

## **Argus Orthopaedic Zone**

### **Imaging Techniques: Course 201**

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*Transforming patient information into patient understanding.*

I think the sentence above, which is always the opening of each article is especially meaningful in what I am discussing with you now. You have heard the words (or letters), but few people know much more than that. Last week was Imaging Techniques 101.

#### **Imaging Techniques In Orthopaedics**

##### **Magnetic Resonance Imaging (MRI)**

A radiologist friend Dr. George Polonco once gave me a book entitled "MRI made easy,..... well almost". To really understand MRI I think you need to have a PhD. in radiation physics! I decided that after reading the book. Nonetheless, I believe I can help you understand some aspects of MRI. At least I hope I can!

Let us begin with a general overview of MRI.

The single steps of an MRI examination can be described quite simply.

- The patient is placed in a magnet
- A radio wave is sent in
- The radio wave is turned off
- The patient emits a signal which is received and used for reconstruction of the picture

The technique is done by using strong magnets or pulses of radio waves to manipulate the natural magnetic properties in our bodies.

The term radio wave is used to describe an electromagnetic wave in the frequency range of the waves, which you receive in your radio.

Still with me? Good.

**Key Point:** MRI does not deal in radiation, which is the basis of plain x-rays and CT that we described last week. It is what makes it so amazing. It can't hurt you. No radiation.

MRI makes better images of organs and soft tissues than those of CT.

MRI is especially good in imaging the brain and spine as well as the soft tissues of joints and the interior structure of bone. Basically the entire body is visible to the MRI technique.

MRI cannot be done on patients with pacemakers or surgical aneurysm clips in the brain.

### **MRI Contrast Agent and Alert**

Sometimes MRI studies need to be enhanced with a contrast material, which is injected. The most common contrast agent is GAD. The actual name is impossibly long and hard to pronounce! It is extremely useful and I order it a lot, but some patients can't have it. GAD can cause some serious, but rare kidney damage in patients who already have renal insufficiency.

Our office is careful to take a good history of kidney trouble and do needed lab work if necessary.

I think this would be a good place to stop for today as we still have a lot to cover which we can complete next week in Imaging Techniques 301!

I think the information in this three week mini course on Imaging should be valuable to you because I am using these studies constantly in my work taking care of you. As I have often stated, "an educated patient is our best result"!

Next week I will cover Arthrography, Bone Scans and PET scan. Stay with me.

### **Office Website and Argus Orthopaedic Zone Archive**

The new improved office website [www.orthopodsurgeon.com](http://www.orthopodsurgeon.com) has a ton of great information about all the things I treat in the office and hospital.

It also contains the Archive of all Argus Orthopaedic Zone articles I have written for you to date.

Our goal is simple - To help people return to more pain free,  
functional lives. I specialize in you.

Good health. Good life. All the best to you.

Be well.

Dr. Haverbush