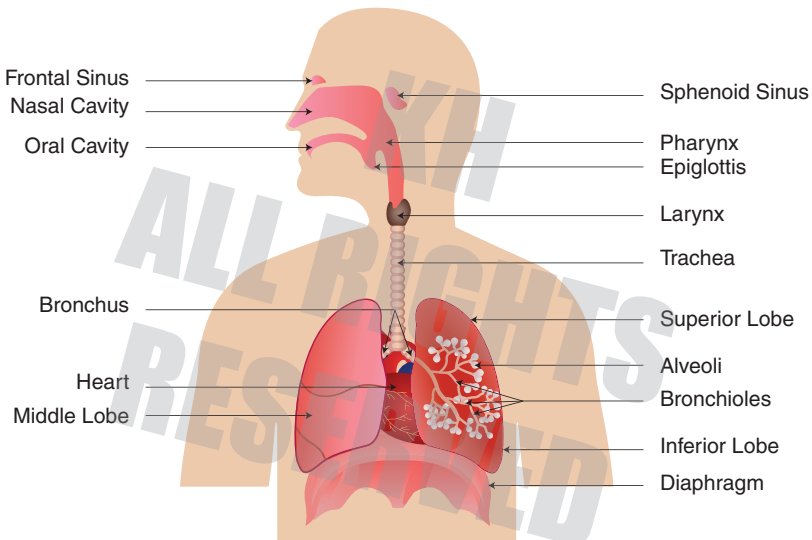


"Speech is the voice of the heart."

—ANNA QUINDLEN

The Need to Breathe: The Mechanics of Breathing and Speaking



©stockhoppe/Shutterstock.com

The parts of our anatomy that are used to speak are also used for other purposes. Speaking is a secondary biological function as all of the basic anatomical parts used in speech are also used for other purposes. Much of the anatomy that is used in speech is also used in ordinary breathing and as such, speech and breathing and breath control in speaking are intimately linked.

The parts of our body that are used to speak can be broken down in to three areas: (1) Phonation, which includes the larynx, vocal folds, glottis, and epiglottis, (2) Resonation, which includes the use of the pharynx, oral

cavity, and the nasal cavity, and (3) Articulation, which includes the lips, tongue, hard and soft palate, lower jaw, and the gums.

Phonation is the process of vibrating the vocal chords for initial production of speech. Resonation is the amplification and modification of the sound originated in the larynx. Articulation is the production of the individual sounds or phonemes of a given language.

When we breathe we take air into our lungs through the process of respiration or inhalation and exhalation. Contracting and relaxing the diaphragm controls this process of respiration. The diaphragm is a muscle located under the lungs and when it contracts air is taken in to the lungs allowing them to expand. When breathing normally you can see the expansion of the stomach pushing outward when the diaphragm expands and on an exhalation the stomach moving inward as air is pushed back out of the lungs.

Becoming aware of the breath is one of the first steps you can take in becoming more aware of the mechanics of speech. If you put your hand on the top part of your abdomen below the rib cage and breathe you will see your hand rise and fall in concert with the inhalation and exhalation of the breathe. Taking a breath in and holding it and then slowly exhaling will indicate the control of breathe that you have and ultimately the amount of breath you can use in a given unit of speech.

The trachea is commonly called the windpipe. It allows the passage of air to flow from the lungs into the larynx. Once air is expelled from the lungs through the trachea it arrives at the larynx where the vocal folds or voice box is located.

The vocal folds can be manipulated by opening or closing them to produce sound. They may be narrowed for voiceless sounds such as an “s” sound. At times they may touch lightly together so that they vibrate such as when we make a “zzzz” sound. When they are closed completely it is a glottal stop and no air passes through the larynx.

When the vocal folds vibrate they create the particular pitch of speech. Shift in pitch is related to the length, thickness, and degree of tension when the folds vibrate. The number of vibrations per unit of time and the intensity with which the bands are moved apart creates vocal tone.

Above the larynx is the pharynx. Sound waves arrive here to begin the process of resonation of the voice. In this cavity we take the vibrational

sounds from the larynx and manipulate the walls of the cavity through shape and tension.

Located just above the larynx and behind the mouth, the pharynx also serves a pathway for breath and speech into the mouth or upward into the nasal cavities. The uvula, which is located at the back of the mouth and at the top of pharynx, acts as a directional aid in determining whether sound travels forward into the oral cavity (mouth) or upwards into the nasal cavity.

Here in the pharynx the quality of the sound of voice begins to be produced. Added tension in this passageway alters the quality of the sound. And with the passage of the sound from here to the oral or nasal cavity there is the determination of what types of sounds will ultimately be created.

Once the breath and sound is directed into either the nasal or oral cavity articulation occurs. In the English language certain sounds are directed upward into the nasal cavity for articulation. These sounds are the “n” and “ng” sounds.

