

# Side Effects

Potential side effects:

- Hoarse voice
- Headaches
- Neck pain
- Prickling or tingling of the skin
- Sore throat
- Shortness of breath
- Coughing
- Difficulty swallowing
- Infection (most commonly reported side effect from the implant procedure) (frequency <3%)

Side effects typically only occur during stimulation, are well tolerated, and improve over time.



## Working with You

Please let your Advanced Brain and Body Clinic provider know if you experience any adverse side effects. Your provider can work with you to adjust the frequency, duration, and intensity of the pulses to help limit your side effects.

## Get Started

Call today to schedule an appointment with one of our treatment resistant depression specialists to learn more.

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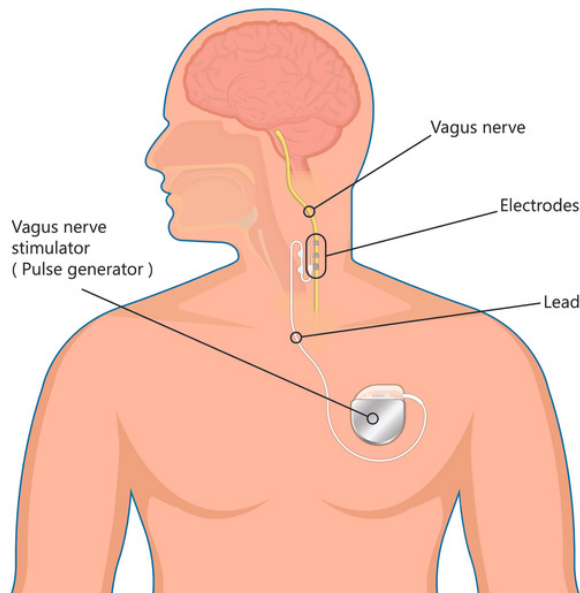
## Vagal Nerve Stimulation (VNS)

**Implanted device for treatment resistant depression**

# How It Works

Vagus Nerve Stimulation (VNS) is a non-medication treatment option for severe depression. Using a small implanted device, similar to a pacemaker, mild electrical pulses stimulate the vagal nerve. The vagal nerve naturally sends electrical pulses to the parts of the brain that control mood. VNS triggers this natural process and has proven to reduce depression symptoms in many patients.

VNS was FDA approved for epilepsy in 1997, depression in 2005, and obesity in 2015. It has been used in over 130,000 patients and has a 70% success rate when used to treat depression.



# What to Expect

A vagus nerve stimulator is implanted beneath the skin, just below the collar bone in a short outpatient procedure conducted by a surgeon. Patients will go under general anesthesia and most will return home the same day.

Two weeks after implantation, your healthcare provider will activate your VNS device which will regularly send mild electrical pulses through a thin wire directly to the left vagus nerve in the neck.

VNS can take 9-12 months before recipients feel an improvement in their depression symptoms.

**7 in 10** patients felt a significant improvement in their depressive symptoms

**4 in 10** patients fully or almost fully recovered from their depressive symptoms



# Benefits

VNS has many benefits for patients with treatment resistant depression:

- Non medication option
- Does not cause fatigue, sedation, weight gain, or dry mouth like most antidepressant medications
- Involves a one-time outpatient procedure
- Improves quality of life
- Improves sexual function
- May be safely used in conjunction with medications, talk therapy, TMS, and ECT
- Settings may be adjusted

VNS outcomes are best when it is used as part of a full psychiatric care plan which may include TMS, medications, therapy, or lifestyle changes.

