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# Speech Therapy Voice Training For The Laryngectomee

Voice training is done to find an appropriate source of sound production that can be articulated for communication purposes. Criteria for selecting sound source include: degree of tissue loss, esophageal stenosis, physical limitations of the patient; noise level of the patient's environment; motivation level; and patient's preference of sound source.

## Types Of Sound Source

There are mainly three types of sound source a patient can choose from. These are: external man-made prosthesis or artificial larynx; sphincter like junction of the pharynx and esophagus or esophageal speech; and lastly, surgically implanted device or transesophageal puncture and silicon prosthesis.

### Artificial Larynx

The principle of artificial larynx is to have an external mechanical sound source that is substituted for the larynx. Anatomic structures for articulation and resonance are most of the time unaltered.

There are two general types of electrolarynges that are available: neck type and intra oral type. The neck type is placed flush to the skin on the side of the neck, under the chin, or on the cheek. Sound is conducted via the oropharynx and is articulated normally.

The intraoral type is used for patients that can't conduct sound through skin adequately. A small tube is placed toward the posterior oral cavity, and the produced sound is then articulated. The tube has little effect on articulatory accuracy if the patient is taught properly and learns to use it well.

The advantage of artificial larynx is that voice is restored after surgery immediately and the maintenance of the hardware is minimal. The disadvantage however, is that the quality of sound may seem mechanical.

### Esophageal Speech

How can you put a limit on learning more? The next section may contain that one little bit of wisdom that changes everything.

The principle behind esophageal speech is that air is of greater pressure in one chamber (oral cavity) will flow to a chamber containing less pressure (esophagus), if these chambers are connected.

Goals of esophageal speech include: to be able to phonate upon demand, use a rapid method of air intake, short latency between air intake and phonation, produce four to nine syllables per air charge, achieve a speaking rate of 85-129 words per minute, and attain good speech intelligibility.

There are mainly three methods of esophageal speech. Injection is a method where air in the mouth/nose is compressed by lingual or labial movement and is injected into the esophagus. Swallowing method uses air that enters during oral opening when swallowing. The air is used to produce voice.

Inhalation method maintains a patent airway between the nose, lips and esophagus. The stoma is used for inhalation. Air enters the esophagus when the pharyngo-esophageal muscle is relaxed during inhalation.

The advantage of this kind of speech includes: no external devices, natural sounding speech, and the possibility of pitch and loudness control. Disadvantages on the other hand are: there is reduced length of utterance, is hard to learn and requires good articulation.

### Transesophageal Speech

This is another approach to voice restoration. It requires a surgical/prosthesis procedure that makes use of a man-made device inserted into a surgically created midline transesophageal fistula.

Air is conducted from the trachea to the esophagus through the prosthesis to excite the pharyngo-esophageal segment for voice production.

Advantages include: rapid restoration, natural sound, normal utterance length, hands-free, minimal maintenance and intelligible tonal language. Disadvantages are: the need for surgery, puncture stenosis, candida growth, aspiration of foreign objects, and troubleshooting.

About the Author

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