



THE PAIN JOURNAL

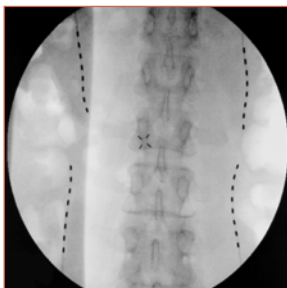
Mid Atlantic Spine and Pain Physicians
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Peripheral Nerve Stimulation: A promising new treatment option for chronic pain

An Original Contribution by Jeff S. Berger, D.O.

Spinal cord stimulation (SCS) has been in use for over 30 years to provide safe and effective pain relief from a variety of conditions including failed back surgery syndrome (FBSS), radicular pain of the extremities due to disc herniation, spinal stenosis, intractable angina, ischemic extremity pain and complex regional pain syndromes types I and II.^{1,2} More recently, SCS has been successfully utilized for the treatment of chronic abdominal pain, mesenteric ischemia, and irritable bowel syndrome.^{3,4,5} The procedure involves placing small electrode leads through a needle into the epidural space to modulate pain transmission via direct stimulation of the spinal cord. In contrast to more invasive surgical treatments, SCS has the advantage of lower risk and less morbidity along with a reversible nature that does not alter the architecture of the spine. SCS also has the benefit of a screening trial period to predict effectiveness prior to permanent implantation. Compared to reoperation for FBSS, SCS has demonstrated substantial reductions in healthcare utilization and significant long term cost savings.^{6,7}



SCS has revolutionized treatment options for patients suffering from chronic nerve pain of the arms and legs with proven efficacy in numerous studies. However, the use of SCS to treat low back, neck, chest and abdominal pain has proven far more challenging with unreliable long term pain relief.^{3,8} Adequate low back stimulation coverage typically necessitates midline lower thoracic lead placement to direct electrical current into the deeper spinal

cord structures. Electrode placement at higher levels often captures low back pain but is limited by the large width of cerebrospinal fluid at that level which may promote stimulation of dorsal roots leading to uncomfortable, band-like dermatomal stimulation patterns. While stimulation montages often produce favorable parasthesia coverage at the time of lead placement, long term relief of low back pain is unreliable with dramatic alterations in stimulation coverage and perception due to changes in the electrical fields within the spinal cord.⁹ ➔ *continued on page 3*

Patient Success: 15 Years of Agonizing Back Pain Ends

Continuing to live in pain wasn't an option; neither were the heavy medications

As an office manager in the catering business, Christy had a demanding job. She was constantly getting up and down from her desk throughout the day, and often found herself running into the kitchen, talking to chefs, and taking deliveries among other physical tasks. To those around her, she was a natural at her job. What they didn't know was how much deep pain Christy was experiencing. Every day she tolerated her aches to get through the day only to let all her emotions out when she arrived home at night.

Christy had been experiencing her pain off and on for 15 years. It all started when she was involved in a serious car accident in 1994 which first caused her back pain. Over the years Christy gained a lot weight which didn't help... ➔ *continued on page 4*



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MASPP OFFICE LOCATIONS:

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- Delmarva Surgery Center
101 Chesapeake Blvd., Suite C
Elkton, MD / 443-245-3470
- www.midatlanticspine.com

Current and cutting-edge information on treating spine and pain related disorders.

