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Esophageal Speech

Definition: Esophageal speech, also called esophageal voice, is speech produced by swallowing air and forcing it out again through the esophagus. Patients who have had their larynx, or voice box, removed because of cancer have to practice esophageal speech to communicate verbally.

Anatomy and physiology: The larynx (voice box) is a 2-inch, tube-shaped organ in the neck toward the front of the body between the pharynx (throat) and the trachea (windpipe). The larynx is part of the body's respiratory (breathing) system. One of its main functions is to protect the airway to the lungs from food or drink "going down the wrong tube." The pharynx is a hollow tube about 5 inches long that starts behind the nose and ends at the top of the trachea and esophagus. The trachea, also part of the respiratory system, connects the larynx to the lungs. The esophagus is a muscular tube that connects the mouth and pharynx to the stomach. It lies between the trachea and the spine. The esophagus is part of the digestive system. When food is chewed and swallowed, the esophagus contracts to push the food down into the stomach where digestion takes place.

Briefly, the human speech process begins when air streams from the lungs and passes over the vocal folds (vocal cords) in the larynx. The steady airstream causes the vocal folds to vibrate, which produces sound waves. The sound waves are then shaped and modified by the pharynx, tongue, lips, palate, and teeth to produce intelligible speech sounds.

Throat cancer: Throat cancer—also called vocal cord cancer, laryngeal cancer, and cancer of the glottis—strikes the vocal folds, larynx, or other areas of the throat. It appears as a malignant tumor in almost any part of the throat. Although a person's genes may contribute to the development of throat cancer, the most common cause is smoking. Excessive alcohol use also increases the risk of developing throat cancer. Throat cancer occurs most often in adults older than 50 and in men 10 times more often than in women.

In the early stages, doctors can successfully treat throat cancer with radiation therapy or chemotherapy or a combination of the two. Following such treatments, most patients are able to keep their larynx and speak more or less normally. In the later stages of the disease, the most common treatment is surgery to remove the larynx along with the cancerous tumor. When a patient needs surgery, the type of operation depends on the size and exact location of the tumor. Surgeons may remove part of the larynx (partial laryngectomy) or the entire larynx (total laryngectomy).

Speaking after a laryngectomy: Patients without a voice box must learn to speak all over again. Several methods and a number of medical devices are available to help patients recover their ability to speak. One of the most common techniques is esophageal speech. With esophageal speech, the patient learns to take air into the mouth and swallow it or force it into the esophagus and then trap the air by locking the tongue to the roof of the mouth. The air is now in the digestive system, not in the respiratory system as normal. The patient then forces the air through the esophagus and back up into the mouth, much like a controlled belch. This causes the air to vibrate, along with the walls of the esophagus and the throat, and produce a low-pitched sound

that becomes the patient's voice. The patient then shapes the voiced sound into recognizable words, as normal speakers do, with the tongue, lips, palate, and teeth. The esophageal voice emits a low-pitched guttural, croaking, sometimes soft and barely audible sound that many listeners find difficult to understand.

Because they must learn to train parts of their body for a new purpose, many patients find esophageal speech more difficult than speech they might produce with special medical devices. On the plus side, esophageal speech costs patients less than some other techniques because it does not require special equipment.

Living without a larynx: People who have had their larynx removed are known as *laryngectomees*. They must contend with more than learning to speak a new way. When the larynx is taken out, it leaves an opening in the neck called a *tracheostoma*, or *stoma*, for short. Patients cough, sneeze, and breathe through the stoma. They become neck breathers. The trachea is exposed through the stoma, so they need to take special care of the stoma. They have to keep it clean and moist. They have to cover it when showering and shaving. They usually have to avoid activities like swimming or water skiing. They have to watch for a buildup of dried mucous, which occurs naturally to lubricate and moisten the esophagus. They must be especially careful of coughing and sneezing, which can expel large amounts of phlegm, a mucous of the respiratory system. They must eat much slower, which also means they have to learn ways to keep their food hot and appetizing. And they must cope with the changes in their physical appearance.