CONDITION

Spasmodic dysphonia

Spasmodic dysphonia is a long-term neurological condition that causes involuntary spasms in the voice box during speech.

WHAT IT IS
Chronic voice disorder involving involuntary voice-box muscle spasms

BODY SYSTEM
Nervous system and voice box

MAIN SYMPTOMS
Strained voice, breathy breaks, effortful speech, voice fatigue

WHAT CAUSES IT
Unknown neurological dysfunction

HOW IT IS DIAGNOSED
Specialist voice assessment and laryngoscopy during speaking

MAIN TREATMENT
Botulinum toxin injections with supportive voice therapy

CAN IT BE CURED?
No - treatment can control symptoms

IS IT AN EMERGENCY?
No - not usually an airway disorder

LONG-TERM OUTLOOK
Persistent symptoms, often manageable with repeat treatment

Overview

Spasmodic dysphonia is a long-term voice condition caused by involuntary contractions, or spasms, in muscles of the voice box. It is also called laryngeal dystonia or dysphonia spastica.

The voice box, medically called the larynx, contains the vocal folds. These folds move together and vibrate as air passes through them, producing sound. With spasmodic dysphonia, certain speaking tasks trigger abnormal muscle contractions that interrupt this movement.

The condition is a type of focal dystonia. Dystonia is a neurological movement disorder that causes muscles to contract when they should not. "Focal" means that one area of the body is mainly affected.

Spasmodic dysphonia changes the sound and ease of speech, but it does not affect

intelligence or understanding. It usually does not damage the vocal folds or stop a person from breathing. However, the effort needed to speak can affect work, relationships, confidence, and participation in social life.

There are three main forms:

Adductor spasmodic dysphonia is the form seen most often.

- Adductor spasmodic dysphonia: the vocal folds close too tightly, producing a strained or strangled voice with abrupt breaks
- Abductor spasmodic dysphonia: the vocal folds open unexpectedly, causing breathy or whispered breaks
- Mixed spasmodic dysphonia: features of both forms occur

Symptoms

Symptoms usually occur during speech rather than being present in every sound you make. They may begin gradually and can be inconsistent, especially early on.

Possible symptoms include:

In adductor spasmodic dysphonia, breaks often occur on vowel sounds and other sounds made while the vocal folds are vibrating. In the abductor form, breathy breaks are more likely around voiceless consonants, such as "h," "p," or "t."

The voice may sound different during certain activities. Some people have fewer symptoms while laughing, crying, singing, whispering, speaking in a different pitch, or using a character voice. These temporary improvements are characteristic of task-specific dystonia, but they do not confirm the diagnosis by themselves.

Some people also have vocal tremor, which causes rhythmic shaking in the voice. Tremor and spasmodic dysphonia can occur together, but they are not the same condition.

The condition does not usually cause throat pain, persistent difficulty swallowing, or shortness of breath. Those symptoms need separate assessment.

- Sudden breaks or interruptions in the voice
- A tight, strained, or strangled voice
- Breathy or whispered gaps between words
- Difficulty starting or sustaining speech
- Increased effort needed to talk

- Voice fatigue after prolonged speaking
- Symptoms that become more noticeable during stress or tiredness

Causes and risk factors

The exact cause of spasmodic dysphonia is not known. It appears to involve abnormal control of voice movements within networks of the brain that plan and coordinate muscle activity.

The vocal-fold muscles themselves are usually structurally normal. The problem is with the nerve signals controlling them during specific voice tasks.

Spasmodic dysphonia often begins in adulthood. It is reported more often in women than men. Some people have another form of dystonia, tremor, or a relative with a movement disorder, but most cases are not passed down in a simple inherited pattern.

People sometimes first notice symptoms after an infection, stressful event, injury, or a period of heavy voice use. These events may draw attention to an emerging voice problem, but they have not been proved to be direct causes.

Stress can make symptoms more noticeable. This does not mean the condition is caused by anxiety or is "all in your head." It is a neurological voice disorder, although emotional strain can affect how severe many movement and voice symptoms feel.

Diagnosis

There is no single blood test or scan that confirms spasmodic dysphonia. Diagnosis is based on the pattern of symptoms and on observing how the vocal folds behave during different speaking tasks.

Assessment is often carried out by a team that may include an ear, nose, and throat specialist with voice expertise, a speech and language therapist, and sometimes a neurologist.

Your assessment may include:

The sentences used during voice testing may be chosen to bring out either adductor or abductor voice breaks. This helps distinguish the type of spasmodic dysphonia.

Tests may also be used to rule out vocal-fold growths, inflammation, muscle-tension dysphonia, vocal tremor, nerve weakness, or other neurological conditions. Brain imaging is not routinely needed for a typical presentation, but it may be considered if symptoms are unusual or other neurological signs are present.

Because symptoms can change with the speaking task, diagnosis may take more than one

visit. A recording made when symptoms are noticeable can sometimes help with assessment.

- Listening to your voice during conversation and specific sentences
- Comparing speaking with laughing, singing, whispering, or other tasks
- Flexible laryngoscopy, in which a thin camera is passed through the nose to view the vocal folds while you speak
- A neurological examination for tremor or dystonia elsewhere in the body

Treatment and management

There is no cure at present, but treatment can reduce voice breaks and make speaking easier.

The main treatment is botulinum toxin injection into selected muscles of the voice box. Botulinum toxin temporarily reduces excessive muscle contraction by blocking some nerve signals to the treated muscle.

For adductor spasmodic dysphonia, injections are usually directed at muscles that close the vocal folds. For the abductor form, different muscles may be targeted. Treatment is tailored to the type and pattern of voice breaks.

