

As seen in:



## Ask the Experts

### Is Radiofrequency Rhizotomy the Answer for Neck Pain?



#### Question:

Could you please explain radiofrequency rhizotomy? I have spinal arthritis in my neck, and I feel like I've tried all the "usual" treatments. Now my doctor recommends rhizotomy. Do you think it will be *the* treatment that helps me live pain free?

—Atlanta, GA



#### Answer:

It's hard for me to say if this will be *the* treatment that will bring you pain relief. However, I can say that in my years of doing rhizotomies as a pain management specialist—I've performed as many as 2,000 of these operations over the last decade—I have seen significant pain improvement in the majority of my patients.

#### A Brief History of Radiofrequency Rhizotomy

In the early 20th Century, just as we were beginning to understand and map out the body's nervous system, nerve connections were compared to a telegraph system. Impulses, which tell our brain what to feel, were thought to travel through the nerves like a telegram through a wire. The basic understanding was: if you cut the wire, the telegram doesn't get through, so if you cut the nerve, the pain message won't get through.

At that time, doctors sometimes resorted to cutting the nerve roots to treat pain. Unfortunately, this didn't always have a good outcome. Some patients developed neuromas, which are tumors of the nerves. Other patients experienced "functional loss," meaning that the wrong nerve roots were cut and the patient lost some necessary body functions, such as limb movement.

Radiofrequency rhizotomy (RF) was *the* medical advance to address the nerve cutting problems. RF uses an electromagnetic energy field with very high frequency radio waves (400,000 cycles per second). Refinements in RF have brought the temperature below the boiling point (212° F), helping to prevent neuromas and scarring. Radiofrequency rhizotomy also provides more control and precision compared to simply cutting the nerves.

#### How RF Works

I like to compare radiofrequency rhizotomy to a microwave. It transmits radio waves to the food, causing food molecules to vibrate, creating heat and cooking your food quickly. RF uses the same radio wave energy through the tiny tip of an insulated needle (a probe). The doctor can apply the right amount of heat to "cook" a specific nerve without destroying the nerve pathway (that would cause more damage). With time, the nerve will regenerate.

#### This Week's Expert:



*John J. Fitzgerald, MD  
Pain Management Specialist  
Center for Pain Management  
Indianapolis, Ind.*

Dr. John Fitzgerald joined the Center for Pain Management in 2004. Dr. Fitzgerald is a distinguished leader in the field of radiofrequency rhizotomy and has trained numerous central Indiana physicians on the tools and techniques used to relieve the symptoms of painful neuromuscular conditions.

Board certified in anesthesiology, pain management and pain medicine (with recertification in 2006), he has practiced both anesthesiology and pain management at Methodist Hospital and was chairman of the anesthesiology section at Methodist in 1995. Since the late 1990s, Dr. Fitzgerald has practiced pain management exclusively. In particular, he focuses on radiofrequency rhizotomy, having been taught by the internationally renowned physicians and scientists who developed the procedure and the equipment used to perform it.

*(cont.)*

RF temporarily turns off the nerve's ability to transmit pain signals to the brain—you could also liken it to turning off your computer and allowing it to reboot if it's having issues. With time, the nerve will regenerate, but in the meantime, you'll most likely have pain relief. In my experience, pain relief ranges from 9 months to 3 years. Most patients have around 1 year of pain relief after RF.

### **Will It Work for You?**

Correct patient selection is important to the success of radiofrequency rhizotomy, just as it is in any medical procedure. Your doctor should go (or should have gone) through your medical history and do thorough physical and neurological exams. He or she will need to find out if you have radiating pain, which means you have pain that travels from your neck and into your shoulders or arms. Depending on where your neck is affected by the spinal arthritis, you may even have face pain or migraines.

With that information and an accurate diagnosis, your doctor is able to create your treatment plan and decide if it should include radiofrequency rhizotomy.

You mention that you've tried all the "usual" treatments already—that's good. Radiofrequency rhizotomy isn't a "first line of defense" treatment. Before I recommend it to my patients, I have them try medications, perhaps facet nerve blocks, and most importantly, physical therapy. I stress a physical therapy program that works on postural correction and proper body mechanics because most neck pain will respond well to physical therapy.

I believe physical therapy is important in neck pain cases because often, incorrect posture and/or improper body mechanics can make cervical spinal arthritis worse. For example, squeezing the phone between your ear and shoulder while talking is poor posture, and our necks weren't designed to hold a posture like that.

If, however, even after medications, nerve blocks, and physical therapy, you still have pain, that's when your doctor may recommend radiofrequency rhizotomy.

### **What You Can Do to Make RF More Effective**

Again, I can't guarantee that RF will completely take away your pain so that you never have to have another treatment for your cervical spinal arthritis. After RF, you will most likely have a period of pain relief (average of 1 year, as explained above). I recommend using that pain free time to improve your posture, workplace ergonomics, and body mechanics. In the long-term, those efforts will make a difference in your pain, even after the nerves regenerate.

If necessary, you can have a repeat radiofrequency rhizotomy; repeat procedures are common as patients work to manage their pain.

### **Final Thought**

Many of my patients are concerned that if their nerves have been "cooked" through RF, they will lose normal feeling. They fear that they won't be able to control their movements as well. For them, I offer this reassurance: the nerves treated with radiofrequency rhizotomy transmit specific pain signals, not signals that control movement, balance or normal sensation. RF cuts off pain signals sent by the facet joints, so if you injure another part of your neck—strain a muscle, for instance—you'll still feel that.

Dr. Fitzgerald is a 1977 graduate of Hillsdale College in Hillsdale, Mich., graduating summa cum laude with bachelor's degrees in biosciences and English literature. He earned his doctor of medicine degree in 1982 from Indiana University School of Medicine. After serving a two-year tour of duty as a commissioned officer in the U.S. Public Health Service in Wolf Point, Mont., and Cherokee, Ala., Dr. Fitzgerald completed a residency in Anesthesiology at Indiana University Medical Center.

Dr. Fitzgerald is a member of the Columbia Club, Christ Church Cathedral and the FBI Citizen's Academy Alumni Association; a supporting member of the U.S. Naval Institute; and a life member of the Law Enforcement Alliance of America.

### **Licensure and Board Certification:**

- Indiana Medical License since 1982
- Board Certification in Anesthesiology, 1990, 2006
- Subspecialty Anesthesiology Certification in Pain Management, 1996
- Certification in Pain Medicine, American Board of Pain Medicine, 1994
- Certification, American Academy of Minimally Invasive Spinal Medicine, 1999

### **Hospital Privileges:**

- St. Vincent Hospital
- Westview Hospital

### **Medical Societies:**

- Indiana State Medical Association
- American Society of Interventional Pain Physicians

### **Lecturing and Publications:**

- Lecturer at various spinal medicine, medical and osteopathic conferences in Indiana, Illinois, Minnesota, Nevada and Tennessee; 1999-2006
- Lecturer at Inaugural Meeting; American Academy of Minimally Invasive Spinal Medicine and Surgery; December, 1999
- Guest Lecturer; University Hospital of Maastricht, The Netherlands; March, 1998