



Botulinum Toxin/BOTOX® for Spasticity

What Is Botulinum Toxin?

Botulinum toxin is a muscle-relaxing medication used to decrease spasticity related to stroke, multiple sclerosis, and other neurological conditions including cervical dystonia and torticollis.

Botulinum toxin is derived from the bacterium *Clostridium botulinum* and is in a class of drugs called neurotoxins. There are three types of botulinum toxin available for therapeutic use:

- OnabotulinumtoxinA (Botox/Botox Cosmetic)
- RimabotulinumtoxinB (Myobloc)
- AbobotulinumtoxinA (Dysport)
- IncobotulinumtoxinA (Xeomin)

Your doctor will decide which type of botulinum toxin is appropriate for you.

What Is Spasticity?

Spasticity refers to a wide range of involuntary muscle contractions that result in muscle spasms or stiffness. Spasticity interferes with voluntary muscle movement and usually involves the muscles of the legs and/or arms.

Spasticity may vary, based on many factors, including infections, stress, pain, temperature, position and time of the day. Over time, severe spasticity may cause decreased range of motion in the affected limbs.

Spasticity is the result of an imbalance in the central nervous system, caused by a trauma or disease in the brain and/or spinal cord. This imbalance causes hyperactive muscle stretch reflexes, which result in involuntary contractions and increased muscle tone.

How Does Botulinum Toxin Work?

Normally, the brain sends electrical messages to the muscles so that they can contract and move. This message is transmitted to the muscle by a substance called acetylcholine.

Botulinum toxin works to block the release of acetylcholine; therefore the muscle does not receive the message to contract.

How Are Botulinum Toxin Treatments Given?

Botulinum toxin is given as an intramuscular injection (in the muscle). Your doctor will determine the muscle(s) in need of treatment.

If the muscles to be injected are small or difficult to reach, it may be necessary to send short electric impulses, or to record electric signals from the muscles, to ensure that the appropriate muscles are receiving the injected medication.

A very fine needle is used for the injection. Some people report minor and temporary discomfort from the injection. The medication does not sting or cause irritation after it has been injected.

You can expect the appointment to last from one to two hours.



The effects of the medication begin to appear from one to two weeks after the injection. The muscles injected should then relax.

What Are the Advantages of Botulinum Toxin?

The advantages of botulinum toxin include.

1. Improvement of discomfort related to spasticity symptoms.
2. In some cases, improved ability to use the affected part of the body.
3. The medication is effective for two to six months, depending on the individual.

What Are the Disadvantages of Botulinum Toxin?

The disadvantages of botulinum toxin include:

1. The benefit of botulinum toxin is limited to the injected muscles. Therefore, botulinum toxin may not be a good choice of treatment when many muscles are involved or when the spastic muscles are large.
2. The effect of the injections is temporary. Therefore, injections must be repeated over time to maintain the beneficial effects. Injections are not repeated more often than every 3 months to minimize the risk of developing antibodies to the botulinum toxin (see below).

What Are the Side Effects?

Side effects of botulinum toxin include:

1. Temporary weakness of the injected muscle and weakness in some nearby muscles.
2. Brief flu-like symptoms (these may develop one week after the injections and usually only last for about one day).

What Does It Mean to “Develop Antibodies” to Botulinum Toxin?

There is a slight chance that you may develop antibodies to botulinum toxin. Antibodies to botulinum toxin cause the botulinum toxin to be less effective. To minimize the risk of developing antibodies, specific guidelines are followed to restrict the frequency of injections and the dose of medication that is injected.

Is This Treatment Right for Me?

A doctor will perform a complete evaluation to determine if you are eligible to receive botulinum toxin therapy.

Does Insurance Cover This Therapy?

Insurance coverage varies greatly, depending on individual insurance plans. Check with your insurance company before treatment begins.

When Should I Call My Doctor?

Call your doctor:



1. If you think that the medication is not working (please wait at least 2 weeks after the injection).
2. If you are experiencing side effects that you think may be related to botulinum toxin.
3. When the effects of the medication wear off.

How Will I Know If the Treatment Is Working?

You will be examined during frequent follow-up appointments to determine if the treatment is working properly. Typically, you will be re-evaluated every 3 to 6 months to determine if it is appropriate to repeat the injections.