

NON-OPIOID CHRONIC PAIN MANAGEMENT TREATMENTS YOU MAY NOT KNOW ABOUT

By Leonardo Kapural, MD, PhD, Carolinas Pain Institute and Center for Clinical Research

Just a decade ago, there were few evidence-based studies and trials to support the use of non-opioid chronic pain management treatments. However, the medical community now acknowledges that opioids are ineffective at treating chronic pain and also come with the risk of addiction. In light of the nation’s opioid epidemic, the Centers for Disease Control and Prevention recently issued recommendations suggesting clinicians consider alternative therapies.¹

Increasingly, all types of chronic pain – including inflammatory joint pain, back and neck pain and neuropathic pain – are being treated effectively with non-narcotic pain management techniques. Such techniques include steroid injection, radiofrequency ablation and neuromodulation.

This article provides an overview of these chronic pain treatments, including the benefits and drawbacks of each and how to determine the best treatment based on the patient.



Treatment	Pros	Cons
Steroid Injections	Non-invasive, outpatient procedure; can provide short-term relief ²	Relief may only last a few months ²
Radiofrequency (RF) Ablation	COOLIEF* Cooled RF, known as a revolutionary, minimally invasive treatment option targeting pain sources, has been clinically documented to provide chronic back pain patients up to 24 months of pain relief, improved physical function, and reduced drug utilization	Patients must first undergo a diagnostic block to determine if they are a candidate for radiofrequency ablation
Neuromodulation	Outpatient procedure; significant pain relief for up to two years with high-frequency spinal stimulation ³	Potentially not effective for inflammatory joint pain; patients can experience pain related to the device components ⁴

STEROID INJECTIONS

Steroid injections are often the first line of treatment pain physicians consider for patients dealing with chronic back or joint pain. In my practice, I have found that steroid injections are particularly effective for patients who need to decrease pain and improve function in the short term in order to begin physical therapy soon after an injury. The procedure itself involves injecting medication such as cortisone into the area where a patient is experiencing pain due to inflammation caused by either a pinched, swollen nerve inside the spinal canal or inflammation inside a joint due to injury or osteoarthritis.



By injecting steroids into the epidural area along the sides of the spine, or directly into the knee, hip or shoulder, inflammation and pain can decrease for months at a time.² Though steroid injections can provide relief for months at a time², I've found in my patients that they may have to be repeated for continued pain relief.

RADIOFREQUENCY ABLATION

Radiofrequency (RF) ablation is a course of treatment pain physicians use to provide patients long-term chronic pain relief without damaging motor function. Cooled RF, a variation of RF ablation, is the only currently known thermal radiofrequency system using water-cooled technology to safely deactivate difficult-to-reach target nerves. Cooled RF is used to provide relief for chronic pain patients with chronic knee, cervical, lumbar back sacroiliac joint, thoracic facet, discogenic back and hip joint pain.⁵ Cooled RF can also be used for patients who aren't surgery candidates or who choose to avoid surgical options.

Before having the procedure, patients must first undergo a diagnostic block that delivers a local anesthetic to target nerves. This ensures that the pain physician is targeting the correct nerves and that the Cooled RF treatment will provide relief. If a patient's pain is reduced by more than 50%, then we consider treating them with Cooled RF.⁶ The procedure itself is done on an outpatient basis, lasts no more than 10 to 20 minutes and uses needles to ablate the nerves while the patient is under local anesthesia.

Often, patients are able to walk out of the office with no numbness and no pain. In my practice, we see minimal complications with this treatment and patients often experience pain relief for up to one year. In fact, recent studies of Cooled RF found that in 74.1% of osteoarthritis knee patients, pain was reduced by at least 50% at six months and maintained in 65% of those patients for a full 12 months post-procedure.^{7,8} Additionally, studies conclude that among patients diagnosed with osteoarthritis of the knee, Cooled RF provides significantly greater and longer-lasting pain relief, improved physical function and higher patient satisfaction than intra-articular steroid injections.

