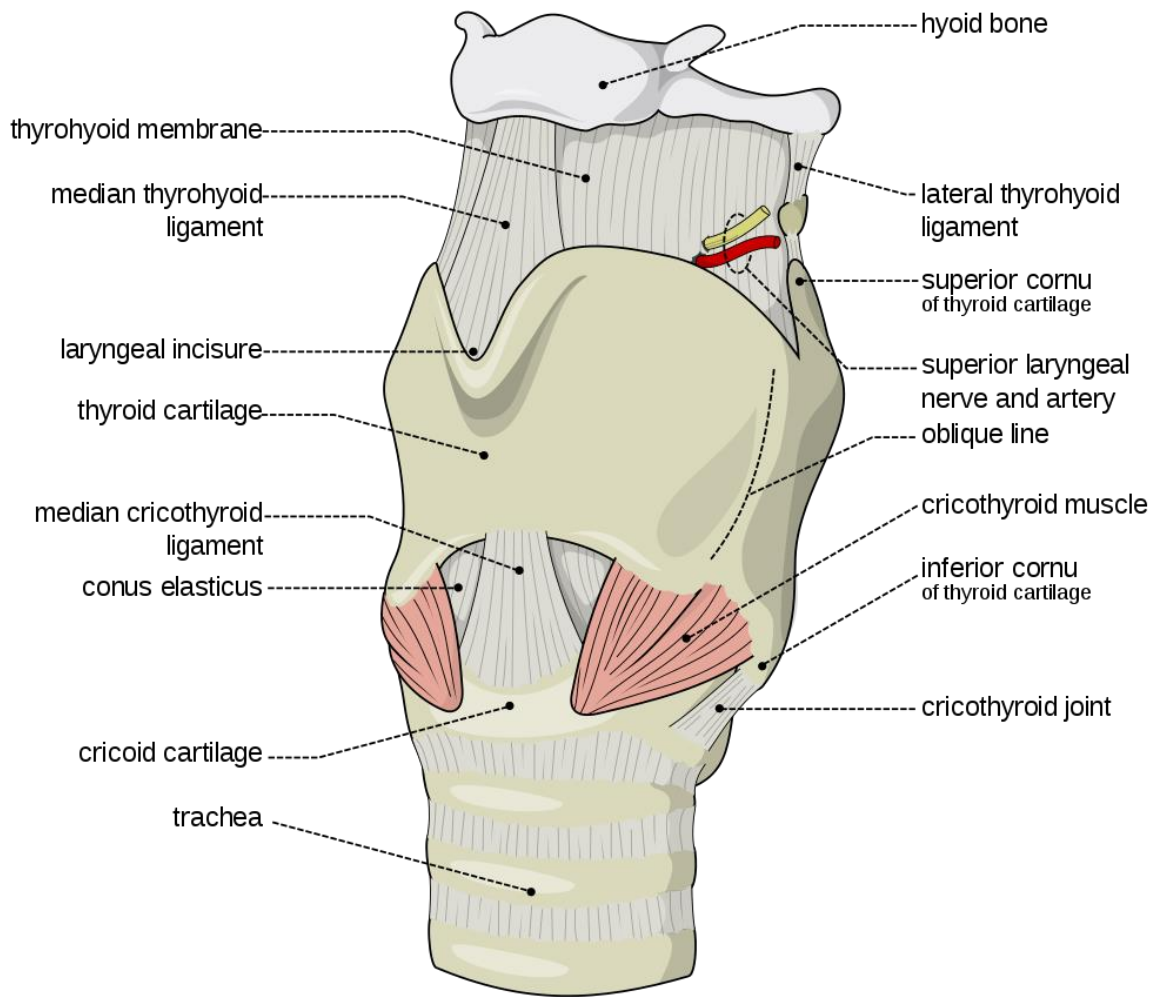


*MECHANISM OF SPEECH SOUND*

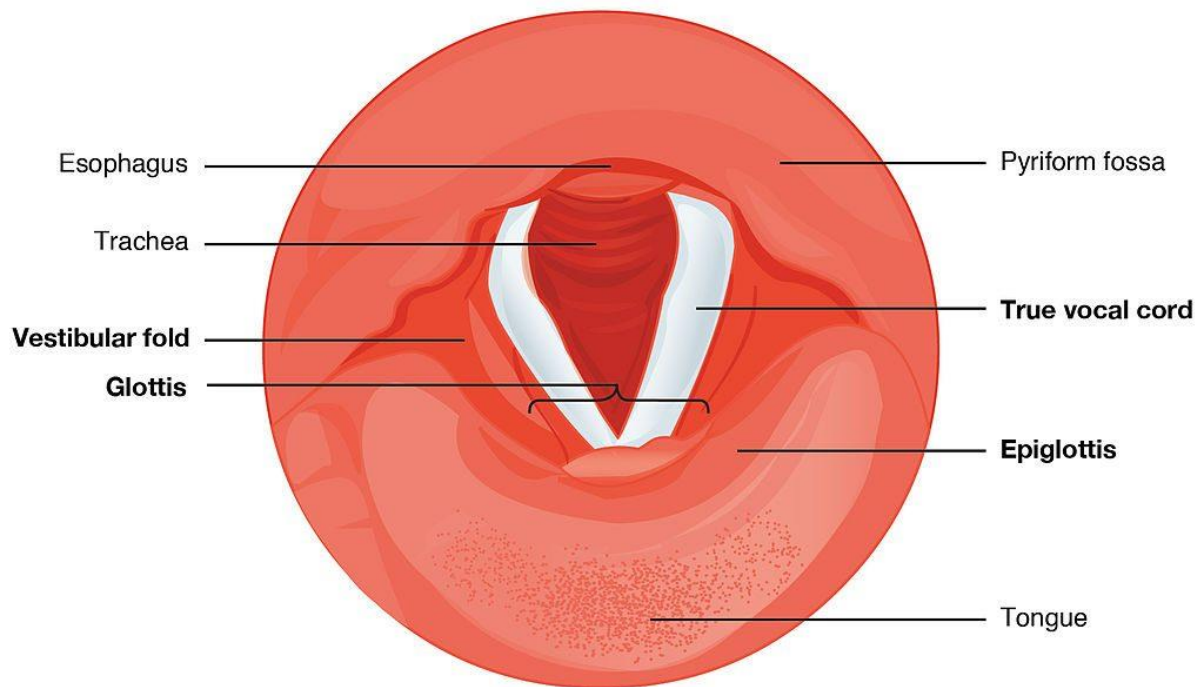
*The study of human speech sounds is known as phonetics. Speech sounds can be examined from two perspectives when studying them. Apart from being a field within linguistics, acoustic phonetics is also a subfield of physics. It is focused on the acoustically sound, physical characteristics of the sound waves we generate. We'll discuss speech sound acoustics in passing, but our main focus is on articulatory phonetics—that is, the process by which humans make speech sounds with their bodies. Three mechanisms are needed to produce speech. The first is a source of energy. Anything that makes a sound needs a source of energy. For human speech sounds, the air flowing from our lungs provides energy.*

*The second is a source of the sound: air flowing from the lungs arrives at the larynx. Put your hand on the front of your throat and gently feel the bony part under your skin. That's the front of your larynx. It's not actually made of bone; it's cartilage and muscle. This picture shows what the larynx looks like from the front.*

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*This next picture is a view down a person's throat.*



*What you see here is that the opening of the larynx can be covered by two triangle-shaped pieces of skin. These are often called “vocal cords” but they’re not really like cords or strings. A better name for them is vocal folds.*

*The opening between the vocal folds is called the **glottis**.*

*We can control our vocal folds to make a sound. I want you to try this out so take a moment and close your door or make sure there’s no one around that you might disturb.*

*First I want you to say the word “uh-oh”. Now say it again, but stop half-way through, “Uh-”. When you do that, you’ve closed your vocal folds by bringing them together. This stops the air flowing through your vocal tract. That little silence in the middle of “uh-oh” is called a glottal stop because the air is stopped completely when the vocal folds close off the glottis.*