The benefit is temporary, so injections generally need to be repeated. The timing and effect differ from person to person. Finding the most useful injection pattern may take several treatment cycles.

After an injection, temporary effects can include:

These effects usually improve as the medication settles. Tell the treating service if swallowing problems are significant, persist, or occur with coughing and choking.

Voice therapy with a speech and language therapist does not usually stop the neurological spasms by itself. It can still be useful for reducing extra muscle tension, making communication less tiring, and developing practical strategies. It may be especially helpful when muscle-tension dysphonia or tremor occurs alongside the condition.

Medicines taken by mouth have not shown consistent benefit for most people and can cause side effects. Surgery may be considered for carefully selected people, mainly with adductor spasmodic dysphonia, when established treatments have not provided acceptable control. Surgical effects and long-term results are not the same for everyone.

Communication aids, amplification devices, text-to-speech tools, and workplace adjustments may help when symptoms interfere with daily tasks.

- A weak or breathy voice

- Mild difficulty with thin liquids
- Throat discomfort or bruising
- A short period before the full benefit appears

Complications

Spasmodic dysphonia does not usually damage the voice box or shorten life. Its main complications come from difficulty communicating.

You may avoid telephone calls, meetings, restaurants, or other situations where speaking is demanding. Work can be affected if it depends heavily on public speaking, teaching, customer contact, or telephone use. Repeated misunderstandings may also be frustrating or isolating.

Trying to force words out can lead to extra tension in the neck and throat. Some people develop muscle-tension patterns on top of the underlying dystonia, increasing effort and fatigue.

Low mood or anxiety may occur when communication becomes stressful. Emotional support, counselling, peer support, and practical adjustments can be useful parts of care.

Treatment complications are usually temporary. Botulinum toxin can cause excessive breathiness or swallowing difficulty if nearby muscles are affected. Serious breathing problems are uncommon, but new breathing difficulty after treatment needs prompt medical attention.

Prevention

Spasmodic dysphonia cannot currently be prevented because its underlying cause is unknown. It is not caused by poor speaking technique, and ordinary voice-care measures cannot prevent the neurological spasms.

Protecting your voice may still reduce unrelated irritation and extra strain. Helpful measures can include staying hydrated, avoiding shouting over background noise, taking voice breaks when tired, and treating conditions such as acid reflux or allergies when medically appropriate.

These steps may improve comfort, but they do not replace treatment for spasmodic dysphonia.

Living with it and what to expect

Spasmodic dysphonia is usually a lifelong condition. Symptoms may develop gradually and then remain at a similar overall level, although their day-to-day intensity can change. Stress, fatigue, illness, and demanding speaking situations may make the voice harder to control.

The condition does not usually progress into loss of speech or widespread paralysis. Some people have dystonia or tremor in another part of the body, so mention new involuntary movements to your healthcare team.

Botulinum toxin treatment often follows a cycle. The voice may be weak or breathy soon after an injection, then enter a period of easier speech before symptoms gradually return. Keeping notes about voice quality, swallowing effects, and how long benefit lasts can help inform future treatment discussions.

Many people continue working, maintaining relationships, and taking part in social activities. Practical changes may make this easier. Examples include using a microphone, choosing quieter meeting spaces, allowing written responses, using online booking instead of telephone calls, or telling others that the voice disorder does not affect understanding.

Routine follow-up is usually based on symptom control, treatment effects, and your communication needs. An earlier review is appropriate if your voice pattern changes significantly, treatment becomes less effective, or side effects become harder to manage.

When to get medical help

Arrange a routine medical assessment if you have recurring voice breaks, an unexplained strained or breathy voice, or a voice problem that is not settling. Persistent voice changes have several possible causes, and a specialist examination can help identify the reason.

If you already have spasmodic dysphonia, contact your treatment service if:

Seek urgent medical advice for a new voice change accompanied by difficulty swallowing, a neck lump, coughing up blood, unexplained weight loss, or persistent ear or throat pain. These are not typical features of spasmodic dysphonia and need assessment for another cause.

Call emergency services if you have severe trouble breathing, noisy breathing with distress, blue or grey lips, or sudden voice difficulty with facial drooping, arm weakness, confusion, or trouble understanding speech. These symptoms are not expected from spasmodic dysphonia and may indicate an airway emergency or stroke.

- Symptoms change in a way that is not typical for you
- Swallowing problems continue after an injection
- Treatment benefits are becoming shorter or less reliable

- Voice difficulties are affecting work, relationships, or emotional wellbeing
- You develop tremor or involuntary movements elsewhere

Common questions

Is spasmodic dysphonia the same as ordinary hoarseness?

No. Ordinary hoarseness often comes from irritation, infection, vocal-fold swelling, or heavy voice use. Spasmodic dysphonia causes task-specific voice breaks because the nervous system sends abnormal signals to voice-box muscles.

Can stress cause spasmodic dysphonia?

Stress is not considered the underlying cause. It can make spasms more noticeable and speaking more difficult, just as it can worsen other movement disorders.

Will my voice eventually return to normal?

The condition is usually long term and does not reliably disappear on its own. Treatment may produce substantial periods of easier, clearer speech, but it does not permanently remove the underlying dystonia.

Does botulinum toxin permanently paralyse the vocal folds?

No. Its effect on the injected muscles is temporary. Voice strength and spasms change as nerve activity returns, which is why repeat treatment is commonly needed.

Can speech therapy cure spasmodic dysphonia?

Speech or voice therapy does not usually cure the neurological spasms. It can reduce added muscle tension, improve efficiency, and help you manage difficult communication situations.

Can I lose my voice completely?

Complete permanent voice loss is not the usual course. Speech may become difficult or tiring, and some words may be hard to produce, but the condition does not usually destroy the vocal folds.

Sources

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