NATIONAL HEALTH EVENTS**July 2009**

Eye Injury Prevention Month
www.foh.dhhs.gov/Public/NYCU/eyeinjury.asp

Hemochromatosis Awareness Month
www.irondisorders.org

International Group B Strep Awareness Month
www.groupbstrepinternational.org

Juvenile Arthritis Awareness Month
www.arthritis.org

UV Safety Month
www.aao.org/eyemd

Dental Awareness Day (July 9)
www.healthnewsdigest.com/news/Dental_330

National Youth Sports Week (July 20-24)
www.nrpa.org

Phelan-McDermid Syndrome Week (July 27-Aug. 2)
www.nrpa.org

August 2009

Cataract Awareness Month
www.aao.org/aaosite/eyemd/cataract.cfm

Children's Eye Health and Safety Month
www.preventblindness.org

National Immunization Awareness Month
www.cdc.gov/vaccines

Psoriasis Awareness Month
www.psoriasis.org

Spinal Muscular Atrophy Awareness Month
www.curesma.org

National Kids Day (Aug. 1)
www.kidsday.net

National Minority Donor Awareness Day (Aug. 1)
www.nationalmottep.org

World Breastfeeding Week (Aug. 1-7)
worldbreastfeedingweek.org

Healthy Advice Q&A

Patient questions answered by Frank J. E. Falco, M.D.



Q: *I heard you on the radio last Saturday morning. Any plans to broadcast daily?*
 – Cassandra N., Havre de Grace, MD

A: Great to learn you heard our new radio show! “Pain Talk” recently began broadcasting on Saturday mornings on WILM 1450 AM. Response and feedback to the program has been excellent and very positive. Because of this, we have added an encore presentation of Saturday shows on Sundays, 7 a.m. on WDOV 1410 AM. Now we cover the entire state of Delaware and hopefully reach all those suffering with pain to provide some insight on pain and pain treatments. Visit our website to submit a question to be answered on-air.

Q: *Is there a good exercise for over 60-year-old males?* – Pat D., Seaford, DE

A: Exercising is important at every age. Over 60, you want to try to get in 30 minutes of exercise a day to since your metabolism is slowing down in addition to lessening your chances of developing diabetes and heart disease. The best exercise routine should combine stretching, strength training, and cardio. Stretching promotes flexibility, makes movement easier, and decreases risk of muscle injury. Strength training promotes muscle strength and builds your bones. Cardio provides many benefits; it increases metabolism and reduces stress, risk of heart disease and some types of cancer. Consult with your physician before starting a new program.

Q: *What is urinary incontinence? What causes it?* – Chrissy V., Avon Grove, PA

A: When you're not able to hold your urine until you can get to a bathroom, you have what's called urinary incontinence. More than 13 million Americans experience loss of bladder control. There are many causes including infection, medications, weak muscles, a blockage, nerve injury, birth defects, strokes, complications from surgery, physical problems associated with aging, or chronic diseases like diabetes, multiple sclerosis, and Parkinson's disease. Both women and men can have trouble, however, women suffer twice as often as men due to problems with the muscles that help to hold or release urine.

Q: *Are there different types of urinary incontinence?* – Jack L., Claymont, DE

A: Yes, several. “Stress Incontinence” is most common in women, causing small urine amounts to leak during physical movement. “Urge Incontinence” causes large amounts to leak at unexpected times, including during sleep or after drinking. A symptom of “Functional Incontinence” is not being able to reach a toilet in time because of physical disability or obstacles. “Overflow Incontinence” causes urine to leak due to the bladder being full and never empty. “Transient Incontinence” causes urine to temporarily leak due to a medical condition or infection. “Mixed Incontinence” is a combination, most often stress and urge incontinences together.

Health Tip: Cut fat; avoid the obvious such as fried foods, burgers and other fatty meats.

Peripheral Nerve Stimulation: A promising new treatment for chronic pain

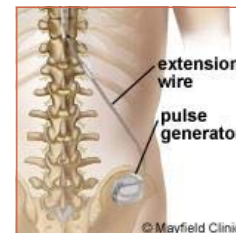
Continued from page 1 -- written by Jeff S. Berger, D.O.

