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10 Things to Know About Neuromodulation Minimally Invasive Procedures to Reduce or Alleviate Pain

NEW YORK – February 24, 2010 – Robert Foreman, Ph.D., president of the North American Neuromodulation Society (NANS), stated, “Neuromodulation is among the most rapidly growing fields in medicine today. It can help to relieve chronic back pain, pain from cancer and other nerve injuries, pain from Complex Regional Pain Syndrome (CRPS) and Reflex Sympathetic Dystrophy (RSD) greatly improving the quality of life for patients.”

Neuromodulation encompasses the application of targeted electrical, chemical and biological technologies to the nervous system in order to improve function and quality of life. The appropriate therapy (low level electrical pulses or micro-doses of medicine) are targeted to nerves along the spinal cord to block pain signals to the brain

According to Joshua Prager, MD, MS, former president of NANS, “Neuromodulation can give people their lives back. Patients have gone from wheelchairs back to the tennis court, back to the sidelines of their children’s soccer games, back to their jobs. There are few treatments that can improve the activity level and the psychological outlook of a patient in pain like neuromodulation techniques.” NANS has compiled ten things everyone should know about neuromodulation:

1. Neuromodulation alleviates or lessens pain without putting patients into a “drug fog.”

By relieving pain with neuro-stimulation or a drug-delivery system, that provides micro-doses of medicine, the patient can avoid some side effects, including excessive sedation or clouding of thoughts.

2. Potential neuromodulation patients can “test drive” the modality.

Neuromodulation is administered via minimally invasive techniques and it is a rare medical treatment that the patient can “test drive” during an incisionless trial before final consideration of the device’s insertion.

3. Neuromodulation is FDA approved and has been used in practice for two decades.

Extensive research and clinical trials have documented neuromodulation’s ability to decrease chronic pain and improve the quality of life for patients.

4. Neuromodulation can be applied through different techniques.

Neuromodulation comprises four treatment modalities: spinal cord stimulation, spinal drug delivery systems, brain stimulation and peripheral nerve stimulation. These treatments should only be administered or provided by a trained Physician who specializes in this type of care.

5. Neuromodulation implants can be removed.

Once implemented, if the patient chooses to stop the treatment, the device can be removed. The procedure is reversible.

6. Neuromodulation improves the quality of life for patients in pain.

The American Pain Foundation estimates that chronic pain affects 76.5 million people in the U.S., while the National Institutes of Health estimates that chronic pain costs the U.S. economy \$100 billion a year in lost work time and medical expenses.

Therapeutic Effectiveness

- In a national registry of patients with low back pain, implanted with an intrathecal drug deliver (IDD) system:
 - At the 6 and 12 month follow-up evaluations, pain scores had decreased significantly both for back and leg pain compared to baseline. At 12 months, back pain had declined by 48% and leg pain by 32%.
 - At 6 and 12 months, improvements in functional abilities had occurred in 60% and 65% of the patients.

Deer T, et al. Pain Med 2004

- According to a study conducted by North et al. in 2005, 47% of patients who received Spinal Cord Stimulation (SCS) found that it relieved their pain by 50% or more; this is significantly more than the 12% who achieved the same effect through reoperation.

North RB, Kidd DH, Farrokhi F, Piantadosi SA. Spinal cord stimulation versus repeated lumbosacral spine surgery for chronic pain: a randomized, controlled trial. *Neurosurgery*. 2005;56:98-106; discussion 106-107.

- Back pain accounted for 40% of absences from work, second only to the common cold.

Guo HR, Tanaka S, Halperin WE, Cameron LL. Back pain prevalence in US industry and estimates of lost workdays. *Am J Public Health*. 1999;89:1029-1035.

- Recent systematic reviews of many trials with thousands of patients also verify the benefits of SCS. A 2005 review of 74 studies of 3300 patients with chronic leg and back pain and FBSS found that:
 - 62% of implanted patients achieved at least 50% pain relief.
 - 53% needed no analgesics post-SCS.

- 40% returned to work.
- 70% were satisfied with SCS.

Taylor RS, Van Buyten JP, Buchser E. Spinal cord stimulation for chronic back and leg pain and failed back surgery syndrome: A systematic review and analysis of prognostic factors. *Spine*.2005;30:152-60.

Cost-effectiveness

- SCS pays for itself within 2.1 years with patients who have clinically effective SCS.

Bell GK, Kidd D, North RB. Cost effectiveness analysis of spinal cord stimulation in treatment of failed back surgery syndrome. *J Pain Symptom Manage*. 1997;13:286-295. Cited by: Stojanovic MP, Abdi S. Spinal Cord Stimulation. *Pain Physician*. 2002;5(2):156-166.

- Another study by Kumar determined the average cumulative cost for SCS therapy for 5 years was \$29,123 per patient, less than the per-patient cost of \$38,029 for conventional pain therapy.

Kumar K, Malik S, Demeria D. Treatment of chronic pain with spinal cord stimulation versus alternative therapies: cost-effectiveness analysis. *Neurosurgery* 2002;51:106-116.

- A cost-benefit analysis by Mekhail et al. in the *Clinical Journal of Pain* revealed that the cost savings associated with SCS was \$30,221 per patient per year.

Mekhail NA, Aeschbach A, Stanton-Hicks M. Cost benefit analysis of neurostimulation for chronic pain. *Clin J Pain*. 2004;20:462-468.

7. There are neuromodulation specialists in your area.

There are approximately 600 members of NANS located across the United States.

Membership includes physicians of different backgrounds, all of whom specialize in pain, spasticity and movement disorders. A member in your local area can be found by visiting

<http://www.neuromodulation.org/>

8. Neuromodulation procedures are covered by most medical insurance and Medicare programs.

As with all medical procedures, the patient must check with their insurance plan to receive proper approvals.

9. Patient care is of the utmost importance to neuromodulation specialists.

Members of NANS are concerned first and foremost with the care given to their patients and the impact the neuromodulation program has on their patients' lives.

10. Neuromodulation is NOT SCIENCE FICTION.

New scientific advances and expanding clinical indications will continue to fuel the growth of this dynamic field in the coming decade but the results it can bring to pain sufferers is real today.

About the North American Neuromodulation Society (NANS):

The North American Neuromodulation Society (NANS) is dedicated to being the premier organization representing neuromodulation. NANS promotes multidisciplinary collaboration among clinicians, scientists, engineers, and others to advance neuromodulation through education, research, innovation and advocacy. Through these efforts NANS seeks to promote and advance the highest quality patient care. <http://www.neuromodulation.org/>