



## **Anatomy and Physiology of Voice Production**

The voice box has many functions, including breathing, coughing, swallowing and voice production. The human voice production requires the fine coordination of three vocal subsystems: (1) the breathing apparatus, (2) the vocal cords (also known as vocal folds), and (3) the vocal tract, which is the space from above the vocal cords to the lips. The voice is produced when air pressure from the lungs and vocal cords coordinate to cause the vocal folds to vibrate. The vibration frequencies produced by the vocal cords are then amplified and modified by the vocal tract, individualizing our voice.

The vocal folds are layered structures and are composed of a gelatinous cover layer and a stiffer muscular core. Various muscles in the voice box control the motion and tensing of the vocal folds, creating certain pitches and controlling loudness. These voice box muscles are innervated by laryngeal nerves on both the right and left sides of the neck. The quality of voice can be adjusted by changing the shape and size of the vocal tract.