



## Intrathecal Medications for Spasticity

In 1996, the FDA approved the Medtronic Intrathecal Medication delivery system for use in spasticity of cerebral origin. This has opened a new treatment path for patients including those with cerebral palsy, stroke, and multiple sclerosis. The pump is often suited to patients who have not responded to or tolerated the side effects of oral medication options, or who need the specific benefits of the intrathecal delivery.

Patients who are identified as candidates undergo a trial. This involves a brief hospital stay with either a single dose of the medicine given through a lumbar puncture or spinal tap, or a catheter placed into the spinal fluid with a continuous administration of medication or several small doses given. The physician will determine the best plan of trial based on the patient's examination and diagnosis. Those patients who demonstrate a favorable response to the trial with reduction of spasticity are offered the option of an implantable pump.

If a patient wishes to proceed with a pump, surgery is scheduled. The pump system consists of the pump and the catheter that brings medication from the pump into the spinal fluid. The pump is about the size of a hockey puck and is implanted under the skin of the abdomen through an incision about 3 inches long. The catheter is tunneled under the skin to a small incision in the low back and is threaded into the spinal fluid space. Patients will spend up to 4 days in the hospital, resting flat for 2 days to reduce spinal fluid leaks and to titrate the medication dosage. A physical therapist may assist in monitoring the response to the medication and providing suggestions for changes.

The pump needs to be refilled about every 45-90 days by a physician, PA or nurse who has been trained specifically in the technique. At the time of refill, the pump is accessed through the skin by a small needle, the drug is replaced and the pump is reprogrammed by a special computer. Dosage adjustment to achieve optimum response may take several weeks or months. Patients who have used their spasticity to assist with movement or function may work with a physical therapist to maximize their abilities and strength as the dose is adjusted.

The pump is powered by a contained battery. The expected battery life of the current model is 7-10 years. The pump needs to be replaced surgically when the battery life expires. Risks of implanting the pump include risk of infection, spinal fluid leakage around the catheter, pump malfunction and catheter disconnection or displacement. An individual's risks for these problems can be dependent on their underlying condition and will be discussed your surgeon.

The general information included is intended to address the common questions and concerns of our patients. You should address any specific questions about your

condition directly with your physician or physician assistant by calling our office at 402-398-9243.