

## Electrical Stimulation Provides Pain Relief

*Ed Note: The following is a press release from Blackwell Publishing.*

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People suffering from chronic pain caused by a nerve injury are experiencing relief through the use of electrical stimulation of the spinal cord. The journal *Neuromodulation*, published by Blackwell on behalf of the International Neuromodulation Society and the International Functional Electrical Stimulation Society, just released findings from a series of new studies that reveals a successful new way to apply electrical fields to the spinal cord for pain relief. These studies review a new spinal cord stimulation system recently approved by the FDA for chronic pain.

Half of all physicians' office visits in the U.S. are related to pain, creating an estimated economic cost to society of \$100 billion annually, and afflicting approximately 70 million Americans.[1] Half of Americans suffering from chronic pain become partially or totally disabled. Spinal cord stimulation (SCS) has been used for over 30 years for the treatment of chronic pain, and patients using SCS therapy visit hospitals less frequently, use fewer narcotics and opiates, and lead more healthy and active lifestyles. [2] While technology has helped to improve the SCS devices and make them more flexible, it has challenged researchers and medical engineers to develop an adaptable system with an increased number of stimulation contacts and flexible programming options.

The data published is from a multi-center study on the use of a new neurostimulation system. This new system is unique in its use of a current-shifting programming technique for spinal cord stimulation. The changing distribution of electrical current shifts the electric field along the spinal cord, resulting in real-time, dynamic paresthesia steering. This process is known as continuous electric field adjustment (CEFA).

Author Dr. John Oakley observed, "The use of continuous electric field adjustments enabled us to use up to 71 combinations, assessed in just four minutes. This, along with patient feedback, can help implanting physicians realize the best locations of leads and therefore maximize therapeutic possibilities. It's about helping patients experience less pain."

### About the Author

John Oakley, MD is the director of pain management for the Northern Rockies Pain Rehabilitation Center in Billings, Montana. A board certified neurological surgeon and board certified in Pain Management through the American Board of Pain Medicine, Dr. Oakley is the principal author of the acute study performed at Yellowstone Neurosurgical Associates, Pasadena Rehabilitation Institute, Pacific Pain treatment Center and Advanced Bionics Corporation. For questions and interviews, please e-mail Dr. Oakley at [JoShir@aol.com](mailto:JoShir@aol.com) or call 406-238-6650.

### About Neuromodulation

*Neuromodulation*, the journal of the International Neuromodulation Society and the International Functional Electrical Stimulation Society, is a must-read for clinicians, engineers and scientists who want timely information on implantable devices to improve the function of the body. The journal redefines the neuromodulation field, covering the therapeutic alteration of activity in the central, peripheral or autonomic nervous systems, electrically or pharmacologically, by means of implanted devices. For additional information on the journal, please visit [www.blackwellpublishing.com/ner](http://www.blackwellpublishing.com/ner).

### About the International Neuromodulation Society

The goal of the International Neuromodulation Society (INS) is to promote therapeutic neuromodulation in its broadest sense at a clinical and scientific level. The scientific objectives of the INS are to increase the understanding of the mechanisms of neuromodulation and to evaluate existing and new applications. The clinical objectives are to refine the indications for this therapy and to extend the application and availability, thereby maximizing the benefit individually and collectively. For more information, please visit <http://www.neuromodulation.com/>.

### About the International Functional Electrical Stimulation Society

The purpose of IFESS is to promote the research, application, and understanding of electrical stimulation as it is utilized in the field of medicine. IFESS membership is composed of primarily academic leaders in the field of biomedical engineering, physical therapists, medical doctors, and members of the electrical stimulation manufacturing community. For more information, please visit <http://www.ifess.org/>.

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1 MedTech Insight, Pharmacologic and Device-Based Therapeutic Approaches to Pain Management, #A360, August 2003 2 Krames, E., "Implantable Technologies: Spinal Cord Stimulation and Implantable Drug Delivery Systems," the National Pain Foundation web site (<http://www.painconnection.org/>).

## What is neuromodulation?

Neuromodulation is defined as the therapeutic alteration of activity in the central, peripheral or autonomic nervous systems, electrically or pharmacologically, by means of implanted devices.

At the present time the devices used are mainly "stimulators" and "pumps" and the major applications are in managing chronic pain, movement disorders, spasticity, and epilepsy. Neuroprosthetics such as cochlear implants and sacral root stimulators are commonly included.

Clinicians, scientists and industry are united in this growing, diverse multidisciplinary field which delivers enormous benefit to patients by improving function and reducing suffering.

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