NEUROMODULATION

Neuromodulation is a treatment that uses an implantable device to alter certain pathways in the nervous system which can provide immediate and dramatic pain relief.⁹ Spinal cord stimulation is a commonly used form of neuromodulation that is most commonly indicated in neuropathic back and leg pain;¹⁰ in my experience, it is not as effective for inflammatory joint pain.

Spinal cord stimulation involves an outpatient procedure in which the patient is sedated and a small pacemaker battery and electrodes are implanted into the patient. These electrodes are positioned within the epidural space of the patient's spine to stimulate the spinal cord. By delivering small currents to the pain pathways inside the spinal cord, the electrodes are able to shut off chronic pain signals. In a recent study, a majority of patients experienced more than 65% pain relief at two-year follow up with high-frequency spinal stimulation.³ However, because this treatment is implanted in the body, complications can include pain related to the device components and wound infection.⁴

In my pain management practice, I've found each of these treatments provide effective and meaningful chronic pain relief to different populations of patients. By integrating these evidence-based alternative therapies into their practices, pain physicians can provide their patients with high-quality care without over-reliance on opioids.

Leonardo Kapural, MD, PhD, has a consulting/speaking/financial relationship with Avanos Medical, Inc.

1. Dowell, et al. D. CDC Guideline for Prescribing Opioids for Chronic Pain – United States, 2016 [Internet]. CDC.gov. 2016 [cited 2017Sep17]. Available from: www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm
2. KS&R. Halyard sponsored study: Osteoarthritis Pain Landscape & Patient Journey. 2015. Data on file.
3. Kapural, Leonardo, and Et Al. "Comparison of 10-KHz High-Frequency and Traditional Low-Frequency Spinal Cord Stimulation for the Treatment of Chronic Back and Leg Pain: 24-Month Results From a Multicenter, Randomized, Controlled Pivotal Trial." *Neurosurgery*, vol. 79, no. 5, Nov. 2016, pp. 667–677., doi:10.1227/NEU.0000000000001418.
4. Eldabe, Sam. "Complications of Spinal Cord Stimulation and Peripheral Nerve Stimulation Techniques: A Review of the Literature." *Pain Medicine*, vol. 17, 2016, pp. 325–336.
5. Avanos Medical. COOLIEF* Knee: Cooled Radiofrequency.
6. Avanos Medical. Hip Cooled RF Training Presentation, Knee Cooled RF Training Presentation and Lumbar Cooled RF Training Presentation. 2017.
7. Halyard Health Inc. sponsored study: A Prospective, Multi-Center, Randomized, Clinical Trial Evaluating the Safety and Effectiveness of Using COOLIEF™ Cooled Radiofrequency Probe to Create Lesions of the Genicular Nerves and Comparing Corticosteroid Injection in the Management of Knee Pain. Final results 03Apr2017. Study available upon request from Avanos.
8. Davis T. Cooled RF Ablation Superior to Corticosteroids in Knee Osteoarthritis. *Pain Medicine News* [Internet]. 2017Feb2; Available from: [http:// www.painmedicineneeds.com/Multimedia/Article/02-17/Cooled-RF-Ablation-Superior-to-Corticosteroids-in-Knee-Osteoarthritis/40262/ses=ogst?enl=true](http://www.painmedicineneeds.com/Multimedia/Article/02-17/Cooled-RF-Ablation-Superior-to-Corticosteroids-in-Knee-Osteoarthritis/40262/ses=ogst?enl=true)
9. "Neuromodulation." ColumbiaDoctors, Columbia University Department of Neurological Surgery, www.columbianeurosurgery.org/treatments/neuromodulation/.
10. "Spinal Cord Stimulation's Role in Managing Chronic Disease Symptoms." Neuromodulation.com, International Neuromodulation Society, www.neuromodulation.com/spinal-cord-stimulation.

There are inherent risks in all medical devices.
For more detail on indications, cautions, warnings
and contraindications, [click here](#).