## **Patient Information**

# Laryngeal Dystonia (Spasmodic Dysphonia)

## What is Laryngeal Dystonia?

Laryngeal dystonia, also called spasmodic dysphonia, is a **chronic neurological voice disorder** that affects the muscles of the **larynx (voice box)**. It is a type of **focal dystonia**, meaning it causes involuntary muscle contractions in a specific area of the body.

In this condition, the muscles controlling the vocal cords **spasm during speech**, disrupting the normal vibration and positioning of the cords. This leads to a **strained**, **breathy, or broken-sounding voice**. Symptoms typically appear gradually and worsen over time.

Laryngeal dystonia is not caused by psychological problems, though emotional stress can worsen symptoms.

## What Causes It?

The cause of laryngeal dystonia is not fully understood, but it is believed to result from **dysfunction in brain areas** that regulate motor control, particularly the **basal ganglia**.

Possible contributing factors include:

- A genetic predisposition (though most cases are sporadic)
- A history of other forms of dystonia
- Rarely, neurological injury or illness
- Vocal overuse or trauma may be triggers but are not causes

This condition is **not caused by anxiety, depression, or vocal strain alone**. However, these factors may influence the severity of symptoms.

## **Types of Laryngeal Dystonia**

- 1. Adductor Spasmodic Dysphonia (ADSD)
  - Most common type.
  - Vocal cords spasm tightly closed during speech.
  - Voice sounds **strained**, **strangled**, **or effortful**, particularly on voiced sounds (e.g. b, d, g).

#### 2. Abductor Spasmodic Dysphonia (ABSD)

- Less common.
- Vocal cords spasm **open**, causing **breathiness or voice dropouts**, especially on voiceless sounds (e.g. p, t, h, f).

#### 3. Mixed Type

- A rare form involving both adductor and abductor spasms.
- May result in a combination of strained and breathy voice patterns.

## Symptoms

Symptoms can vary, but commonly include:

- Strained or strangled voice quality
- Breathy or whispery voice
- Sudden interruptions or breaks in speech
- Inconsistent voice quality depending on stress, fatigue, or context
- Effortful speaking or vocal fatigue
- Voice often improves during laughing, whispering, or singing

Symptoms usually do not affect **non-speech sounds**, such as laughter, whispering, or humming.

## Diagnosis

Diagnosing laryngeal dystonia involves a **multidisciplinary approach** and is based on clinical features, as there is no single diagnostic test.

Evaluation may include:

- 1. ENT (Ear, Nose, and Throat) Specialist Examination
  - A **flexible laryngoscopy or videostroboscopy** allows the doctor to view vocal cord motion during speech.
- 2. Voice Specialist Assessment
  - A laryngologist or neurologist with experience in dystonia may assess speech patterns and muscle behaviour.
- 3. Exclusion of Other Conditions
  - Structural abnormalities, vocal cord paralysis, or other neurological diseases need to be ruled out.
- 4. Speech Recording and Analysis
  - Speech samples help identify characteristic spasms and breaks in phonation.

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#### 5. Laryngeal Electromyography (EMG) (in some cases)

• May be used to assess muscle activity and guide treatment.

Because symptoms may resemble other voice disorders, **accurate diagnosis by a specialist team is essential**.

## **Treatment Options**

There is no cure for laryngeal dystonia, but symptoms can be effectively managed, especially with botulinum toxin injections.

#### 1. Botulinum Toxin (BoNT-A) Injections

- Most effective and commonly used treatment.
- Injections are given directly into the overactive laryngeal muscles.
- The toxin **reduces unwanted muscle spasms** by temporarily weakening the muscle.
- Administered using a fine needle, sometimes with EMG guidance to ensure accurate placement.
- The effect begins within a few days and typically lasts **3 to 6 months**, after which injections are repeated.
- Side effects may include:
  - Temporary breathiness
  - Mild swallowing difficulty
  - Hoarseness
- These effects are usually short-lived and improve as the dose stabilizes.

Botulinum toxin therapy is tailored to each patient's type of dystonia and voice pattern. It is considered the **gold standard treatment** for laryngeal dystonia.

#### 2. Surgical Treatments (Rare in practice)

Surgery may be considered for patients who:

- Do not respond well to botulinum toxin
- Experience side effects that are intolerable

Options include:

- Selective laryngeal adductor denervation-reinnervation (SLAD-R)
  - Involves cutting the affected nerve branches and reconnecting them to reduce spasms.
  - Primarily used for **adductor-type** dystonia.
- Recurrent laryngeal nerve section
  - An older procedure now used less frequently due to variable results and potential voice changes.

Surgical approaches carry risks and are typically considered **only in severe or refractory cases**. Outcomes are highly variable. Some patient may still return for botulinum toxin injection treatment even after surgery.

## Living with Laryngeal Dystonia

Laryngeal dystonia is a **lifelong condition**, but many people are able to manage symptoms effectively with proper treatment.

Helpful strategies include:

- Using written or electronic communication during severe flare-ups
- Avoiding speaking over loud noise
- Taking vocal breaks when needed
- Managing stress and fatigue, which may aggravate symptoms
- Maintaining hydration and avoiding irritants like smoking

### Summary

Aspect	Details
Condition	Laryngeal Dystonia (Spasmodic Dysphonia)
Cause	Neurological dysfunction affecting vocal cord control
Main Symptoms	Strained, breathy, or interrupted speech
Diagnosis	Clinical assessment, laryngoscopy, exclusion of other conditions
Treatment	Botulinum toxin injections (first-line), surgery in select cases
Prognosis	Chronic condition; symptoms manageable with ongoing care

## **Support and Further Information**

Access to support groups and reliable information can help patients cope with the social and emotional impact of this condition.

#### **UK Resources:**

British Voice Association
<u>www.britishvoiceassociation.org.uk</u>
Provides patient education, professional voice care information, and specialist
contacts.

#### • Dystonia UK

www.dystonia.org.uk Offers support groups, advice, and updates on dystonia research and care.

#### International:

National Spasmodic Dysphonia Association (NSDA)
<u>www.dysphonia.org</u>
Offers comprehensive resources for individuals living with spasmodic
dysphonia.