

And God Created..... Our Voice

By David Everson

“Out of the depths have I cried unto thee, O LORD. Lord, hear my voice: let thine ears be attentive to the voice of my supplications”. Psalms 130:1-2

The inspired writers of God’s word here and in so many other places in the Bible repeat the theme of calling out or giving praises to the Lord. This using of our voices, mouths and tongues in the praise of God is mentioned without much thought given to the process by which this happens. The mechanism that we produce speech with is an amazing set of structures and is much more detailed than we can cover in a short article, but it is one that should strengthen our knowledge that there is a designer that created these structures. Let’s look at just a little of how speech is produced by our bodies.

There are several structures in your body that are necessary to give us a “voice”. Leaving out the nervous system, the parts of the body necessary to produce speech are the oral cavity, nasal cavity, pharynx, larynx, diaphragm, respiratory and digestive systems. The oral cavity is your mouth, teeth and tongue. We would be speechless without our tongue, and the muscles of the tongue move in a vast variety of ways to form many if not most of our words. Our nasal cavity is vital for tone production and when we have a stuffy nose we sound very much different from our normal self. The sound travels through the pharynx, which is the back of the mouth and nasal cavity. The stomach helps push air out of the lungs to make sounds but the real work of making speech is the larynx. The diaphragm allows us to force air back out of the lungs so that it can vibrate the vocal cords.

Located at the top of the trachea or windpipe and about the size of a large egg, is the larynx. From the outside this structure is called the “Adam’s apple” and as a secondary function it serves to keep food from going “down the wrong tube”. But, making sound is the real magic of the larynx. Using three main types of cartilage, the thyroid, cricoid, and arytenoid cartilages God produced the structure of the larynx. Within the larynx are at least seven muscles that are necessary to function in producing speech. But, the part of the larynx that actually is directly involved in our voice are the vocal folds. These are commonly called “vocal cords” but actually are not really “cords”. These highly flexible folds of skin can be stretched and relaxed to change pitch and frequency which allow us to sing/talk high or low by using the cricothyroid muscles. We can also change the thickness of the vocal folds by use of the vocalis muscles. Both of these muscles are attached to one of the three cartilages, the arytenoid cartilage and has the vocal folds covering it. This cartilage is actually hinged so it can turn away from the center of the larynx and allows the stretching the vocal folds. When we talk or sing the movements of these muscles and cartilage is what is seen when an endoscope is lowered into watch the vocal folds stretch and relax across the airway.

By fine manipulation the larynx is used to generate a source sound of a particular frequency or pitch. This source sound is changed as it travels through the vocal tract. It can be configured differently based on the position of our tongue, lips, mouth, and pharynx. The process of altering a source sound as it passes through the vocal tract creates the many different vowel and consonant sounds of the world's languages as well as tone, certain realizations of stress and other types of language properties. The larynx also has a similar function as the lungs in creating pressure differences required for sound production; a constricted larynx can be raised or lowered affecting the volume of the oral cavity as necessary in making certain sounds.

Certainly in the creation of the vocal mechanism God has shown Himself to be the master designer and Creator of the greatest sound producing machine known to mankind. We should each be like the psalmist when he said “...O God, thou God of my salvation: and my tongue shall sing aloud of thy righteousness.¹⁵ O Lord, open thou my lips; and my mouth shall shew forth thy praise.” Psalms 51:14-15