



Dr. Huang's Vagal Nerve Stimulator (VNS) Post-Operative Instructions

Guidelines for Recovery and Device Management

What is Vagal Nerve Stimulation?

The **vagal nerve stimulator (VNS)** is a device implanted in the chest, with a lead attached to the vagus nerve in the neck, that sends electrical pulses to help manage seizure frequency or refractory depression. It is typically recommended for patients with seizure disorders that do not respond to medications alone.

Risks of VNS Surgery and Implant

VNS implantation is generally safe but, like any surgery, has potential risks and side effects:

- **Battery Replacement:** The battery in the chest implant typically needs replacing every seven years, or sooner if higher stimulation settings are required.
- **Device Manipulation:** Avoid touching or pressing on the device, as this may damage or disconnect it.
- **Poor Healing of Incisions:** Poor healing is more common in smokers, individuals with diabetes, cancer, poor nutrition, or a weakened immune system.
- **Swallowing and Voice Issues:** If you have pre-existing swallowing or voice issues, VNS may worsen these.
- **Sleep Apnea:** This can develop or worsen with VNS. Discuss with your neurologist if you have sleep concerns.
- **Device Malfunction:** If the device malfunctions and causes painful stimulation, deactivate it with the magnet and contact your neurologist.
- **Heart Risks:** Rarely, abnormal heart rhythms, low heart rate, or heart stoppage (asystole) can occur during surgery.

Other Surgical Considerations

- **Incision Discomfort:** Mild pain or discomfort around the incision sites is common in the first few days.

- **Pacemaker Considerations:** If you have a pacemaker or other implant, discuss placement and compatibility with your neurologist.
- **EKG Considerations:** VNS can create artifacts on an EKG, so inform healthcare providers of your device.
- **Infection Risk:** Follow wound care instructions closely to avoid infection. Signs of infection include excessive redness, drainage, or fever, and should be reported immediately.
- **Vocal Cord Risk:** Rarely, the nerve to the vocal cords may be affected during surgery, causing temporary hoarseness. Recovery may take weeks to months, and an ENT specialist may assist if symptoms persist.

VNS Device Side Effects

Programming and stimulation may initially cause side effects, including:

- **Hoarseness or Change in Voice**
- **Coughing and Throat Sensations**
- **Neck Pain or Tightness**
- **Difficulty Swallowing**
- **Breathing Discomfort**
- **Headaches**

These effects usually lessen as you adjust to the stimulation. For issues during certain activities, such as exercise or public speaking, the device can be temporarily turned off by placing a magnet over the generator. If side effects persist or interfere with daily life, discuss adjustments with your healthcare team.

Using the Magnet for Seizure Management

The VNS magnet can be used to manage seizures by providing an extra burst of stimulation:

- **To Stop a Seizure:** Swipe the magnet over the generator in the left chest area for one second. Repeat if needed.
- **Teach Caregivers:** Train family or friends to use the magnet as part of your seizure first aid plan.

Turning the Device Off

- To temporarily stop stimulation, place the magnet over the generator. As long as the magnet is in place, the device will not stimulate.
- Remove the magnet to resume normal stimulation. Discuss with your care team if you're unsure when to use the magnet to turn off stimulation.

Replacement and Removal of the VNS Device

- **Battery Replacement:** The generator's battery typically lasts several years and requires outpatient surgery to replace. This procedure takes about an hour, with same-day discharge.
- **Device Deactivation:** If the VNS is not effective for you, settings can be turned off without removing the device.
- **Device Removal:** If needed, the generator can be removed; however, removing the lead is often more complex and may not be necessary.

MRI Precautions

Individuals with a VNS can undergo an MRI, but certain precautions are needed:

- **Use a Special MRI Machine:** Some devices require specific MRI settings, so discuss this with your epilepsy team before booking an MRI.
- **Turn Off the Device Before MRI:** Arrange to have the device turned off before the scan and turned back on afterward.

Post-Surgery Diet and Activity

- **Diet:** Start with a bland or liquid meal on the first day, resuming your regular diet the next day. Take pain medications with food to avoid nausea.
- **Wound Care:** Keep the head elevated to reduce swelling, and avoid strenuous activities or heavy lifting for two weeks.
- **Steristrip Dressing:** Avoid rubbing the incision area while showering. Steristrips should fall off naturally; otherwise, they will be removed at your follow-up visit.

Medications

- **Antibiotics:** Take as prescribed for seven days to prevent infection.
- **Pain Relief:** Take painkillers as needed but avoid overuse. You may use Tylenol for additional relief, but avoid NSAIDs (like ibuprofen or aspirin).
- **Anti-Seizure Medications:** Continue taking all anti-seizure medications as prescribed by your neurologist.

Managing Seizures with VNS

Remember, VNS typically reduces seizure frequency but may not stop all seizures. Most patients continue their regular seizure regimen for at least three months post-surgery, with settings adjusted over time by your neurologist.

What to Expect After Surgery

- **Incision Site:** Mild swelling and bruising around the incision site are common and should resolve within weeks.
- **Sore Throat:** Some throat soreness and mild swallowing difficulty are typical; however, contact Dr. Huang's office if swallowing becomes severely difficult.
- **Device Activation:** For new devices, initial programming usually occurs 3–4 weeks post-surgery at your neurologist's office. For replacement batteries, programming may occur before you leave the hospital unless otherwise directed.

When to Seek Medical Help

Contact Dr. Huang's nurse at 402-403-3094 extension 123 OR Option #2 followed by Option #2

Call Dr. Huang's office if:

- You notice alarming symptoms such as excessive swelling, prolonged bleeding, or breathing difficulties.
- You have any questions or concerns about the device or your recovery. For seizure-related issues, please contact your neurologist or epilepsy specialist directly.

Patient Acknowledgment of Understanding

I acknowledge that I have reviewed and understand the risks, benefits, and alternatives to Vagal Nerve Stimulator surgery and agree to follow the post-operative instructions provided.

Patient Signature: _____

Date: _____