**WVU Children’s Hospital Spasticity Clinic**

The Spasticity Clinic at WVU provides evaluation and treatment for children suffering from spasticity, a disease where muscles in the arms or legs get stiff.

![MPj04465630000[1]]()Children are treated by specialists in pediatric neurology and pediatric neurosurgery, and physical therapy who work together to provide the best treatment plan possible for each child with spasticity.

Services available at the Spasticity Clinic:

Oral medications

Evaluation for physical therapy needs

Serial casting

BOTOX® injections under EMG guidance

Intrathecal baclofen pump placement

Orthopaedics is available in consultation

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**What is spasticity?**

Spasticity is a disorder that causes muscles tightness or spasm. Spasticity results from damage to the central nervous system (brain or spinal cord) from stroke, traumatic brain injury, tumor or cerebral palsy. Spasticity may be just a mild feeling of stiffness or tightness in the muscles, or it may be very severe and produce painful spasms, joint pain, involuntary rhythmic contractions (clonus) and crossing of the legs (scissoring). The stiffening can be so severe that simple task such as walking or getting dressed can be very challenging.

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**What treatment is available?**

Many forms of treatment are used to reduce spasticity. The severity and body part affected by spasticity will help determine what treatment is needed. Each patient will require individualized treatment. The first step in spasticity management will require an evaluation to determine what treatment path will most beneficial to the patient.

**Oral medications** are frequently used as first step in the treatment of spasticity. Commonly used medications include benzodiazepines, baclofen, dantrolene sodium, and tizanidine. The use of oral medication requires a balance between efficacy and side effects. Common side effects include sedation, drowsiness, mood changes, weakness and fatigue.

**Clostriduim Botulinum (BOTOX) injection** into the stiff muscles is another option available for treatment of spasticity. BOTOX causes a temporary relaxation or paralysis of the injected muscle. A single injection into the affected muscle can give the patient relief from their spasticity for up to three months. After three months the affects of the injection wear off and it must be done again. The dose injected is calculated according to the patient’s weigh. A very thin needle is used to administer BOTOX directly into the affected muscle. The needle is connected to an Electromyography (EMG) machine that records the activity of the muscle that is being injected. This helps to assure the BOTOX is injected into the correct muscle. If multiple muscles are affected treatment will be needed in each muscle.

There is only minor discomfort associated with the injection. Prior to the injection a cream with anesthetic is placed on the skin to help reduce the pain. Reported complications include injection site pain and redness for a few days after the injection.

**Intrathecal Baclofen Therapy (ITB),** otherwise referred to as a **Baclofen Pump**, is the use of a surgically implanted pump that slowly infuses the drug Baclofen into the spinal fluid. The drug is delivered in the spinal cord directly to the nerve cells responsible for the spasticity and therefore, a smaller amount of drug is necessary to achieve muscle relaxation. The system is programmed by an external computer to accurately dispense the drug based on the needs of each patient. The pump's reservoir needs to be refilled periodically, on an outpatient basis.

**Physical Therapy** is used to improved function in children with spasticity. The therapist will evaluate strength, range of motion and functional ability and will provide the appropriate plan to improve movement and motor function. **Serial casting**, which is used to release contractures and improve range of motion, is offered in collaboration with the School of Medicine, Division of Physical Therapy and the Hospital Physical Therapy Service.