

Treatments for high muscle tone, also called hypertonia, are intended to reduce muscle tone to make movement and care easier. These can be oral medications, injections into muscles, or surgery. Treatments can be used alone or multiple methods can be used together to reach the desired outcome. It is important to understand the advantages and disadvantages of each treatment method. Overtreating muscle stiffness can make a child seem weak and limp. Choosing not to treat or undertreating the stiffness can lead to stuck joints or bone misalignment.

**In order to choose the right treatment for your child, everyone involved must understand the reason and the goals for the treatment.** Your family and your health care team will work together to choose the best treatment plan for your child. Keep in mind that the best treatment plan may change over time. Sometimes it is wise to try a treatment to see if the pros outweigh the cons.

Treatment Option	Pros	Cons
<b>Exercise, Physical Therapy &amp; Occupational Therapy</b>	Physical activity and exercise can take place anywhere at any time. PTs & OTs can recommend exercises to help reach movement goals.	Therapy appointments can be time consuming. Cost can add up over time.
<b>Bracing &amp; Splinting</b>	Provides support for weak muscles or joints.	Children can quickly outgrow equipment. Equipment can be expensive. Braces and splints may not be comfortable. Must be worn to be helpful.
<b>Medications Taken by Mouth</b>	Can be easily started or stopped.	May cause sleepiness or other side effects. May not focus on the specific area affected. Can wear off quickly requiring multiple doses every day. Sometimes requires lab checks. Takes weeks to months to identify the target medication dose.
<b>Botulinum Toxin Injections</b> When injected into a muscle, botulinum toxin works by temporarily blocking the release of a chemical needed to signal muscles to contract. As a result, the muscle does not receive the message to tighten.	Medication works in a specific location. No sedation required. Dose can be customized for specific areas. It wears off over 3 to 6 months – a benefit if the results are not what was expected or wanted.	Some children are scared by injections. Light sedation is an option if needed. The amount of medication allowed is limited by a child's weight. The entire area may not be able to be treated. Higher doses may come with added risks. It wears off over time and doesn't work as long as the patient or provider would like. Needs to be repeated to maintain result.

Treatment Option	Pros	Cons
<p><b>Phenol Blocks</b></p> <p>Injection of a type of alcohol that affects nerves, making messages travel slower to the muscles. This slow down makes muscle contractions weaker.</p>	<p>Medication works where it is placed.</p> <p>Dose can be adjusted.</p> <p>It lasts longer than botulinum toxin.</p> <p>It wears off over about 6 months – a benefit if the results are not what was expected or wanted.</p>	<p>Sedation is required as the injection must be given in precise locations.</p> <p>There are risks with high doses and if the medicine enters the bloodstream.</p> <p>There can be muscle soreness or nerve tingling for weeks after the injection.</p> <p>Needs to be repeated to maintain results.</p>
<p><b>Intrathecal Baclofen Pump</b></p> <p>A surgeon places a pump in the low back. The pump releases baclofen (a medication used to treat spasticity) to the fluid around the spinal cord.</p>	<p>Can be removed if needed.</p> <p>Dose can be customized.</p> <p>Minimizes need for oral medications, which may have side effects.</p>	<p>Requires regular maintenance and refills depending on dosage.</p> <p>The pump can break or fail causing a medical emergency for your child.</p> <p>If the area around the pump becomes infected, it may need to be removed urgently.</p>
<p><b>PERCS: Selective Percutaneous Myofascial Lengthening (SPML)</b></p> <p>A surgery to lengthen specific muscles.</p>	<p>Minor discomfort to child after procedure.</p> <p>Quick recovery.</p> <p>Muscles feel looser after surgery.</p>	<p>Treatment is not permanent.</p> <p>Less precise than traditional surgeries where the surgeon can directly see what is being lengthened and what is nearby that could be damaged.</p> <p>Results may create new or other conditions requiring treatment.</p>
<p><b>Selective Dorsal Rhizotomy (SDR)</b></p> <p>Surgery cutting specific nerves in the spine. There are several types of SDRs. The type of SDR performed depends on how many nerves contribute to a child's spasticity.</p>	<p>Permanent effect.</p> <p>No future medications or injections are needed for spasticity.</p> <p>Can reduce the need for future orthopedic surgeries.</p>	<p>Risks related to the anesthesia and surgery.</p> <p>Pain needs to be managed after surgery.</p> <p>The result of the procedure is permanent.</p>

