

## **Pelvic Floor and Plantar Floor Resistance Influences on Laryngeal Regulation (Speech and Singing)**

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Aerodynamic pressure is related to resistance at the glottis and to airflow produced by the floor we stand on, the pelvis diaphragm we hold ourselves together with and the abdomen and rib cage musculature we push air out with.

Air pressure, or flow, is managed by our tongue and vocal cords. The amount of resistance that we consciously or unconsciously create at our nasal cavity, nasopharynx, oropharynx, hypopharynx, thorax and abdomen, depends on the variability of support we receive from the floors we sit on and stand on. Our air flow amount, speed and consistence are reflections of our pressure we produce with resistance regulation (glottis or vocal cords).

Our air resistance for speaking or singing, therefore is an outcome reflective of the pressure we need to produce, through flow regulation (by the nose, pharynx, thorax and abdomen) and the air flow production we need to produce (by the floor/ground and the pelvis diaphragm).

You are very well trained, conditioned and mindful of how to regulate air flow with your tongues, vocal cords, glottal vibration, etc. but you may not be able to create the desirable air pressure you want because of poor nose, oral cavity, thorax, or abdomen orientation or location. Your overall use or representation of one side of your pelvic floor or one side of your foot (plantar) floor, or possibly both sides of each may be limited.

Some speakers and singers, habitually rely only on their abdominal muscles for pressure regulation, while others, depend primarily on motions of the ribcage, and anterior neck musculature to change the volume of the chest cavity, the lumen or opening of the nose or oral cavity (pharynx) for voice production and projection. This kind of aerodynamic dynamics, especially over time reduces the alternation, oscillation and repeated return to lateralized pressure formation, from each of the pelvic floors, and plantar floors.

Singers, especially, have tendencies to “lose” their sense of pressure, tissue compression and variable sites of the bottom of the foot, the plantar surface, for postural sway and re-balance. They often will rely more on a rigid spine, set of back muscles, “locked up” pelvis for aerodynamic pressure challenge and choice.

Subglottal pressure management befriends gravity. Gravity defines pelvis and plantar purpose in human aerodynamics. Aerodynamics are singing, speaking, breathing, coughing, yelling, shouting or screaming. All which are very necessary to fully experience the gift of pressure formation from pelvis and foot compression and decompression.

Maintaining a relative constant pressure below the vocal folds (subglottal pressure) requires dynamic balance between active muscle control at the plantar and pelvis floors, and varying passive elastic recoil forces of the respiratory system. Loss of this dynamic, alternating balance at the pelvis and feet increases unnecessary air flow resistance for pressure regulation, through postural or physiological (Autonomic Nervous System) narrowing of the airway openings at the nose (velo-pharynx) or mouth (oro-pharynx), by tensing muscles at or around these airways (neck, head, face, mouth, etc.)

Ruth William Hennessy, a vocalist trainer in New York, understands this interconnection control through the use of articulatory strategies. “Vocalists must learn to create their instrument as they play it.” Regardless how you sing, we all sing or create aerodynamic pressure resistance and aerodynamic pressure resonance from the bottom of the feet and the bottom of the abdomen.



Here are some thoughts on how you can maximize transformation of aerodynamic pressure and energy, from the ground or floor, into kinetic energy at the pelvis, for abdominal and chest wall air push, that ultimately is regulated and primarily managed by the tongue and vocal cord resistance; for efficient vocal production and control.

Keep your fingers and toes relaxed and unrestricted.

Reduce the amount of time you “lock up” your knees by hyperextending the knee joints when standing. Be aware and mindful of four points on the bottom of your feet; your sense of the end of your big toes, your sense of the heels, your sense of the inside arch touching and leaving the ground or shoe you might be in, and the sense of the lateral toe or outside of your mid foot.

Practice moving from one point (big toe) to another (heel) and back. Slowly, deliberately. With the knees unlocked. With shoes on, and with them off. On carpeted or hard floors. On grass. On sand. On rocks. In synchrony with the other foot, or independently.

Sit and play with your toes using your fingers. Play with the left toes with the right fingers, and vice versa. Play with the toes on the same side of the fingers you use.

Reach up with your fingers, over your head, as far as your body and arms will allow, by going to your toes and leaving the floor or ground with the heels.

With your outreached arms, wrists and fingers at shoulder level, reach forward, after you moved your mid back, back. Or, as you move your outreached fingers and wrists forward, at shoulder level, move your mid back, back, at the same time

Bend over and touch your big toe and toes, with knees bent or without bending your knees. Cross one hand over to the other side and reach down to touch and play with the other toes. Repeat by going to the other toes with the other hand and fingers.