

# Healthy Living

Patient Information from the American Chiropractic Association

## Understanding MRI

Technological progress is not reserved for cell phones and iPads. Advanced imaging modalities, such as magnetic resonance imaging (MRI), have benefitted from recent advances as well. In fact, MRI has become the gold standard of advanced imaging for the spine and extremity joints. A survey of the top 25 internists in the United States found that MRI and CT scans were rated No. 1 as the most important development in medical science in the previous century.

### What is MRI?

MRIs create images of the internal structures of the body based on the energy released from hydrogen atoms. Essentially, a radio frequency is used to move the hydrogen atoms in your cells around and as they move back into their natural alignment, they emit a tiny electrical signal. The MRI scanner contains magnets in special coils to detect this electric signal and then a computer uses this signal to create an image of your tissue. With an MRI, doctors can see structures, such as ligaments and tendons, inside the body that can't necessarily be seen or felt by hand.

One major benefit of MRI is that, unlike X-rays, it doesn't expose your body to radiation.

### Chiropractic and MRI

MRIs are part of a clinical evaluation. They are used to help diagnose injuries and illnesses based on what was found during the history-taking and physical exam. MRI can be used to image almost any part of the body—the central nervous system, the heart, parts of the abdomen, blood vessels, reproductive organs, the spine and the extremities.

MRIs are not performed as scout studies. That is, they aren't used to go in and look around to see if there is a problem. Instead, they're used to confirm or exclude possible diagnoses. For example, an MRI can confirm a suspected cartilage tear in the knee or exclude a lesion in the discs of the spine.



The American College of Radiology (ACR) has created appropriateness criteria for when MRIs should be ordered. For example, if you are experiencing frequent headaches and there is a change in the intensity of the headaches or if another symptom suddenly appears, such as blurred vision, ACR strongly recommends an MRI.

### The Future of Imaging

Until now, imaging has been limited to the anatomical level of the body. The future of imaging is aimed at defining how things function at the molecular level. Another new type of imaging is weight-bearing MRIs. Weight-bearing images make certain functional issues more obvious. For example, neck images in full flexion and extension can show spinal displacements or bulges that are not present in MRIs taken while the patient is lying down.



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