



National  
Multiple Sclerosis  
Society

## MS Learn Online Feature Presentation

### Magnetic Resonance Imaging: MRI Featuring: Dr. George Kraft

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**Stephen:** I wouldn't say I experienced anxiety with the MRI. It is kind of a tight, uncomfortable situation, but I just kind of let my mind wander and kind of just listened to the sounds. It was almost relaxing at some point, once you got past the jarring sounds.

**Cheryl:** I have to have an MRI. I know they are important because they give me the answers I am looking for. They gave my doctors and I the answers we need. I have this really excellent calming music. They plug it in and I have a couple of Valium too, and it helps me get through it.

>>**Kate Milliken:** Hi. I'm Kate Milliken, and welcome to MS Learn Online. Magnetic resonance imaging, better known as MRIs, are a common tool in the clinical diagnosis and care of people with multiple sclerosis. What exactly do health professionals learn from an MRI scan, and how does that information help care for people with MS? To answer those questions and more, we have Dr. George Kraft with us.

Dr. Kraft is the Alvord professor of MS Research and the director of the Western Multiple Sclerosis Center at the University of Washington Medical Center in Seattle. Welcome to MS Learn Online, Dr. Kraft.

>>**Dr. George Kraft:** Kate, I'm glad to be here, thank you.

>>**Kate Milliken:** Thank you. So, let's just start with a simple question: What is an MRI?

>>**Dr. George Kraft:** Oh, that's not a simple question. It's a very complex and very expensive piece of equipment that can look into the body, all different organs, and can give information to doctors depending on what the organ is. With regard to MS, the organ we look at is the brain. We also look at the spinal cord. But a brain we can identify whether the patient has typical changes of MS.

>>**Kate Milliken:** How does it work?

>>**Dr. George Kraft:** It works by looking at the vibrations of the water molecules in tissue. And when there is inflammation -- which is what the attack is, the initial attack of MS is inflammation around the nerves. The water molecules -- there are more water molecules there and they vibrate more. So, we're really looking at water.

>>**Kate Milliken:** Why are MRIs an important diagnostic tool for people with MS?

>>**Dr. George Kraft:** MS presents in a really typical way, and if you see that typical pattern you have the diagnosis right there, especially if you have a pattern that clinically goes along with MS.

>>**Kate Milliken:** And what exactly is the MRI measuring? I know you said it's measuring the water molecules, but what is it seeing?

>>**Dr. George Kraft:** It is seeing little white lines that radiate from the ventricles, which are the spaces in the middle of the brain, where the fluid goes. It looks like fingers. It's called Dawson's fingers, and we're looking for Dawson's fingers.

>>**Kate Milliken:** So, talk to me when someone says, "Oh, I had an MRI and saw that there were three lesions." What does that mean?

>>**Dr. George Kraft:** Well, that means they hadn't really advanced to the point of having what we call Dawson's fingers. It meant that they have little round or oval areas that are areas of demyelination, inflammation, more water, and that's what they're seeing.

>>**Kate Milliken:** Okay. How often do you feel that people and patients with MS should have an MRI?

>>**Dr. George Kraft:** Well, I believe everybody needs an MRI to have a diagnosis, first of all. You can't really make a diagnosis for sure without the MRI. And I am a strong believer and have been for a long time and is probably one of the first believers that a person needs an MRI of the upper part of the spinal cord, too, because a lot of lesions occur there.

Once you have the diagnosis established, in our practice, I believe that you need to do it about every two years. And the reason you do is because you can have hidden lesions that the patient isn't aware of. They are called silent. I don't believe they are silent because they are taking a toll on a person. They are impairing memory, they are impairing emotional stability, they are maybe causing depression, and we know it is doing these things because depression and cognitive impairment are rather prevalent in MS.

>>**Kate Milliken:** Right. But what you're saying is by taking an MRI, it's actually possible to see that there is activity happening in a way that may be affecting somebody's thinking.

>>**Dr. George Kraft:** And the answer is that's correct. And the reason that's important is because we have so many good disease-modifying treatments available now, that if you failed one -- in other words, you have new lesions that you are not aware of as a patient, means you failed the drug. We have better options now. So, you don't want those to get so bad as to cause major problems; you want to pick them up when they're mild.

>>**Kate Milliken:** So, you certainly, nobody can dispute an MRI is an extremely expensive machine.

>>**Dr. George Kraft:** Yes.

>>**Kate Milliken:** It also happens to be quite a claustrophobic one, and in my experience having an MRI, I was shocked on how close everything is, how loud it is, and it's a unique experience that some people find daunting, and they feel a lot of anxiety about. Do you have any tips that you would give to patients who may be feeling that way?

>>**Dr. George Kraft:** My tip is called Valium.

>>**Kate Milliken:** Great. And doctors that you know will probably, that is something that is very common for doctors to prescribe.

>>**Dr. George Kraft:** Yes.

>>**Kate Milliken:** It's not unusual for someone to maybe want something to calm them down.

>>**Dr. George Kraft:** No, no. A patient is having a problem, sometimes patients will want to have something called an open MRI, which means there is no engulfment of a big machine case. But the quality is very poor in those and I'd much rather give the patients something to calm them down and be in a good MRI, to get a good quality MRI.

>>**Kate Milliken:** A one-shot deal that will have lasting results for sure.

>>**Dr. George Kraft:** Right. Right.

>>**Kate Milliken:** Thank you so much, Dr. Kraft, for being here.

>>**Dr. George Kraft:** Uh-huh.

>>**Kate Milliken:** If you would like to get more information on symptoms of MS, go to [nationalmssociety.org](http://nationalmssociety.org). This is Kate Milliken for MS Learn Online. Thanks for joining us.