

MEDICAL BREAKTHROUGHS **RESEARCH SUMMARY**

TOPIC: WIRELESS IMPLANTS FOR SPINAL CORD INJURIES: MEDICINE'S NEXT BIG THING?
REPORT: MB #4980

SPINAL CORD STIMULATION BACKGROUND: Spinal cord stimulators consist of thin wires, and a small, pacemaker-like battery pack the electrodes are placed between the spinal cord and the vertebrae, and the generator is placed under the skin, usually near the buttocks or abdomen. Spinal cord stimulators allow patients to send the electrical impulses using a remote control when they feel pain. Both the remote control and its antenna are outside the body. Spinal cord stimulation is used most often after nonsurgical pain treatment options have failed to provide sufficient relief. Spinal cord stimulators require two procedures to test and implant the device: the trial and the implantation. It is typically used along with other pain management treatments.

(Source: <https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/treating-pain-with-spinal-cord-stimulators#:~:text=A%20spinal%20cord%20stimulator%20is,spinal%20cord%20to%20relieve%20pain.>)

BEST CANDIDATES FOR SPINAL CORD STIMULATION: Spinal cord stimulation is used most often after nonsurgical pain treatment options have failed to provide sufficient relief. Spinal cord stimulators may be used to treat or manage different types of chronic pain, including back pain, especially back pain that continues even after surgery, post-surgical pain, arachnoiditis, heart pain that's untreatable by other means, injuries to the spinal cord, nerve-related pain, peripheral vascular disease, complex regional pain syndrome, pain after an amputation, and visceral abdominal pain and perineal pain.

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NEW TECHNOLOGY FOR ELECTRICAL STIMULATION: Researchers at Rice University have developed new implants for implantation in patients with spinal cord injuries that provide electrical stimulation. The new research investigates the ability to power and program multisite bio stimulators using a single transmitter. In the laboratory, the researchers showed an alternating magnetic field generated and controlled by a battery-power transmitter outside the body, potentially worn on a belt or harness, could deliver power and programming to two or more implants that are at least 2.3 inches away.

(Source: <https://news.rice.edu/2021/05/10/timing-is-everything-in-new-implant-tech/>)

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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