Peripheral nerve stimulation (PNS) has recently emerged as a promising alternative to spinal cord stimulation for regional pain coverage.^{10, 11, 12, 13} PNS involves placement of electrode leads through a needle just underneath the skin surface. These leads are then attached to a small implanted battery with a 5-10 years lifespan. PNS has many of the same advantages of SCS given its reversible nature, trial period and low surgical risk. However, it offers several benefits over SCS including: 1) reliable production of controlled analgesia across localized chest wall, axial spine, abdomen or pelvic pain sites 2) safe, less invasive approach without risks associated with epidural lead placement 3) potentially decreased risk of lead migration 4) potentially increased longevity of pain relief with decreased risk of neuroplasticity and spinal cord accommodation.^{14, 15} PNS has demonstrated efficacy even in patients who have failed transcutaneous electrical nerve stimulation (TENS), potentially due to its ability to bypass high skin resistance to provide deeper electrical stimulation to involved dermatomes at lower stimulus intensities.¹¹

Several case reports have emerged in the literature describing the use of PNS to provide significant relief from well-localized chronic pain syndromes involving the low back, abdomen and pelvis.^{10, 11, 12, 13} PNS in combination with SCS has recently been described for post-laminectomy syndrome with back and leg pain.¹² In these reports, PNS is not being applied to stimulate a single, identifiable peripheral

nerve but rather a diffuse subcutaneous network of afferent nerves just beneath the skin surface which converge back on the spinal cord. A major perceived shortcoming of PNS has been its narrow field of coverage necessitating limited application to well-localized regions of pain.^{11, 16} In the past, leads were positioned to maximize individual lead field coverage as the fat underneath the skin was assumed to make for poor conductance, high impedance and, as a result, poor tissue conduction between leads.

At Mid Atlantic Spine and Pain Physicians, we have been using a novel technique that expands PNS field coverage, allowing peripheral stimulation of large regions of pain while continuing to provide excellent pain relief. Using this technique, we create an electric bipole between two widely spaced electrode leads to increase the field size and facilitate lead "cross-talk". Identification of a precise pain generator may not be possible in all patients and may not be predictive of response to PNS. Through the use of PNS with "cross talk" capabilities we have provided numerous patients with extraordinary relief of their chronic low back, mid back, neck, head, abdomen and chest wall. In nearly all cases, function has improved significantly with decreased pain, less need for pain medication and improved quality of life. ®



References: 1) Shealy CN, Mortimer JT, Reswick JN. "Electrical inhibition of pain by stimulation of the dorsal columns: preliminary clinical report." *Anesth Analg* 1967; 46:489-491. 2) Oakley, JC, Prager, JP. "Spinal cord stimulation mechanisms of action." *Spine* 2002; 27(22):2574-83. 3) Khan, YN, Raza SS, Khan, EA. "Application of spinal cord stimulation for the treatment of abdominal visceral pain syndromes: case reports." *Neuromodulation* 2005; 8(1):1-27. 4) Ceballos, A, Cabexudo L, Bovaira M, Fenolosa P, Moro B. "Spinal cord stimulation: a possible therapeutic alternative for chronic mesenteric ischemia." *Pain* 2000; 87: 99-101. 5) Krames D, Mousad D. "Spinal cord stimulation reverses pain and diarrheal episodes of irritable bowel syndrome: a case report." *Neuromodulation* 2004; 7(2):82-88. 6) Mekhal, NA et al. "Cost benefit analysis of neurostimulation for chronic pain." *Clin J Pain* 2004;20:462-468. 7) North RB, Kidd D, Shipley J, Taylor R. "Spinal cord stimulation versus reoperation for failed back surgery syndrome: A cost effectiveness and cost utility analysis based on a randomized, controlled trial." *Neurosurgery* 2007;61(2): 361-368. 8) Tide, JM et al. "The use of spinal cord stimulation in refractory abdominal visceral pain: Case reports and literature review." *Pain Practice* 2006;6(3):197-202. 9) Sharan A, Cameron T, Barolat G. "Evolving patterns of spinal cord stimulation in patients implanted for intractable low back and leg pain." *Neuromodulation* 2001;5(3):167-179. 10) Verills P, Mitchell B, Vivian D, Sinclair C. "Peripheral nerve stimulation: A treatment for chronic low back pain and failed back surgery syndrome?" *Neuromodulation* 2009;12(1):68-75. 11) Bernstein C, Paicius RM, Barkow SH, Lempert-Cohen C. "Spinal cord stimulation in conjunction with peripheral nerve field stimulation for the treatment of low back and leg pain: a case series." *Neuromodulation* 2008;11(2):116-123. 12) Kruttsch JP, McCeney MH, Barolat G, Tamimi MA, Smolenski A. "A case report of subcutaneous peripheral nerve stimulation for the treatment of axial back pain associated with postlaminectomy syndrome." *Neuromodulation* 2008;11(2):112-115. 13) Verills P, Mitchell B, Vivian D, Sinclair C. "Peripheral nerve field stimulation: is age an indicator of outcome?" *Neuromodulation* 2009;12(4):60-67. 14) Verills P, Mitchell B et al. "Peripheral nerve stimulation: A treatment for chronic low back pain and failed back surgery syndrome?" *Neuromodulation* 2009;12(1). 15) Paicius RM, Bernstein CA, Lempert-Cohen C. "Peripheral nerve stimulation for the treatment of chronic low back pain: preliminary results of long-term follow-up: a case series." *Neuromodulation* 2007;10:279-290. 16) Paicius, Bernstein, Lempert-Cohen. "Peripheral nerve field stimulation in chronic abdominal pain." *Pain Physician* 2006.

