

A Review of the Breathing Mechanism for Singing

Part II: Methods of Breathing

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Part I of this series examined the various muscles, organs, and bones of the breathing mechanism and how they work together to cause both active and passive inhalation. Since every singer's body and voice are different, there are numerous ways one can organize the breathing mechanism and still produce a health, efficient, and vibrant sound. Part II will provide an overview of the four main methods of organizing the breathing mechanism and will give a definition and explanation of the term *appoggio*.

Methods of Breathing

Clavicular Breathing. Clavicular breathing relies on the muscles of the chest, shoulders, upper back, and neck to elevate the upper rib cage and chest for each inhalation. This causes the upper chest and lungs to expand, resulting in inhalation. Once these muscles relax, the rib cage collapses to its pre-breath position, decreasing the dimensions of the upper chest and expelling air from the lungs. This method of breathing is extremely prevalent in the untrained or beginning student.

While clavicular breathing does allow the respiratory system to exchange carbon dioxide for oxygen, thus keeping one alive, it offers little added benefit for singers. The amount of muscle required to elevate the rib cage is extraordinarily fatiguing.

Additionally, the speed with which the chest collapses after inhalation expels the air rapidly and with little control. This method will generally limit the descent of the diaphragm and not allow a singer to take a full, complete breath. Responding to this lack of air, the vocal folds will either fail to close completely, producing a breathy sound, or succumb to their biologically programmed response to act like a valve, closing too tightly and producing a tight or pinched sound.

Costal Breathing. Costal breathing places emphasis on rib cage expansion.

Students employing costal breathing use the external intercostal muscles to expand the rib cage in all directions, with particular attention on the sides and back. When properly executed, the diaphragm descends completely and the singer is able to control breath flow and pressure during exhalation.

Costal breathing is also a method of breathing advocated by many fitness programs (e.g. pilates) because it allows the transversus abdominis to remain contracted during the entire breathing cycle and provides more stability to the pelvis and spine. Though not in and of itself a problem, it can encourage some people to limit the descent of the diaphragm, particularly those with a strong background in fitness. As with clavicular breathing, the limited diaphragmatic descent does not allow for a full and complete breath. Additionally, the abdominal muscles may be over-contracted, which will reduce a singer's ability to control breath pressure and flow during exhalation.

Teachers who advocate this method of breathing should be on the lookout for over engagement of the abdominal muscles or excessive expansion of the ribcage that causes tension.

Abdominal Breathing. This is sometimes referred to as “belly breathing,” Singers emphasize the release of the lower abdominals, which allows the diaphragm to descend fully. In many cases this causes the lower stomach, or belly, to protrude during each inhalation. This method of breathing can be very helpful for students whose “go to” breathing habit is clavicular breathing: it is easy to see and feel and is a viable alternative to clavicular breathing. It can also be helpful for students who lack a sense of grounding or depth in their breathing.

Teachers who advocate this method of breathing must be cautious, however. The sole focus on abdominal expansion can neglect the importance of the ribcage in the breathing process. Students should be encouraged to maintain proper body alignment since excessive protrusion of the abdomen can cause slouching. Additionally, in certain pedagogies, some students are taught to forcibly push the stomach out during inhalation and exhalation. The abdominal force created by some practitioners of this method results in over-pressurization of the vocal mechanism and creates a pinched, pressed, or forced sound.

Diaphragmatic/Costal Breathing. This method allows the full descent of the diaphragm and the elevation of the rib cage. It is sometimes called combined or balanced breathing because it combines the best qualities of costal and abdominal breathing. The abdominal muscles relax during inhalation and gently engage during exhalation. The external intercostals expand the rib cage for inhalation and then work to keep it expanded during exhalation. By keeping the rib cage open, the external intercostals allow the abdominal muscles to take on the bulk of exhalatory control. In this way, a singer is able to take a full, complete breath and control how that breath is used in the singing process. This is the method of breathing taught in the “Italian School” of singing and is often referred to as *Appoggio*.

Appoggio

The term *appoggio* comes from the Italian words *appoggiarsi a*, “to lean upon,” and is one of the hallmarks of the “Italian School” of singing. Richard Miller gives this definition of the term:

Appoggio cannot narrowly be defined as “breath support,” as is sometimes thought, because *appoggio* includes resonance factors as well as breath management... The historic Italian School did not separate the motor and resonance facets of phonation as have some other pedagogies. *Appoggio* is a system for combining and balancing muscles and organs of the trunk and neck, controlling their relationships to the supraglottal resonators, so that no exaggerated function of any one of them upsets the whole.ⁱ

The muscles of inhalation and exhalation balance themselves in such a way that the singer has complete control over how much air reaches the vocal folds and at what speed.

For appoggio breathing, the singer must first find a proper alignment of the head, neck, and rib cage. This alignment allows the ribs to expand and the diaphragm to descend properly. Additionally, the elevated rib cage provides a stable foundation for the muscles that connect the chest and the larynx (the infralaryngeal muscles). This helps to position the larynx comfortably low within the neck and provides stability to the entire laryngeal mechanism. This comfortably elevated rib cage position is maintained throughout the breathing cycle.

During inhalation, the rib cage expands to the front and sides, and slightly to the back. The diaphragm descends, displacing the abdominal viscera, which causes the stomach to expand. As Miller describes, “the region between the sternum and the umbilicus moves outward on inspiration, but the chief outward movement occurs in the lateral planes.”ⁱⁱ

At the start of exhalation, the singer should feel no sense of grabbing or holding in the throat. This inhibits the biologically programmed response of the larynx to act as a valve; the larynx and throat should remain open and free. The chest and sternum should remain comfortably elevated during the entire phrase and the rib cage should

remain relatively expanded. Obviously, the lateral expansion will fall toward the end of each phrase, but the student should work to keep this expanded as long as is comfortable. The overall position of the torso should be the same at the end of each phrase as it was at the beginning: “posture need not be altered for the renewal of breath.”ⁱⁱⁱ

Conclusion

Obviously, solely understanding the theory behind how the breathing mechanism works will not necessarily allow a singer to take a good breath. No amount of technical understanding can compensate for a lack of experiential understanding. How teachers help students discover the most efficient way to breath is part of the art of teaching. This review of the breathing mechanism is the first step in helping our students to breath more efficiently. If you are interested in specific information on how to teach breathing, I would encourage you to check out some of the other articles on this site or to visit the suggested reading list that follows.

ⁱ Richard Miller, *The Structure of Singing: System and Art in Vocal Technique* (Belmont, CA: Schirmer, 1996), 23.

ⁱⁱ Miller, 24-25.

ⁱⁱⁱ Ibid., 25.

Suggested Reading List

Blades-Zeller, Elizabeth. *Spectrum of Voices*. Lanham, MD: The Scarecrow Press, 2002.

Doscher, Barbara M. *Functional Unity of the Singing Voice*. 2nd ed. Lanham, MD: The Scarecrow Press, 1994.

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