

DEEP BRAIN STIMULATION FOR BLEPHAROSPASM

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Reported by Dee Linde

Deep Brain Stimulation (DBS) is essentially a pacemaker for the brain. Electrodes are implanted deep into the part of the brain called the Globus Pallidus Internus (GPi), which controls movement. A pulse generator, or battery, is implanted below the clavicle, connecting wires are tunneled under the skin and connected to the electrodes in the brain, sending brief electrical pulses to the GPi, thereby interrupting the brain's chaotic signals. DBS has been in use since the 1980s for Parkinson's Disease and Essential Tremor, and in 2003 was FDA approved for Primary Dystonia under a Humanitarian Device Exemption. According to Dr. Miocinovic, DBS is now becoming a standard of care in movement disorders and is covered by most insurances as well as Medicare.

The GPi, which is the usual target for dystonia, is about the size of a kidney bean. During the surgery, the patient is awakened for part of it to test the placement of the electrodes. However, the surgery can be done with the patient completely asleep and the effectiveness is essentially the same. The device is turned on about one month after the surgery. Dr. Miocinovic agrees that the surgery is the easy part – it's the programming of the stimulator that is most challenging for the doctor as well as the patient. Programming can take anywhere from six months to a year to find optimum settings. Setting adjustments generally occur every one to two months when the patient visits their programmer. Patients also are given a hand-held programmer and can self-adjust the settings within preset parameters.

Deep Brain Stimulation is considered a minimally invasive surgery but still comes with risks, as does any surgery. The most feared complication is brain bleeding or stroke, which happens in 1 out of 100 patients within the first 24 hours after surgery. Other possible side effects include infection (usually within the first month and treated with antibiotics) and temporary stimulation-induced issues (which they can work around).

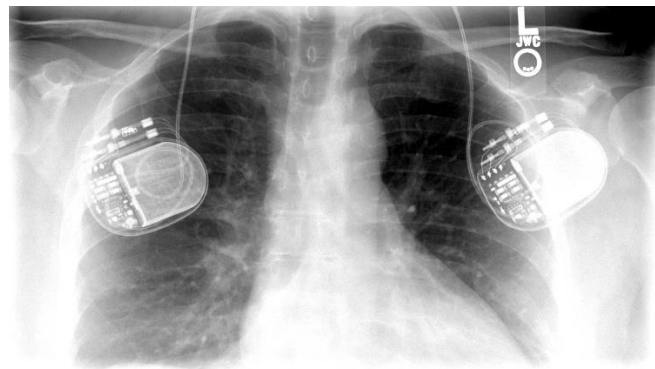
DBS works best for genetic dystonia, commonly referred to as DYT1 dystonia, with about a 75% improvement. For cranial dystonia, which includes blepharospasm, guesstimates are about 65% improvement but there is not enough evidence and only three articles have been published specifically about DBS for blepharospasm. Doctors don't really know how it works on blepharospasm but studies on Meige show positive results – about 50-75% sustained improvement. Researchers still don't understand why DBS works for some patients and not for others.

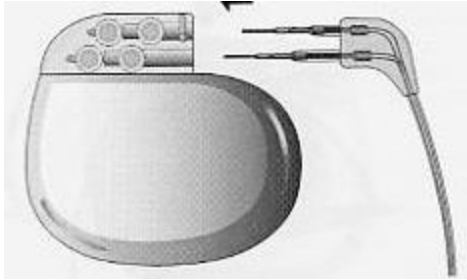
When should you consider DBS for blepharospasm? The following factors were cited by Dr. Miocinovic;

- Definitive diagnosis by a Movement Disorder Specialist
- Insufficient symptom relief by oral medications and botulinum toxin injections
- Blepharospasm causing significant disability and poor quality of life
- Realistic expectations about results are essential

After DBS surgery, patients may or may not need to continue with oral medications and/or injections. There is no strict age cutoff for DBS at Emory, but one's overall physical & mental health is taken into consideration. Some centers do have a cut off age of 75 years though. Asked whether the DBS stays in, Dr. Miocinovic said it does stay in but occasionally it may need to be removed because of an infection or a patient may ask to have it removed because he/she feels there isn't enough improvement. In this case that is not a problem.

There is increasing evidence that DBS is effective for cranial dystonias, including blepharospasm, but outcomes vary, and more research is needed.





Patient Programmer