Intrathecal Baclofen (ITB) Test Dose

What is spasticity?
Spasticity is an increase in muscle tone that can be described as stiff or tight muscles. Spasticity is caused by a disruption in the messages between the brain and the muscles that tell the muscles to relax. It can be a result of illness or injury to the brain or spinal cord.

What is intrathecal Baclofen therapy?
It is a treatment option for severe spasticity (severely tight muscles), using a medicine called baclofen that is delivered through a small pump and catheter under your child’s skin. This system delivers the medicine into the fluid that surrounds the spinal cord, called the intrathecal space.

What is an intrathecal Baclofen test dose?
Our team will recommend a test dose to see if intrathecal baclofen will reduce your child’s spasticity. This is done in the operating room where a neurosurgeon injects a small amount of baclofen into the intrathecal space. They use a very thin needle that they insert through the skin and into the spine. There are no incisions made during this procedure.

![Diagram of the end of the spinal cord with vertebrae and a medicine syringe and needle](image)

Your child will be given general anesthesia, medicine that will make them sleep during the procedure. It only takes a few minutes to inject the test dose. After the injection, your child will be taken to recovery and then to their hospital room where you will be able to join them.
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The baclofen takes about 30 to 60 minutes to start working. The maximum effect is around 3 to 4 hours after the injection. The test dose wears off after 6 to 10 hours.

Before the procedure and at about 2 and 4 hours after the injection, a physical therapist and rehabilitation doctor will come to your child’s room and test your child’s muscles to see if the medicine is helping to reduce their spasticity. Once they finish evaluating the effect of the test dose, your child will leave the hospital. This usually happens later that afternoon.

What if the test dose works?

If the test dose works to reduce your child’s tone, we may recommend that your child get a baclofen pump implant. The baclofen pump implant surgery is usually scheduled a couple of weeks after the test dose procedure. For more information, read our handout, “Intrathecal Baclofen (ITB) Pump Implant” at http://www.seattlechildrens.org/pdf/PE342.pdf

What is a baclofen pump?

It is a system that delivers medicine into the intrathecal space. This is done using a pump and catheter that are implanted under the skin. The pump, implanted in the lower abdomen, is battery powered and stores and dispenses baclofen at the rate programmed by your child’s doctor.
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The catheter is a thin, flexible tube that is also placed under the skin and connects to the pump. It delivers the baclofen from the pump to the intrathecal space.

![Diagram of spinal cord, vertebrae, dura, catheter, and intrathecal space]

The pump is programmed by a handheld device that communicates with the pump through skin and clothing.

![Diagram of doctor programming pump and telemetry head over pump]

How do I know if intrathecal baclofen (ITB) therapy is right for my child?

ITB therapy works well in treating severe spasticity caused by cerebral palsy or a brain or spinal cord injury or illness. We will do a careful evaluation of your child in our Surgical Tone Management Clinic to see if this therapy is right for them. This includes muscle testing by a physical therapist (called a “PT”), an occupational therapist (called an “OT”), and a Rehab doctor.

When considering intrathecal baclofen therapy for your child, it is very important that your child is able to attend all follow up and pump refill appointments. If the pump runs out of baclofen, your child can be at risk for baclofen withdrawal. This is a potentially life-threatening event if untreated.
What happens before the test dose procedure?

Your child will have a series of clinic visits to get their medical history, recent illnesses and review their experiences with anesthesia. These appointments are scheduled within 30 days of your child’s procedure, usually all on the same day. The appointments include:

**Pre-Anesthesia Surgical Services (PASS) Clinic**

A nurse practitioner will meet with you to make sure your child is healthy enough to receive anesthesia during the procedure. They will make sure your child does not have any health problems that could delay their procedure.

**Neurosurgery Clinic**

A nurse practitioner will meet with you and your child to go over your child’s medical history and do a physical exam.

**Radiology**

The neurosurgeon may need additional X-rays or MRI scans of your child to use during the procedure. Your child may need anesthesia before an MRI if they are not able to lie still. We will talk with you about this before scheduling these appointments. To prepare, you can watch the videos “Getting an MRI While Awake” or “Getting an MRI with Anesthesia” available at https://www.seattlechildrens.org/clinics/radiology

**Therapy**

Our physical and occupational therapists may need to see your child one more time before the procedure to get measurements of their muscles and movement. The therapists may also videotape your child doing activities like transferring to and from a wheelchair.

What do I bring to these appointments?

Bring all of the items below that your child is currently using:

- Wheelchair
- Shorts to wear during the physical therapy evaluation
- Braces or splints for the foot or leg
- Any assistive devices your child uses to walk (arm crutches, walker)
- Name and phone number of your child’s community physical therapists

Will my child need to stop taking oral baclofen or other medicines?

Your rehabilitation doctor will talk to you before surgery about your child’s medication plan and any changes that may need to be made before and after the test dose procedure.
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**To Learn More**

- Tone Management Program Manager: 206-987-5917, and tone@seattlechildrens.org
- Neurosurgery Scheduling 206-987-2544, option 2
- Rehabilitation Medicine Scheduling 206-987-2114, Option 2
- Ask your child’s healthcare provider
- seattlechildrens.org
- baclofenpump.com

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**How long will my child be in the hospital (test dose)?**

Your child will spend the day at the hospital on either the inpatient surgical unit or the rehabilitation medicine unit. The effects of the baclofen are temporary, so your child can return to their normal activity, such as going to school, the next day or 24 hours after the procedure.

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**What should I expect after the procedure?**

**Pain and Comfort**

After the procedure, your child may feel some pain and discomfort in their back from the injection. The rehabilitation team will partner with you and your child to prevent and relieve pain as completely as possible. You know your child best. No matter the level of your child’s pain, believe they are hurting and respond right away.

**Activity**

The test dose may make your child’s legs very weak and loose, so they will need to remain in bed until the medical team has determined that it is safe for them to get up.

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**Will my child be able to eat afterwards?**

Your child’s care team will decide when your child is fully recovered from anesthesia and able to drink and eat.

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**What complications could occur?**

Rarely, a child can experience leaking of spinal fluid from the injection site. Symptoms of a spinal fluid leak include back pain and headaches that go away when laying flat with head down.

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**How do I prepare my child for a test dose procedure?**

For information and resources about preparing your child, visit http://www.seattlechildrens.org/patients-families/surgery/preparing-your-child. In addition, our Child Life Specialists can work with you and your child to help relieve tension, express concerns and fears, and feel more in control about their hospital experience.

Visit http://www.seattlechildrens.orgclinics/child-life to learn more. If you would like to meet with a Child Life Specialist or speak to them over the phone, ask one of your child’s doctors or nurses before the procedure.