



## Dystonia: Causes, Types, Symptoms, and Treatments

Dystonia is a movement disorder in which a person's muscles contract uncontrollably. The contraction causes the affected body part to twist involuntarily, resulting in repetitive movements or abnormal postures. Dystonia can affect one muscle, a muscle group, or the entire body. Dystonia affects about 1% of the population, and women are more prone to it than men.

### What Are the Symptoms of Dystonia?

Symptoms of dystonia can range from very mild to severe. Dystonia can affect different body parts, and often the symptoms of dystonia progress through stages. Some early symptoms include:

- A "dragging leg"
- Cramping of the foot
- Involuntary pulling of the neck
- Uncontrollable blinking
- Speech difficulties

Stress or fatigue may bring on the symptoms or cause them to worsen. People with dystonia often complain of pain and exhaustion because of the constant muscle contractions.

If dystonia symptoms occur in childhood, they generally appear first in the foot or hand. But then they quickly progress to the rest of the body. After adolescence, though, the progression rate tends to slow down.

When dystonia appears in early adulthood, it typically begins in the upper body. Then there is a slow progression of symptoms. Dystonias that start in early adulthood remain focal or segmental: They affect either one part of the body or two or more adjacent body parts.

### What Causes Dystonia?

Most cases of dystonia do not have a specific cause. Dystonia seems to be related to a problem in the basal ganglia. That's the area of the brain that is responsible for initiating muscle contractions. The problem involves the way the nerve cells communicate.

Acquired dystonia is caused by damage to the basal ganglia. The damage could be the result of:

- Brain trauma
- Stroke
- Tumor
- Oxygen deprivation
- Infection
- Drug reactions
- Poisoning caused by lead or carbon monoxide

Idiopathic or primary dystonia is often inherited from a parent. Some carriers of the disorder may never develop a dystonia themselves. And the symptoms may vary widely among members of the same family.

### Are There Different Types of Dystonia?

Dystonias are classified by the body part they affect:

- Generalized dystonia affects most of or all of the body.
- Focal dystonia affects just a specific body part.
- Multifocal dystonia affects more than one unrelated body part.
- Segmental dystonia involves adjacent body parts.
- Hemidystonia affects the arm and leg on the same side of the body.

Dystonias can also be classified as syndromes based on their patterns:

- Blepharospasm is a type of dystonia that affects the eyes. It usually begins with uncontrollable blinking. At first, typically, it affects just one eye. Eventually, though, both eyes are affected. The spasms cause the eyelids to involuntarily close. Sometimes they even cause them to remain closed. The person may have normal vision. But this permanent closing of the eyelids makes the person functionally blind.
- Cervical dystonia, or torticollis, is the most common type. Cervical dystonia typically occurs in middle-aged individuals. It has, though, been reported in people of all ages. Cervical dystonia affects the neck muscles, causing the head to twist and turn or be pulled backward or forward.
- Cranial dystonia affects the head, face, and neck muscles.
- Oromandibular dystonia causes spasms of the jaw, lips, and tongue muscles. This dystonia can cause problems with speech and swallowing.
- Spasmodic dystonia affects the throat muscles that are responsible for speech.
- Tardive dystonia is caused by a reaction to a drug. The symptoms are typically only temporary and treatable with medication.
- Paroxysmal dystonia is episodic. The symptoms occur only during attacks. The rest of the time, the person is normal.
- Torsion dystonia is a very rare disorder. It affects the entire body and seriously disables the person who has it. Symptoms generally appear in childhood and get worse as the person ages. Researchers have found that torsion dystonia is possibly inherited, caused by a mutation in the gene DYT1.
- Writer's cramp is a type of dystonia that only occurs while writing. It affects the hand and/or forearm muscles.

#### How Is Dystonia Treated?

There are several options for treating dystonia. The doctor will determine the course of treatment based on the type of dystonia and its severity.

A recently introduced treatment is *botulinum toxin*, also called Botox or Xeomin. The toxin is injected into the affected muscle. There it blocks the effect of the chemical acetylcholine that produces muscle contractions. The injection needs to be repeated about every three months.

When dystonia causes someone to become disabled, deep brain stimulation is an option. With deep brain stimulation, an electrode is implanted into a particular area in the brain. It is then connected to a battery powered stimulator implanted in the chest. The electrode transmits electrical pulses created by the stimulator to the brain region to reduce the muscular contractions. The person's doctor regulates the frequency and intensity of the electrical pulses.

Medications can help reduce the "overdrive" messages that cause muscles to contract excessively in dystonia. Drugs used include:

- Levodopa
- Procyclidine hydrochloride
- Diazepam
- Lorazepam
- Clonazepam
- Baclofen

Sensory trick is another option. With sensory trick, stimulation applied to the affected or nearby body part

may reduce the muscular contractions. By simply touching this area, people can control their own contractions.

Speech therapy, physical therapy, and stress management may also be used to treat the symptoms of dystonia.