. Demyelinating disease
10. Infectious diseases
11. Degenerative diseases
12. Inflammatory diseases
13. Psychiatric disorders
14. Hydrocephalus
15. Congenital abnormalities
16. Radiation therapy planning

**SPINAL CORD AND CANAL**

1. Primary and metastatic cord tumors
2. Syringomyelia
3. Demyelinating disease
4. Myelopathy disorders
5. Disc disease
6. Spinal stenosis
7. Traumatic lesions
8. Congenital abnormalities
9. Infection/Inflammatory changes
10. Vertebral body lesions: malignant, infectious, and traumatic
11. Radiation therapy planning

**NECK & Chest**

1. Primary and metastatic tumors
2. Benign tumors
3. Inflammatory disease
4. Granulomatous disease – complicated
5. Aortic aneurysms