

# Pain disruption therapy treats source of chronic back pain

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People with treatment-resistant back pain may get significant and lasting relief with dorsal root ganglion (DRG) stimulation therapy, an innovative treatment that short-circuits pain, suggests a study presented at the [ANESTHESIOLOGY 2018](#) annual meeting.

Chronic pain—pain that lasts three months or more—occurs when nerves continue to send signals to the brain after the original source of the pain is gone. An alternative to [spinal cord stimulation](#), DRG stimulation disrupts pain signals by specifically targeting the nerves responsible for the pain. This may avoid unnecessary stimulation of nerve fibers that come from non-painful areas, which may occur with spinal cord stimulation. It also helps to meet the need for non-drug pain treatments in select [patients](#).

"People in our study who had DRG stimulation reported significant improvement in pain even after a year, which is notable," said Robert J. McCarthy, Pharm.D., lead author of the study and professor of anesthesiology at Rush University Medical Center, Chicago. "They had tried numerous therapies, from drugs to spinal cord stimulation to surgery, but got little to no lasting pain relief. For most, DRG stimulation really improved their quality of life."

A cluster of neurons located on both sides of each vertebra, the DRG serves as the pain and sensation gateway between nerves in different parts of the body and the spinal cord and brain. DRG stimulation therapy interrupts the pain signal between the painful area and the brain. A

pacemaker-like [device](#) implanted under the skin in the lower back sends small electronic pulses through a wire placed near the DRG that is connected to the nerve associated with the pain. The pulses replace the pain with another more tolerable sensation, such as tingling or numbness. The level of current provided by the device is programmed by a physician anesthesiologist or other pain specialist based on the patient's pain.

DRG stimulation offers two advantages over spinal cord stimulation. For the latter, a wire is placed along the spinal cord so the electronic pulses are sent along the spine, but don't target the specific pain source as DRG stimulation does. Additionally, lower levels of current are required to achieve benefit with DRG stimulation because there is less spinal fluid covering the DRG than the spinal cord.

In the study, researchers implanted DRG stimulation devices in 67 people with chronic back pain. Patients were followed for 3 to 18 months. Seventeen patients had the device for more than a year. The study found:

- Before implantation of the DRG device, most participants described their pain as 8 on a scale of 1 to 10 (with 10 being the worst pain imaginable). After follow-up, the median (most common) pain score fell to 5, a decrease of 33 percent, which the authors note is a clinically significant improvement.
- Patients reported a 27 percent decrease (median) in disability, or patient-reported limitations to daily living, due to pain.
- 94 percent of patients reported the treatment was beneficial.
- Five patients (7.4 percent) had to have the wires re-implanted, 2 (3 percent) had them removed after they were infected and 1 had the device removed due to a complication.

"There is a real need for non-drug therapy relief for people with chronic

pain," said Dr. McCarthy. "Although it is more technically difficult to place the electrodes, it may be an option for patients who haven't benefited from other [pain](#) therapies, and may reduce or eliminate the need for opioids."

Provided by American Society of Anesthesiologists

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