

The Powerful and Vulnerable Cords

Veteran Hollywood voice teacher Elizabeth Sabine offers some tips from her forthcoming book.

As Giovanni Battista Lamperti once said, "it is not breath, but pent-up pneumatic energy that feeds the initial vibration of the singing tone." He said this around 1890, before electronic energy was widely known about, and certainly not used.

Only a *small* amount of air pressure is needed under the cords for them to act as *resistors*, but it must be controlled. These tiny, fragile vocal cords act as a multi-frequency modulator. This means that frequencies created by the vocal cords are the result of messages from the brain. These electronic impulse messages move along the nerve tissues until they reach the vocal cord muscles, telling them to create the pitches you desire.

If the abdominal muscles are not tightened to create the electrical energy needed to produce these impulses, you will be forced to push breath through the cords (the method usually taught by most voice teachers) and end up gushing your words out, a la Marilyn Monroe.

As you know, too much air pushed through the cords distresses and dries them out. The cords *can* work as a woodwind instrument, but the effect is usually light and pretty and you can easily go off pitch. It's a sound sometimes used by folk singers, but this type of voice is not usually optimal for singing rock, Broadway or opera.

THE ACTION OF THE VOCAL CORDS

The human larynx is a magnificent instrument, and the vocal cords, if used correctly, can function relentlessly for hours. Put your finger on your Adam's Apple—the protuberance that juts out like a lip on top of the actual larynx. Women don't have as large an Adam's Apple as men, but you can still feel the slight lump moving up and down if you put your fingers across your throat and swallow. Try making a very low oooooh sound, and feel it move down. The vocal cords emanate from the cartilage inside the larynx, approximately half an inch down from the Adam's Apple.



Emulating the emotional cries of a child can help unlock a powerful voice.

Put your fingers up in front of you as if you were indicating the peace sign, or the letter V, then turn them down and around in a horizontal position with the fingers pointing toward the throat. The vocal cords are open in this way whenever you take in a breath.

Now, staying in the same position, bring these same two fingers back together again until they are touching. This is like closing off the passage for the flow of air, but it is the position necessary for the vocal cords to come together and to resist a little air pressure, thus allowing them to vibrate, which then make frequencies.

You can consciously control your vocal cords by pulling them together and closing the glottis (the space between the cords). As an experiment, breathe in, and then close off the vocal cords by holding your breath while your mouth is open. You will feel as though there is a trap door in your throat and you won't be able to breathe in or out. Now do a hiccup and notice how the cords jam together. Make some vowel sounds and pitch them in a very deep baritone or contralto voice. The body can then stabilize the instrument for the pressures and tensions needed to sing powerful, high notes.

The above action is likened to clamping a capo on the neck of a guitar and creating a higher pitch by shortening the length of the strings that are going to be plucked.

When air is brought into the lungs, the vocal ligaments (cords) must be approximated (held together) and tensed to prevent the leakage of air, and to keep the thorax (upper part of the body) rigid in order for a person to efficiently lift a heavy object, defecate, flatulate, urinate, or give birth to a baby. When straining to do one of these acts, leakage of air through the tight vocal cords effectively produces "grunting" sounds.

.....A quote from a Clinical Symposium Booklet

But please be careful. Any of these actions could cause damage to your voice.

EVEN THE EXPERTS ARE CONFUSED

I once made an appointment to see a well-known laryngologist to share my findings concerning the new discoveries about how the human voice actually works. I went late in the day after his patients had left so they would not be disturbed by my demonstrations. After showing him the strength of my voice, done with very little breath and in a high range, he stated that adult vocal cords could *not* possibly handle the vocal sounds children make (despite the fact that I had almost ripped the wallpaper off his walls with my childlike screams).

He said I must be the possessor of a freak larynx, although he had examined my throat earlier and told me my vocal cords were perfectly normal. When I mentioned I was successfully training adults to make these same sounds he suddenly looked at his watch and said, "We will have to discuss this matter some other time. I'm too busy right now to go into it further." I was not at all surprised when he didn't follow up on what I'd shown him.

The vocal anatomy is a delicate and complicated area. It causes many medical students trouble in understanding the throat because of the many delicate muscles and cartilage woven into this wonderful instrument. Doctors who specialize in ear, nose and throat problems have my respect, but I have yet to come across one willing to listen to my findings on the procedures necessary to strengthen the human voice.

VOCAL CORDS IN ACTION

In the field of otolaryngology (disorders of the ear, nose, and throat) it is believed that adults cannot produce the sounds made by children because of the physical differences in the anatomy—namely, the thickening and stiffening of the cartilage of the larynx.

A few years ago I went to see a well-known otolaryngologist who specialized in capturing fiber-optic images of the vocal cords. After numbing my throat with anaesthetic, the doctor inserted a microscopic lighted camera up my nose and down into my throat. The images were then transferred onto a screen for viewing. Instructed to speak in a low pitch, I watched the vocal

cords relax and sink into the throat, then in a higher pitch, they become longer and tighter. In contrast, when I laughed, the vocal cords repeatedly bounced off each other.

I left the doctor's office a short time later, awed that these small vocal cords, just under or over one inch in length, could spark energy into such great sounds.

WHAT VOCAL SCIENTISTS DON'T KNOW...

...and they admit it! Some years ago at a Los Angeles conference of singing teachers, the main speaker presented her specific method of training to the audience, showing pictures of the different parts of the vocal anatomy. She had done a lot of research into voice science and I was very impressed with her ability to remember the names and functions of the many tiny muscles that make up the larynx.

As a scientist, this woman had done a lot of laboratory study into voice physiology, acoustics and perception, instructing at colleges and at professional levels for over thirty years. She had also published papers in many journals of the voice, and as a senior citizen, still possessed a very powerful soprano voice.

However, at the end of her speech, I was shocked to hear her make this comment: "Singing is an unnatural act, and after all this time, we still don't know exactly how the singing voice operates!" I wanted to immediately jump up and disagree with her findings because I *do* know how the singing voice operates, and it most definitely *is* a natural act. As a senior citizen with a three-and-a-half octave range, I have, since 1978, successfully trained and strengthened thousands of voices of all ages.

Despite her beliefs, I know that all normal people are born with the potential for a great voice. Most of them just have to relearn to use it again the way they did when they were children.

NEVER LET THEM HEAR YOU BREATHE

When speaking or singing, never make a noise when you take in a breath. If you watch the very best newscasters on television they speak clearly and with great energy. With very few exceptions, they do not inhale noisily. Forty percent of vocal damage occurs from breathing in noisily, and sixty percent of vocal damage occurs from forcing or pushing breath back out through the cords.

I'd like to mention two interesting points here. This is connected to the empathy people have with each other. When one of my students sings with frogginess, I unconsciously clear my throat in sympathy. It's similar to when we see or hear someone yawn, we usually follow suit.

The vocal cords, which extend horizontally from the cartilage under your Adam's apple, expand widely at the back when you breathe in quietly. When great Italian opera singers take in a breath, they usually open their vocal cords and throats wide. There is rarely any sound of air intake.

Unfortunately, most people breathe in noisily because they only open the cords part way, leaving insufficient space for the inhaled air. I've heard both amateur and professional singers make this mistake. Breathing noisily also dries out the lamina, which is the jelly-like coating that protects the cords from becoming irritated. Do practice breathing in quickly, but quietly.

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Excerpted from Elizabeth Sabine's upcoming book on vocal techniques from ProMusic Press. Look for it later this year.

