

Pacemakers for the Brain

by Dave Morton

Imagine a world where you wake up one day feeling tired, blue, and depressed. After having your coffee and perhaps some breakfast, you still feel sluggish and inadequate. Then you remember: You had an electronic device implanted under your skin a few weeks ago which might help. You press the ON button and slowly start to feel better. Half an hour later, you're ready to face the world again, feeling terrific, positive, and full of energy.

Welcome to the *possible* future world of electronic brain stimulation.

Doctors are already treating depression with 2 new kinds of brain stimulation: Vagus Nerve Stimulation, and Deep Brain Stimulation.

Deep Brain Stimulation (DBS) targets an area of the brain called "Brodman area 25" which is metabolically overactive in patients with treatment-resistance to depression. It is already in use as a treatment for Parkinson's disease, and in research trials, has shown promise in treating patients with chronic depression.

Vagus Nerve Stimulation (VNS) is out of the research stage and is available to patients now. It stimulates the vagus nerve with short pulses of electricity using a small device about the size of a silver dollar implanted under the collarbone or in the armpit, and attached to a nearby branch of the nerve in the neck. The vagus nerve, in turn, stimulates at least 5 areas of the brain related to mood, motivation, appetite, and sleep, and those that produce serotonin and norepinephrine (noradrenaline) - the body's natural anti-depressant chemicals.

VNS was originally developed to prevent epileptic seizures, and was later approved by the FDA in 2005 for use in long-term treatment of patients age 18 or older, with chronic or recurrent depression who are extremely resistant to treatment. It is significantly improving the lives of about 50% of these most resistant cases, and slightly improving several indicators of mood and mental health in the other 50% of the hard-core cases.

This means that 100% of the patients studied so far are receiving benefits from VNS - benefits from small to enormous.

With both DBS and VNS, stimulation of the brain is timed like a Pacemaker, and the full, beneficial response may require anywhere from a month to 2 years. With DBS, part of the brain is calmed and soothed. With VNS, several parts of the brain are stimulated, and more neurotransmitters are produced.

In one case where VNS was used, a 50-year old woman in England, who had unsuccessfully tried all the mainstream treatments for depression for 12 years - including 21 rounds of electroshock therapy - was depression-free after about 2 or 3 months using the VNS device.

For more information on Vagus Nerve Stimulation, see:

<http://www.vnstherapy.com/> (manufacturer - Cyberonics)

<http://www.vagusnervestimulation.com/> (patient)

Book: "Out of the Black Hole" by Charles E. Donovan III.