Other articulation of sound occurs in the oral cavity. According to Wells:

For General American English, the center or focus of oral resonance is generally mid-mouth.

For many people, focusing resonance a bit more forward of mid-mouth actually helps to promote greater lip activity, which can result in clearer, crisp sounds. Bring it too far forward in the mouth, you will sound more British than American. If the center of resonance focus is too far in the rear of the mouth, you will sound guttural or even garbled (23–24).

Within the oral cavity are the articulators, which are the lower jaw, lips, teeth, gums, tongue, hard palate, and soft palate. The varying of these structures creates the sounds of language.

Importance of Breath Control

Controlling the breath is an essential element for good vocal control. Without control of the breath the speaking voice may sound winded or weak and proper vocal variety may not be achieved. When one is in control of the breath they may exert a greater control of the flexibility of vocal production and create greater vocal effect in their speaking.

Since the voice may be controlled by the breath, supporting the breathing apparatus and aligning it for greater use is of the utmost importance. Speaking may be said to start with a thought and that thought is then converted into speech, which is a physical activity. Only when breathing is controlled can that speech reach a freedom of expression desirable for communication.

A free deep intake of air pulled from the diaphragm will support the voice for speech. If one is breathing shallowly by simply expanding the lungs, the breath will remain unsupported and the speaker will not have the capacity to express longer units of thought.

Diaphragmatic breathing will also help the speaker strengthen the voice so as not to speak too much from the throat. Throat speaking will create a hoarse and weak vocal production that will quickly tire the voice.

When we breathe without thinking it is our diaphragm that is doing the work of inhalation and exhalation. Relaxing into this natural rhythm is the desired first step in understanding the use of the breathe for the purposes of speaking.

To check for diaphragmatic breathing, stand and place your hand on your upper abdomen just below the rib cage. Slowly draw in a breath. As you do so, you should notice that your abdomen should expand outward from your body. You will see your hand move in that same direction. Slowly push your hand against your abdomen while exhaling the air.

If you are not witnessing the natural inhalation and exhalation from the diaphragm you might try lying on the floor with a book on your stomach. As you lay there relax and breathe. Soon you should see the book rising and falling along with the rhythm of the inhalation and exhalation of air from the diaphragm.

Breathing Exercises

To get your body ready for good diaphragmatic breathing, do the following:

Stand up straight and tall with your legs shoulder width apart.

Stretch upwards with your arms reaching toward the ceiling.

Come up on your toes and balance.

Slowly drop back down to your heels.

Drop your fingers.

Drop your wrists.

Drop your elbows.

Drop your shoulders.

Drop your neck.

Drop your chest.

Roll down from the waist.

Hang for a moment from the waist feeling the small of your back fill with air.

Slowly roll the back upward. As you do this concentrate on stacking one vertebra on top the other. Take your time doing this until you slowly roll your neck upward and your standing up straight and tall.

As you reach the end of this you will be aligned properly for breathing and speech.

Now, let's relax the body a bit so that you aren't too rigid.

Drop your head forward and slowly roll your neck in a circle. Do this three or four times one direction and then reverse direction.

Roll your shoulders back from your body in a circular motion lifting them up, pulling them back, and then circling back around. Do this circling three or four times and then reverse direction.

Shake your arms freely to loosen then up.

Standing up straight and tall, feet should width apart, breath in expanding the diaphragm.

Open your mouth by dropping your jaw and make a gentle "ahhhhh" sound as you exhale. Do this three times.

Next time concentrate on pulling in as much air as you can from the diaphragm and hold it. When you exhale this time relax your jaw and make a loud long "ahhhhhhh" sound letting the voice trail off as the last of the air is expelled from your lungs.

Finally stand and breathe normally in and out feeling the breath as it is supported by the diaphragm and is moving freely through an aligned body.

Breath Control Exercises to Eliminate Shallow Breathing

We sometimes forget that our breath control comes from our diaphragm, not our lungs. You don't want your collar bones or shoulders to raise and lower as you breathe, which indicates that you are breathing too shallowly. Try the following exercises to eliminate shallow breathing:

1. Place both hands on your upper chest with your thumbs facing your collar bones. Take a deep breath in and count from one to ten on your exhale. If you can feel any upward movement of your shoulders, use the pressure of your hands to prevent it.
2. Sit comfortably erect in an armless chair. Grab the bottom of the chair seat firmly with each hand. This should keep your shoulders from rising as you inhale and exhale feeling your diaphragm expand like a bellows on the inhale, and conversely contract on the exhale, noticing that your shoulders remain motionless.
3. While standing or sitting, count to four silently as you inhale, and count to four again silently as you exhale. Continue that count for several cycles of breathing, then increase the silent count to six on your inhale, and six on your exhale for several cycles of breath. Keep increasing your counts up to fifteen or more and you will develop great breath control. If you do this while walking any distance you can synchronize your steps to your counts, and get two kinds of exercise in!