

Medical Uses of Botox: Can Botox Treat Medical Conditions?

Botox may be best known for its cosmetic applications, but there are actually quite a few ways Botox can be used to treat both moderate and severe medical conditions. Doctors have only just begun to scratch the surface of what Botox is capable of treating, and patients are benefiting from these discoveries.

So what are the medical uses of Botox? Botox has been found to treat a number of conditions related to muscular and nerve issues, such as Bell's Palsy, enlarged prostate, gastroparesis, excessive sweating, teeth grinding, rosacea, migraine headaches, eye disorders, depression, and more.

What is Botox?

Botox, scientifically known as botulinum toxin A, is a neurotoxin derived from the bacterium *Clostridium botulinum*. This neurotoxin and its deadly effects were first observed in the early 19th century, and scientists have since isolated the neurotoxin and its paralysis-inducing properties for both cosmetic and medical applications.

Botox is primarily used to paralyze muscles and nerves in the body by blocking the neurotransmitters coming from the brain. This paralysis can lead to serious consequences when misused, but doctors continue to discover an increasing number of ways it can help patients with various conditions.

The Medical Benefits of Botox

The first medical application of botulinum toxin A was created to treat strabismus, or crossed eyes condition, with a non-invasive and painless treatment. It would only be nearly two decades later when doctors would begin using Botox for cosmetic treatments.

The cosmetic application of the neurotoxin was only observed after successful trials on monkeys and later people with strabismus. Researchers noticed that the injections also led to fewer lines in the glabella, or the area between the eyes.

While the cosmetic market for Botox has exploded since the 90s, doctors have also experimented with its important role in various muscular and nerve conditions. As of today, Botox can help treat:

Bell's Palsy

Enlarged prostate

Gastroparesis

Excessive sweating (Hyperhidrosis)

Teeth grinding (Bruxism)

Rosacea

Muscle spasticity

Urinary incontinence (Overactive bladder)

Migraine headaches

Depression

Chronic neck pain

Cerebral palsy

Cervical dystonia

Eye disorders

How Is Botox Applied?

Unlike cosmetic applications of Botox, patients who receive Botox as a medical treatment are usually recommended to the treatment by their general doctor. This treatment is generally done in a doctor's office or medical clinic.

During the session, the doctor injects the necessary amount of Botox into the muscle tissue. Patients should feel little to no pain; this depends on the area of the injection site, their general pain threshold, and whether any topical anesthetic is applied to the skin.

While there will be some immediate results after the injection, it typically takes 2-3 days before the full effects of the treatment can be observed. The body needs time to fully absorb the Botox as it blocks the signals between the nerves and the muscles.

Possible Botox Side Effects

While certain Botox treatments may have more specific side effects, there are a few possible low-pain side effects with Botox. These may potentially include:

Muscle soreness

Headache

Dizziness

Fever

Nausea

These side effects are generally short-lived and should disappear a few hours after the treatment.

Medical Conditions Botox Can Treat

Condition	What Is It	Causes	How Does Botox Help	Average Units Required
Bell's Palsy	Facial muscle weakness		Unknown	Relaxes automatic facial muscle movements
Enlarged prostate	Difficulty urinating due to blocked urethra	Growth of prostate cells in urethra	Kills prostate cell growth	100 – 200, depending on prostate size
Gastroparesis	Inability to empty stomach of food	Various causes		Relaxes ring of muscles in the stomach
Hyperhidrosis	Excessive sweating	Overactive nerves		Paralyzes the nerves responsible for sweating
Teeth grinding	Chewing and grinding teeth while asleep	Stress, anxiety, and other various causes		Relaxes the jaw chewing muscles

