

Evaluation of Spinal Disorders

The Specilized Role of MRI

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Magnetic resonance imaging (MRI) is a non-invasive diagnostic imaging method that uses tuned sound waves and a powerful magnetic field rather than X-rays to produce clear and detailed images of virtually any part of the body. MRI has become one of the most widely used advanced imaging methods for evaluating the spine. MRI is an excellent method for visualizing normal and diseased tissues in the spine. It helps determine the cause of back pain and neurological disorders related to the spine. MRI demonstrates the anatomy of the vertebrae and their relationship to adjacent vertebrae that make up the spine, as well as the spinal cord and the spaces between the vertebrae through which nerves pass.

MRI is used in spinal diagnosis to

- detect a bulging, degenerated or [herniated intervertebral disc](#)—a frequent cause of severe lower back pain and sciatica.
- assess age related changes of the intervertebral disc, bone and bone marrow,
- evaluate for the presence of a compressed (or pinched) nerve in the spine.
- help plan spine surgeries such as: nerve root decompression, tumor resection or spinal fusion.
- evaluate whether anything has changed and to assess whether there is post-operative scarring (fibrosis) or an infection. If a patient has failed to respond to surgery an MRI may reveal why.
- help diagnose or rule out potentially serious conditions such as spinal infection or tumors. A tumor may arise in the spine (primary) or may spread to the spine (metastasis). More common forms of metastasis to the spine may come from primary locations such as the prostate, lung and breasts.