

Assistive Technology for the Vocal Cords

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Assistive technology in speech is necessary to aid people who have had their vocal cords removed. A laryngectomy, or surgical removal of the vocal cord, is required for someone in Stage II and III of laryngeal cancer. Before surgery, one would select one of three options to regain speech after this procedure: Esophageal breathing, Artificial Larynx, and Tracheo-Esophageal Puncture (TEP). Esophageal breathing is a natural way for one to regain full range of speech through breathing techniques and speech therapy; this is often a long and laborious way to regain speech. Prior to 1929, when ATT&T developed the first completely mechanical assistive device, this was the only option. Since 1960, even more advanced electro larynxes are used to simulate vocal cords. An artificial larynx is an electromechanical device that is held up to the tissue of the neck, and stimulates vibrations similar to ones created by natural vocal cords. The use of this is easy, only requiring mobility of

the hands. This is an option many people may choose in the interim of recovering and learning esophageal breathing. This has helped many people communicate, despite their handicap.



Another alternative is TEP, who requires surgical insertion of valve into the stoma. To speak, one must block with a mechanical valve, or a finger, and this simulates the learned breathing in esophageal breathing. Because it is a surgical procedure, it has more medical risks and side effects. These two alternatives are important advances in biomedical technology; laryngeal cancer is the most common head and neck cancer so the treatment has helped many. Either of the two biomedical options are choices that will depend on the individuals age, life style, doctor's advice and personal preference.