Rosacea	Facial flushing and reddening	Genetics and environmental stimuli	Numbs the blood vessels responsible for facial flushing	100 units
Muscle spasticity	Involuntary and sudden muscle movement	Imbalance of neurotransmitters	Relaxes the muscles, easing muscle stiffness	300-400 units
Urinary incontinence	Overactive bladder, loss of bladder control	A side effect of various conditions leading to loss of bladder control	Paralyzes the bladder muscle, preventing involuntary contraction	100-300 units
Migraine headaches	Throbbing or pulsing headache that can last for days	Various genetic and environmental factors	Paralyzes the nerve endings leading to pain in the head	155 units
Depression	Serious psychological and medical condition involving negative feelings and loss of interest	Chemical imbalance in the brain	Erases glabellar lines, leading to more positive disposition and behavior	29-39 units
Chronic neck pain	Long-term pain or discomfort in the neck	Strains, sprains, and musculoskeletal conditions of the spine	Relaxes chronically contracted neck and spine muscles	100 units
Cerebral palsy	Difficulties with body movements, postures, and muscle control	Brain damage before or soon after birth	Relaxes stiff muscles, giving the patient greater control	30 units/kg
Cervical dystonia	Involuntary neck contractions	Unknown, common amongst women in their 30s	Paralyzes the nerves in the neck that lead to involuntary muscle movement	200 units
Eye disorders	Spasms and involuntary movements of the eyes, such as crossed eyes	One or more of the eye muscles receiving involuntary signals from the brain	Relaxes the eye muscles	

Bell's Palsy

What is it? – Bell's palsy or facial palsy is the sudden weakness of the facial muscles. Individuals who get Bell's palsy experience facial drooping on half of the face, making their smiles and entire face tilted. This leads to drooling pain in the ear and jaw, headaches, and increased sensitivity on the affected side.

What causes it? – The cause of Bell's palsy or facial palsy largely unknown. It can occur to anyone at any time, although it is more commonly observed in patients who suffer diabetes, an upper respiratory infection, or are in their third trimester of pregnancy.

While temporary in most patients, Bell's Palsy has been observed to be permanent with some.

How does Botox help treat Bell's Palsy? – As Bell's Palsy is a condition of the facial muscles, Botox is the perfect medication for intervention in patients experiencing long-term or permanent facial paralysis.

Botox helps to relax the automatic muscle movements and the unwanted tension underneath the face, as these muscles become hyperactive during facial nerve paralysis. This helps faces return to a normal look, with results per treatment lasting up to 4 months.

Enlarged Prostate

What is it? – Enlarged prostate, also known as benign prostatic hyperplasia or BPH, is one of the most common diseases in older men. Over half of men over the age of 60 and about 80% of men aged 80 and older experience BPH.

Roughly half of all men who experience BPH develop symptoms such as urinary tract infections, frequent urination, and severe kidney and bladder damage.

What causes it? – BPH is the growth of noncancerous prostate cells that hinder the passage of urine from the bladder to the urethra. As this growth becomes bigger, the urethra passage becomes narrower, forcing the bladder to push harder to expel urine and semen.

Due to this increased pressure, the muscles in the bladder eventually become stronger and more sensitive, leading to more frequent urination. As the growth continues to expand, the bladder muscles experience more difficulty expelling the urine, until it can no longer completely empty the bladder.

How does Botox help treat enlarged prostate? – Some doctors now treat enlarged prostate with Botox, which has been found to drastically improve the quality of life of patients with enlarged prostate (effects lasting up to a year after Botox treatment).

Through a process known as apoptosis, Botox reduces the enlarged prostate gland by killing the prostate cells slowly. This allows the urine to pass more freely from the bladder through the urethra.

Gastroparesis

What is it? – Gastroparesis is a digestive medical condition that prohibits the stomach from digesting and expelling food completely. This is problematic as food that sits in the stomach for an extended period of time can lead to bacteria growth, harden into solid masses (known as bezoars), make blood sugar levels difficult to maintain.

What causes it? – In many cases, doctors are unsure about the main cause of gastroparesis in a patient. However, several conditions are commonly recorded with gastroparesis. These include:

Untreated diabetes

Multiple sclerosis

Parkinson's disease

Taking antidepressants

Some uncommon conditions, including scleroderma and amyloidosis

How does Botox help treat gastroparesis? – Part of the problem of gastroparesis involves spasms coming from a ring of muscles in the stomach known as the pyloric sphincter.

