

VOICE AND ITS DISORDERS

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Introduction

Our voice is closely related to the emotional tone of our communication. Often, we can tell from a person's voice if he is angry, sad, relieved or disappointed even if he does not say anything to that effect. The voice can sometimes communicate more than what words say. For example, how many times have you declined a friend's invitation to dinner because the invitation did not *sound* sincere?

How do we produce voice?

Air flows out of our lungs and sets our vocal folds into vibration. This vibration produces sound waves that travel through our throat, mouth and nose cavities that are above the vocal folds. These cavities and the structures inside them, such as tongue and soft palate, modify the sound. The voice that comes out of the mouth is considered normal when you hear it as pleasant, smooth, without noise, not too soft or too loud, and containing the right pitch and resonance.

What are the different types of voice disorders?

A person has a voice disorder when his voice sounds unpleasant, is noisy, is either too loud or too soft, is hyper nasal (sounds coming out through the nose) or hypo nasal (sounds blocked, like when you have a cold) or when the pitch is inappropriate.

There are three parts to our voice – phonation, loudness and pitch, and resonance. A voice disorder can occur in any of these three parts. Disorders of voice may sometimes be divided into organic and functional disorders. **Organic disorders** are due to physical diseases like cancer and tumor that affects the way the vocal folds work. **Functional**

disorders are due to the misuse and abuse of voice. The source of a voice disorder is ultimately due to the inefficient way of voicing that one has taken on.

1. Voice Disorders of Phonation

To phonate means to produce sound. In most voice disorders of phonation, there is some change in the vocal folds. Because of this change, the voice sounds breathy, harsh or hoarse. Many disorders of phonation are linked to physical factors like cancer of the larynx, paralysis of the vocal folds, physical trauma and injury (car and motorcycle accidents, strangulation, bullet wound to the larynx). Some children can suffer trauma when they swallow sharp objects like pins.

A functional disorder of phonation is usually due to vocally abusive behaviours that include screaming, shouting, constant talking, coughing and throat clearing. Inappropriate loudness and pitch is also unhealthy for the voice.

Vocally abusive behaviours result in increased tension and irritation of the vocal folds. Prolonged tension and irritation can change the structure of the folds causing development of vocal nodules, polyps or contact ulcers.

Vocal nodules are small nodes that protrude out on one or both sides of the vocal folds. **Polyps** are like nodules except that they are softer than nodules and may be filled with fluid. **Contact ulcers** are sores that develop on the vocal folds. All three cause changes to the vocal folds either by increasing the size of the folds and lowering the pitch of our voice or by making it hard for the folds to close, resulting in breathy voice. The voice may also sound hoarse.

2. Disorders of Loudness and Pitch

People who seek treatment for disorders of loudness may have either excessive loudness that has resulted in vocal nodules and polyps on the vocal folds or may talk too softly that it's difficult for others to hear them.

Those who require help for pitch disorders may have either too low or too high pitch, depending on the age and sex of the speaker. Generally, the pitch of a male is lower than that of a female. The pitch of children is much higher than that of adults. So, a too high pitch in a man or a too low pitch in a woman is considered a voice disorder.

3. Voice Disorders of Resonance

Resonance means the modification of sounds by structures in the throat, mouth and nose as it passes through them. Some people sound like they are hyper nasal or speaking through the nose. Hyper nasality occurs when the velopharyngeal mechanism is unable to close the opening to the nose cavity during the production of non-nasal sounds (like /p/, /t/, /k/). Some of the organic causes of hyper nasality are cleft palate and velopharyngeal inadequacy.

Hypo nasality or lack of nasality on nasal sounds occurs when there is an obstruction to the air flowing out through the nose, causing the voice to sound blocked. Hypo nasality can occur when a person has a cold or when there is a polyp or tumor in the nasal passage.

What to do when you have a voice disorder?

The two specialists who are usually involved in the management of a voice disorder are the ENT specialist and speech language pathologist. An ENT specialist will determine whether the laryngeal diseases are the causes of the voice problem. The speech language pathologist evaluates the person's voice and its quality, how the person uses his voice, what life conditions are affecting the voice and what behaviours are associated with the voice disorder. An appropriate treatment technique can then be determined to manage the voice disorder.

Sometimes a voice disorder does not create any communication barriers. However, the voice may just sound unpleasant to listeners and discomforting for the speaker. The person with the voice disorder may often run into difficulties in their personal well being, social life and at work. A voice disorder may cause more hardships if left untreated. Treatment for voice difficulties can be sought for at any age.

