

Peripheral Nerve Stimulation (PNS)

What is Peripheral Nerve Stimulation (PNS)?

Peripheral Nerve Stimulation (PNS) is a surgical approach to treat chronic pain in a small area of your body. Let's review a few words used in explaining this procedure:

- Peripheral means being on the surface or outer part of the body.
- Lead is a wire that electricity passes through.
- Neuropathy is nerve damage in the peripheral nervous system. Many things can cause this condition.
- Paresthesia is a tingling, pricking, or burning sensation on the skin.

Peripheral Nerve Stimulation involves surgery that places a lead (a wire-like electrode) next to peripheral nerves to control pain. The lead delivers rapid electrical pulses that are felt as a mild/pleasant tingling sensation called paresthesias. The goal of this process is to reduce pain and reduce your medication requirements.

Similar to heart pacemakers, electricity is delivered from the generator device to the nerve or nerves to dampen pain messages sent to the brain. You are able to control stimulation by turning the device on and off and adjusting stimulation power as needed. This is an example of an Internal Pulse Generator.



What conditions can be treated by PNS?

- Complex Regional Pain Syndrome
- Diabetic Peripheral Neuropathy
- Neck / Lower back Pain
- Occipital Neuralgia

- Post-herpetic Neuralgia
- Headaches

What happens *before* PNS procedures?

You will receive paperwork from Dr. Lad's office and from the Department of Surgery with instructions and reminders regarding preparation to make before you have surgery. You will also have pre-anesthesia testing to make sure you are healthy enough to undergo the surgery. The anesthesiologist caring for you on the day of surgery may meet with you to review your medical history and answer any questions you may have. Dr. Lad will also visit you before the surgery to review the procedure and complete any necessary evaluations.

You might want to start a small binder or folder with important information you need to read and keep track of.

What happens *during* PNS procedures?

Peripheral nerve stimulation is performed in a two-step process.

First: There is a temporary (3-5 days) trial electrode that is left in place so that you can decide if the peripheral nerve stimulation is helpful. The electrode is connected to an external device that is carried on a belt or in a pocket. Most peripheral nerve stimulation trials are performed as an outpatient procedure with a local anesthetic. After the trial period, the electrode is removed to minimize the risk of infection.

Second: If it does help, you will be scheduled for the permanent placement of the electrode that is then connected to the internal battery pack (IPG), similar to a pacemaker battery. Depending on where the stimulator is placed there will be some restrictions to your daily activities for the first 4-6 weeks as things heal in place. We will discuss these restrictions with you on an individual basis.

Are there any restrictions after surgery?

Depending on where the stimulator is placed there will be restriction to your daily living activities for 6 weeks.

- DO NOT lift or carry anything over 5 lbs.
- DO NOT bend, twist, reach below your knee, lift above your shoulder, or squat/kneel.
- You may push/pull an object at waist level only.
- There are no limitations on the amount of time you may sit, stand, walk or drive.

After implant with a Stimulator:

- **You will no longer be able to get MRIs.** CT scans are OK.
- You will be given an identification card that has to be presented to security prior to going through any metal detector.
- **You should never operate a motor vehicle with the stimulator device turned on,** since it could impair your ability to control the foot pedals.

What happens after Surgery?

Once the surgery is complete, you will be transferred to the recovery room. You will be closely monitored by specially trained nurses. Dr. Lad will then explain the results to your family in the waiting room.

If PNS is successful, you may feel that your pain is significantly less. You will experience a fairly constant sensation of stimulation. You will have some incisional pain after the trial related to where the leads are placed and after the permanent implantation. You will also have some soreness over the battery site. The surgical pain should decrease over time.

How do I take care of myself after surgery?

You will receive post-operative information from Dr. Lad's office and from the Department of Surgery. Someone will need to give you a ride home the day you have the temporary and permanent implant placed. We advise you to take it easy after the procedure in order to heal from the procedure and to prevent the leads from moving out of place. Activities can then be performed as tolerated. If you have any questions about what activities are safe or not safe, ask your surgeon.



What are the risks of surgery?

Peripheral Nerve Stimulation is a commonly used surgical procedure, and while safe in expert hands, does have potential rare/infrequent risks, including:

- Infection
- Cerebrospinal fluid leak
- Erosion of the connector
- Migration of electrodes

Following your implant if you notice:

- Redness, swelling, drainage or foul odor from the surgical site
- Excessive bleeding
- Increase in pain at the surgical site
- Fever of 101°F or higher with any of the above symptoms

CALL THE OFFICE IMMEDIATELY AND PAGE THE OPERATOR TO SPEAK TO THE NEUROSURGEON ON CALL AT 919-681-8111

A representative from the peripheral nerve stimulator company is available for any questions. Support is available in all 50 states.

St. Jude Medical: 1-800-727-7846

Boston Scientific: 1-866-360-4747

Medtronic: 1-800-510-6735

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