Also known as the pylorus, this ring of muscles is involved with food passage from the stomach to the small intestine. A patient suffering gastroparesis experiences muscle spasms in the pylorus, which make it more difficult to empty the stomach.

Botox injected into the pylorus relaxes these muscles, allowing the food transfer to occur without difficulty. A single treatment of Botox can improve gastroparesis symptoms for up to 6 months.

Hyperhidrosis (Excessive Sweating)

What is it? – Hyperhidrosis is the condition of excessive sweating in the underarms and other areas in the body (commonly in the face, hands, and feet). Also known as sudorrhea or polyhidrosis, hyperhidrosis affects roughly 3% of Americans.

While hyperhidrosis is not a life-threatening condition, it can drastically decrease one's quality of life, often leading to discomfort, psychological trauma, and social embarrassment.

What causes it? – There are two kinds of hyperhidrosis: Primary idiopathic hyperhidrosis, which has no single obvious cause, and secondary hyperhidrosis, in which the excessive sweating is a side effect of another condition, such as gout, tumor, hyperthyroidism, or obesity.

How does Botox help treat hyperhidrosis? – Sweating is the body's natural response to the outside temperature. When it feels a higher temperature, it sends signals to the sweat glands to begin sweating. However, some people have more active nerves, naturally or as a side effect of another condition, leading to excessive sweat production.

Botox injected in the areas of excessive sweating paralyzes the nerves responsible for beginning sweat production. Results are so effective that after the Botox has fully paralyzed the nerves, patients can experience complete dryness for several months.

Read more: [Does Botox In Your Armpits Stop Sweating?](#)

Teeth Grinding

What is it? – Teeth grinding, also known as bruxism, affects approximately 10% of American adults. This condition is the excessive grinding of teeth while sleeping at night, leading to moderate to severe jaw and tooth damage, causing headaches and aching jaws.

Patients who leave their teeth grinding untreated may end up needing serious dental work, such as implants, root canals, or partial or complete dentures.

What causes it? – Bruxism is generally caused by anxiety or stress, so the first therapies should be concerned with the patient's psychological and mental well-being. However, continuous cases of bruxism can be caused by sleep apnea, or problems with the teeth, such as crooked teeth, missing teeth, and abnormal bite.

How does Botox help treat teeth grinding? – Patients suffering stubborn bruxism have difficulty treating it, as there are no recognized trusted treatments to cure bruxism. Generally, patients are advised to wear mouthguards at night until the bruxism passes (if it ever does).

However, some doctors are turning to Botox to treat teeth grinding. When injected directly into the jaw's chewing muscles, Botox has been found to dramatically reduce nighttime teeth clenching and grinding in patients with bruxism. By relaxing the jaw's chewing muscles, patients are far less likely to unconsciously chew and grind in their sleep.

Rosacea

What is it? – Rosacea is a facial skin condition that is often confused with skin allergies and eczema. This condition leads to excessive redness on the face, as well as blood vessels becoming visible and distinct. In severe cases, individuals with rosacea may experience pus-filled bumps on their face.

What causes it? – While doctors are unsure of the exact cause for rosacea, it is theorized that its due to a combination of environmental stimuli and genes. And while rosacea can develop in any demographic, it is most commonly observed in fair-skinned, middle-aged women.

For those who have rosacea or a history of rosacea, there are various factors that can worsen or trigger rosacea symptoms. These include stress, alcohol, cosmetics, spicy food, extreme temperatures, and too much sunlight.

How does Botox help treat rosacea? – The blood vessels in individuals with rosacea generally become dilated when they are triggered, leading to the extreme redness and flushing on the face. Botox helps to treat rosacea by paralyzing these blood vessels, prohibiting them from dilating.

With Botox injected into the upper layers of the facial skin, it can interact directly with the blood vessels that cause facial flushing. Once paralyzed by the Botox, the blood flow surges on the face lose their excess visibility. Like with other Botox treatments, these results can last for months before patients need another session.

Muscle Spasticity

What is it? – Muscle spasticity or spasticity is a disorder of muscle control in the body. While most people can generally stiffen, tighten, and contract their muscles without difficulty, individuals suffering spasticity have an inability to control their muscles with ease.