*Now I want you to open your mouth and breathe out quietly, “haaaaaaah”. When you do this, your vocal folds are open and the air is passing freely through the glottis.*

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*Now breathe out again and say “aaah”, as if the doctor is looking down your throat. To make that “aaaah” sound, you’re holding your vocal folds close together and vibrating them rapidly.*

*When we speak, we make some sounds with vocal folds open, and some with vocal folds vibrating. Put your hand on the front of your larynx again and make a long “SSSS” sound. Now switch and make a “ZZZZ” sound. You can feel your larynx vibrate on “ZZZZ” but not on “SSSS”. That’s because [s] is a voiceless sound, made with the vocal folds held open, and [z] is a voiced sound, where we vibrate the vocal folds. Do it again and feel the difference between voiced and voiceless. Now take your hand off your larynx and plug your ears and make the two sounds again with your ears plugged. You can hear the difference between voiceless and voiced sounds inside your head.*

*I said at the beginning that there are three crucial mechanisms involved in producing speech, and so far we’ve looked at only two:*

*Energy comes from the air supplied by the lungs.*

*The vocal folds produce sound at the larynx.*

*The sound is then filtered, or shaped, by the articulators.*

*The oral cavity is the space in your mouth. The nasal cavity, obviously, is the space inside and behind your nose. And of course, we use our tongues, lips, teeth and jaws to articulate speech as well. In the next unit, we’ll look in more detail at how we use our articulators.*

*So to sum up, the three mechanisms that we use to produce speech are: respiration at the lungs,*

*phonation at the larynx, and*

*articulation in the mouth.*