

## **MEDICAL BREAKTHROUGHS** **RESEARCH SUMMARY**

TOPIC: DTM TO CONTROL CHRONIC BACK PAIN  
REPORT: **MB #4956**

**BACKGROUND:** Most back pain is caused by muscle strain, injury, or spinal deformity, but can be caused by a systemic or rheumatic illness. It is considered chronic pain when it lasts for more than three months and can develop anywhere from the neck to the lower spine. The exact cause of pain may be difficult to identify because it can originate in soft tissue, bone, discs, or nerves. People who are more likely to develop low back pain are those who smoke or work at jobs that require repetitive heavy lifting or involve vibration from vehicles or industrial machinery. Sports such as cross-country skiing, as well as driving a vehicle for a long time can also cause back pain. Conditions that are more prevalent in the elderly such as spinal osteoarthritis or spondylitis and compression fractures can also cause pain. Consequently, older people are at higher risk for back pain.

(Source: <https://www.cedars-sinai.org/health-library/diseases-and-conditions/c/chronic-back-pain.html>)

**DIAGNOSIS AND TREATMENT:** Diagnosing chronic pain can be difficult. The person experiencing it is the only one who can identify and describe it. Doctors will want to know some things about the pain such as where the pain is, how intense it is and how often it occurs, how much it's affecting life and work, what makes it worse or better, whether you have a lot of stress or anxiety, and whether you've had any illnesses or surgeries. They may also examine your body and order blood tests, electromyography to test muscle activity, imaging tests, nerve conduction studies to see if your nerves are reacting properly, reflex and balance tests, spinal fluid tests, and urine tests. There are several different approaches to treating chronic pain which vary from person to person. The best treatment plans use a variety of strategies such as medications, lifestyle changes and therapies.

(Source: <https://my.clevelandclinic.org/health/diseases/4798-chronic-pain>)

**NEW THERAPY FOR BACK PAIN:** Results from a large, multi-center randomized controlled trial demonstrated statistically significant back pain relief with differential target multiplexed (DTM) spinal cord stimulation (SCS) compared to conventional SCS. Three-month results showed 80 percent of patients with chronic back pain treated with DTM reported at least 50 percent pain relief, compared with 51 percent of patients treated with conventional SCS. DTM has been studied in animal models and showed significant reversal of pain behaviors compared to either low frequency or high frequency alone. Furthermore, preclinical studies investigating the genome of nerve-injured animals suggests that the DTM waveform has a greater impact in the neural-glia interaction between the cells than other frequencies. Doctor Burnette says at 12 months 84 percent of patients with chronic back pain treated with DTM SCS reported at least 50 percent pain relief, compared to 51 percent of patients treated with conventional SCS, as measured by the Visual Analog Scale (VAS), a widely used and accepted measure for pain intensity.

(Source: <https://neuronewsinternational.com/dtm-scs-shown-superior-medtronic-intellis/>)

**FOR MORE INFORMATION ON THIS REPORT, PLEASE CONTACT:**

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**If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting Marjorie Bekaert Thomas at [mthomas@ivanhoe.com](mailto:mthomas@ivanhoe.com)**