In some cases, individuals have zero control over their muscles; in other cases, control is sporadic, coming and going in random intervals. Sometimes their reflexes may be stronger or last longer than they intended.

What causes it? – Spasticity is a condition related to the relationship between the muscles and the central nervous system. Individuals with spasticity have an unusual imbalance of the neurotransmitters that allow communication between the muscles and the brain.

Similar imbalance can be observed in individuals suffering brain injuries, multiple sclerosis, and cerebral palsy.

How does Botox help treat muscle spasticity? – While Botox doesn't help the direct relationship between the central nervous system and the muscles, it can assist the brain in getting its signals through to an unresponsive muscle set.

Botox injected in the areas with muscles suffering spasticity can help to relax the muscles, making it easier for the individual to normally move and contract these muscles without difficulty.

Urinary Incontinence

What is it? – Urinary incontinence, also known as overactive bladder, is the loss of bladder control in an individual, leading to unexpected urine leakage during sudden moments of physical pressure (such as during a sneeze or a cough) or having a sudden intense need to urinate.

There are five types of urinary incontinence, each describing the exact urinary symptoms; these include stress incontinence, urge incontinence, overflow incontinence, functional incontinence, and mixed incontinence.

What causes it? – Urinary incontinence is generally not considered a disease on its own. Rather, it is usually observed as a symptom of other underlying diseases, physical conditions, or unhealthy habits. Doctors can help patients understand their exact cause for their urinary incontinence.

Causes can be anywhere from the type of food or drink an individual consumes, to pregnancy, to prostate cancer or neurological disorders.

How does Botox help treat urinary incontinence? – Botox can treat urinary incontinence by taking away the bladder's unwanted contractions. The Botox should be injected straight into the bladder, where it blocks the neurotransmitters operating between the bladder muscle and the bladder.

This prevents the bladder from contracting on its own, allowing patients to have greater control over their bladder. Results can last up to six months before patients must undergo another treatment.

Migraine Headaches

What is it? – A migraine is a severe pulsing or throbbing sensation that is generally felt on one side of the head. Unlike average headaches, migraines can last for several days or hours, inflicting pain that can prevent an individual from participating in daily activities.

This pain is usually experienced with other symptoms, such as extreme visual and auditory sensitivity, vomiting, and nausea.

What causes it? – While the exact cause of a migraine hasn't been identified, doctors believe that environmental and genetic factors contribute to the probability and frequency of migraines. Some triggers of migraines include:

Fasting

Processed foods and food additives

Alcohol and caffeine

Excessive sensory stimuli

Inconsistent sleeping patterns

Intense physical activities

Severe weather changes

How does Botox help treat migraine headaches? – While most medical uses for Botox are off-label, Botox for migraines is actually FDA-approved. This is most recommended for patients who experience headaches for 15 days or more every month.

For treatment, Botox is injected around the nerve endings in the head that lead to migraines. The neurotoxin then paralyzes these nerve endings, blocking communication between the chemicals and the brain's headache pain networks. Patients can experience relief from headaches for up to 10-12 weeks after a single treatment.

Depression

What is it? – Depression, or major depressive disorder, is a serious medical and psychological condition that leads to negative feelings about the self, including the self's actions, feelings, and behaviors.

Depression leads to an overall feeling of numbness, with depressed individuals experiencing loss of appetite, feelings of worthlessness and guilt, increased fatigue, insomnia, loss of interest in all activities, and thoughts of suicide.

What causes it? – While some mistakenly believe that depression is just a regular case of negative emotions, depression is actually partly caused by a chemical imbalance in the brain. This and genetic vulnerability combined with various external stressors – medical problems, medications, stressful events – create depression.

How does Botox help treat depression? – Several studies over the course of the last two decades have found Botox to be very effective at treating depression, alone or if paired with antidepressant medication. The treatment involves injecting the glabellar frown lines – the lines between the eyes, above the nose – with Botox, clearing them up.

Researchers suggest that the cause for the effectiveness of this treatment is due to a mechanism known as “facial feedback”. We are influenced by our facial expressions, and the angrier, sadder, and more negative we feel, the more pronounced our glabellar frown lines become.