Self-Help Pain Relief: Spinal Cord Stimulation

An implantable medical device gives hope to patients suffering from chronic pain

MASSP physicians really do care about your pain and are more experienced than most doctors to treat not only acute pain, but also chronic pain. Our physicians may recommend spinal cord stimulation (SCS) to relieve pain from certain medical conditions. Results from SCS vary from patient to patient. Some experience a little relief while others become nearly pain free and are able to enjoy the activities they used to avoid before the stimulator. This procedure also often results in a decrease or elimination of pain medication altogether.

SCS is best described as follows by the Britain Pain Society, "a stimulator is a small, battery powered device that is designed to deliver precise amounts of electricity to your spine. What you feel is under your control; you should adjust the stimulator until you feel a pleasant tingling covering the area of pain." The electricity in the spine can intercept and change the pain messages that are normally sent to your brain so you no longer feel the pain or feel less of it as a response.

If you have any questions about SCS or if this procedure is right for your pain, it is important to ask your doctor. A physician can discuss the benefits of trying a SCS trial before a permanent SCS if they feel you are the right candidate for this procedure. ®

Health Tip: Exercising daily reduces the risk of heart disease and strengthens bones.

RECOMMENDED RESOURCES

British Pain Society: Spinal Cord Stimulation for Pain (information for patients)
http://www.britishpainsociety.org/book_scs_patient.pdf

Patient Stories: Medtronic
<http://professional.medtronic.com/downloads/spinal-cord-stimulation/SCS-stg1-patient-stories.pdf>

St. Jude Medical: Connect with a Patient Ambassador (patient stories)
<http://www.poweroveryourpain.com/sb/support/ambassador/>

American Pain Foundation's Pain Q&A: Intrathecal Pumps and Spinal Cord Stimulators
<http://www.painfoundation.org/page.asp?file=QandA/Pumps.htm>


MASPP News: Radio Waves

New weekly radio program to discuss chronic pain

MASPP will begin hosting a new weekly radio show, "Pain Talk", to educate radio listeners on chronic pain. The show will air Saturday mornings at 6:30 a.m. on WILM 1450AM starting June 27 and on Sunday mornings at 7:00 a.m. on WDOV 1410AM starting July 11. MASPP's own Dr. Frank Falco will host on the new weekly health program.

