Factsheet: Vagus Nerve Stimulator

What does the vagus nerve do?
The vagus nerve, the longest nerve in the body, extends from each side of the brain stem and down to the abdomen. It is part of the autonomic nervous system which controls involuntary body functions and unconscious body procedures. The vagus nerve helps control functions of the diaphragm, voice box, stomach and even heart.

What is VNS?
Vagus nerve stimulation (VNS) was approved by the FDA in 1997 as an adjunctive treatment of epilepsy in children over 12 years of age. The goal of VNS treatment is to reduce the number, length and severity of seizures.

• The VNS device, similar to a pacemaker, is implanted through an incision along the left side of the chest
• A second incision, made along the left neck, is used to thread and wrap the lead around the vagus nerve
• Regular, mild electric pulses are sent from a surgically implanted device to the brain via the vagus nerve
• This battery powered device lasts about 5 years

How does it work?
• A doctor will program the VNS device to continuously operate. This means the device will turn on and shut off for programmed time intervals that are adjustable and patient specific.
• In addition to, the patient also has their own personal control over the VNS allowing them to give extra stimulations regardless of the programmed on/off cycle.
• The patient can swipe the VNS magnet from mid chest towards the left armpit; proceeding over the implanted device. Do not hold the magnet over the device – the magnet will turn the device off as long as it is held over the device for at least 6 seconds.
• This “swipe” will add an extra impulse and will help to stop a seizure or decrease the seizure’s length. It can be used at any time during a seizure, though best if used towards the beginning.
• Clothes do not need to be removed, but a heavy coat can be opened. Repeated swipes can be performed per the medical orders.

Side Effects
• Change in voice
• Hoarseness, cough
• Muscle twitching
• Headache
• Indigestion
• Nausea
• Vomiting

Magnet Safety
• Do not by wallet
• Do not place by computer
• Do not drop
SHNIC school nurses information:
Specific health issues for individual health care plans

- Diagnosis including type of seizure, description of, typical length, characteristics, triggers, warning signs, how often seizures occur, and student’s behavior following a seizure
- Documentation of VNS including date of implantation, current settings, date of last check
- Current medication list for home and school
- Orders for emergency medications, when to administer, dose, route
- Seizure action plan, when to call 911
- Location of magnet, orders for when to swipe, how often, etc.
- Documentation of who is trained to use/swipe magnet
- Documentation/log of seizures
- Safety precautions including magnet safety restrictions
- Education of staff about implantable device

### Hidden Device Information

<table>
<thead>
<tr>
<th>Type of device:</th>
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<tbody>
<tr>
<td>Serial #:</td>
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<tr>
<td>Model #:</td>
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<td>Implant date:</td>
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**For school health professional working with student**

- Experience with device: □ Y □ N
- Device manual at school: □ Y □ N
- DME contact information: □ Y □ N

**Device specific**

- Alarms: □ Y □ N
- Battery: □ Y □ N
- Back up equipment at school: □ Y □ N

**Precautions to consider at school**

- Positioning of student: □ Y □ N
- Emergency plan in place: □ Y □ N
- Physical activity restriction: □ Y □ N
- Magnet sensitivity: □ Y □ N
- Emergency outlet: □ Y □ N

Resources & Manuals

- **American Association of Neurological Surgeons**
  http://www.aans.org/
- **VNS Cyberonics**
  http://www.cyberonics.com/
- **Comprehensive Epilepsy Center at NYU**
  epilepsy.med.nyu.edu