By injecting those lines with Botox, they gradually disappear. And as we notice the disappearance of those lines between our eyes, over time our levels of depression naturally improve.

Chronic Neck Pain

What is it? – Chronic neck pain is long-term discomfort or pain in and around the neck area. Individuals with chronic neck pain experience stiff neck, sharp and stabbing sensations in a single spot along the neck or upper spine, and tenderness and soreness in the neck area.

What causes it? – The most common causes for chronic neck pain are sprains and strains, however these can heal relatively quickly, a few weeks at the longest. Common causes for these include sports injuries, sleeping in uncomfortable positions, repetitive neck movements, bad posture, and whiplash from motor vehicle accidents.

More serious causes of chronic neck pain include cervical herniated discs, cervical degenerative disc disease, cervical osteoarthritis, cervical foraminal stenosis, and other spine and cervical disc-related conditions.

How does Botox help treat chronic neck pain? – Some cases of neck pain are caused by muscles that are chronically contracted or tense. Doctors begin by identifying the tense muscles, and then injecting Botox in the surrounding areas to target them. The Botox causes the muscles to relax, helping to ease the chronic neck pain.

Patients generally accompany Botox injections for chronic neck pain with various forms of physical therapy.

Cerebral Palsy

What is it? – Cerebral palsy is a disorder characterized by the individual's issues with posture, muscle tone, and general body movement. Individuals suffering from cerebral palsy show first symptoms in their infancy, displaying signs of involuntary movements, abnormal reflexes and posture, and unusual muscle movement.

What causes it? – Cerebral palsy is caused by damage to the brain while it is in an immature and developmental state, generally while still in the womb.

How does Botox help treat cerebral palsy? – Individuals and especially children suffering from cerebral palsy struggle with muscle spasticity caused by involuntary muscle stiffness. Botox helps to ease muscle spasticity of cerebral palsy by easing the patient's muscle stiffness.

Immediate benefits of Botox include fewer spastic movements, an easier time walking, less overall body pain, and greater range of motion.

Cervical Dystonia

What is it? – Cervical dystonia, also known as spasmodic torticollis, is the painful and involuntary contraction of the neck muscles. Individuals with cervical dystonia experience their head twisting from one side to another, or forward and backward, without warning, making everyday life very difficult to navigate.

What causes it? – As cervical dystonia is both a rare and unique condition, its cause is mostly unknown. While some individuals with cervical dystonia have a genetic familial history of the disease, others have no genetic connection to it at all.

People who are likely to develop cervical dystonia are women in their 30s, particularly those who have a family history of the condition.

How does Botox help treat cervical dystonia? – The involuntary neck muscle contractions individuals with cervical dystonia experience are a result of signals from the brain automatically forcing them to spasm or bend.

In cases of cervical dystonia, Botox is injected into the neck area, where the patient most commonly experiences the involuntary contraction. The Botox paralyzes the muscles and nerve endings in this area, leading to a dramatic reduction of involuntary contractions for up to 3 months every session.

Eye Disorders

What is it? – Eye disorders such as blepharospasm (eyelid spasms), diplopia (blurred vision), and strabismus (crossed eyes) lead to various symptoms involving involuntary eye movements.

What causes it? – Eye disorders are generally caused by one or more of the six muscles in the eyes experiencing spasms or involuntary movement.

How does Botox help treat eye disorders? – The first medical application of Botox to be tested on humans and approved by the FDA was actually for strabismus, or crossed eyes, back in the late 70s.

Read more: The Origin of Botox: How It All Started

Botox injected near the eye area, generally in the glabellar lines, helps to relax the muscles that control the eye movement, helping individuals suffering from various eye muscle disorders.

Botox Beyond Cosmetics

The versatility of Botox proves that it goes beyond erasing fine lines and smoothing out wrinkles. When applied by a knowledgeable professional, patients can harness the power of this super toxin to control and treat both major and minor inconveniences, one injection at a time.

Is Botox the right medical treatment for you? Talk to us today, and learn how Botox can help make your life better.

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