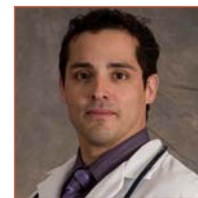
Both the WILM and WDOV radio stations are owned and operated by Clear Channel Communications and broadcast news talk formats. Together they cover the entire state of Delaware and nearby towns in Maryland. WILM broadcasts in Wilmington and WDOV in Dover.

Topics on the show will vary week-to-week and cover an array of painful conditions and treatment options for pain. Upcoming programs will include the ins and outs of diagnostic testing, groundbreaking stem cell and regenerative therapies, same day spine surgery procedures, and painful disorders, such as Reflex Sympathetic Dystrophy (RSD), spasticity, cancer pain, migraine headaches, and more. Special guests will include patients who have suffered from pain and will share their own personal journey and recovery, and other attending physicians from our medical practice.

Listeners may submit questions through the MASPP website. Encore presentations of past shows will be made accessible through the website. 


MASPP Staff: Meet Dr. Renato Vesga

Following His Heart, All Is Possible



Growing up in Harlem had its challenging times, but Dr. Vesga's mom stayed strong and was the driving force in the family. She kept her children off the streets, stressed education, and made certain they were on track for a better life. Mrs. Vesga wanted the best for her children, and that included for her son to follow his childhood dream of becoming a doctor.

An inspirational memory of Dr. Vesga was participating in the Millrose Games in Madison Square Garden as a high school senior. Running is a passion of Dr. Vesga and competing in the track and field event was prestigious. His team wasn't expected to medal in the 4x8 100 event, yet they came from behind to place second, a grand accomplishment.

After high school, Dr. Vesga attended Columbia University majoring in pre-med. Questioning his medical career path, he instead graduated with a B.A. degree in anthropology. He started a career in finance only to realize his heart was with medicine after all. After a few years on Wall Street, he left to earn a degree from MCP Hahnemann University School of Medicine. While practicing in Philadelphia and seeing patients in pain, he realized he wanted to do more. Pain management soon became his specialty and he has since become board certified. Following his heart, all has become possible. 

For an array of pain topics, tune into "Pain Talk" on the weekends.

6:30 a.m. Saturdays on WILM 1450AM and 7:00 a.m. Sundays on WDOV 1410 AM

PAIN LECTURE SERIES

Fridays • 7:00-8:00 a.m.
MASPP Elkton Office
Open to the public; Free

July 24
Interventional Pain Procedures
– Part I

July 31
Interventional Pain Procedures
– Part II

August 7
Epidemiology, Economic Impact, Sociology of Pain

August 21
Evaluation of the Pain Patient

August 28
Chiropractic and Manipulation Under Anesthesia

September 4
Spinal Cord Stimulation

Please note the Pain Lecture Series is on summer hiatus during the first half of July.

Patient Success: 15 Years of Agonizing Back Pain Ends


Continued from page 1 -- Living in pain wasn't an option; neither were the medications

...her pain situation. She successfully lost the weight, but then she was involved in more accidents that provoked her pain more.

At home, her tasks around the house became increasingly challenging. Even trips to the supermarket were difficult for Christy. She found it hard to push the grocery cart and asked shoppers to assist with placing items in her cart. Stock boys would load her car and her family would unload her bags.

Christy's pain worsen over time, to the point she could not function like she once had. Standing was too painful as was sitting. The best position was to lie down, an impossible pose with all she had to do. Continuing to live in pain was no longer an option, neither were the heavy medications that she was building up tolerances.

After six nerve block attempts, Christy had a Peripheral Nerve Stimulation, a non-invasive surgical technique in which electrodes are placed along the course of peripheral nerves to control pain. It is an extremely safe, efficient, and effective way to ameliorate a variety of severe neuropathic pain conditions. Christy's outcome?

"The relief was amazing," Christy says. "I felt the sensation on the table once it was turned on and cried because the pain was diminishing...It has been a godsend! I have my endurance back and my life." 



Health Tip: Apples are more effective at waking you up in the morning than caffeine.