

Resonance is Power!

Make it Work for You!

Presented by

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**Resonance
is Power!**

The Three Pillars of Resonance

1. CORRECT POSTURE

- Lifted and expanded rib cage
- Proper Head Alignment

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The Three Pillars of Resonance

2. DIAPHRAGMATIC-COSTAL BREATHING

- Maintains a lifted/expanded rib cage, even on exhalation!
- Prepares the resonance areas
- Includes appropriate air velocity

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The Three Pillars of Resonance

3. PROPER TONGUE, JAW & LIP POSITION

For:

- Tongue vowels
- Lip vowels
- Voiced consonants



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The Three Pillars of Resonance

All three:

Correct Posture,

Diaphragmatic-Costal Breathing,

Proper Tongue, Jaw and Lip position

must be consciously controlled
until they become automatic!



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is Power!

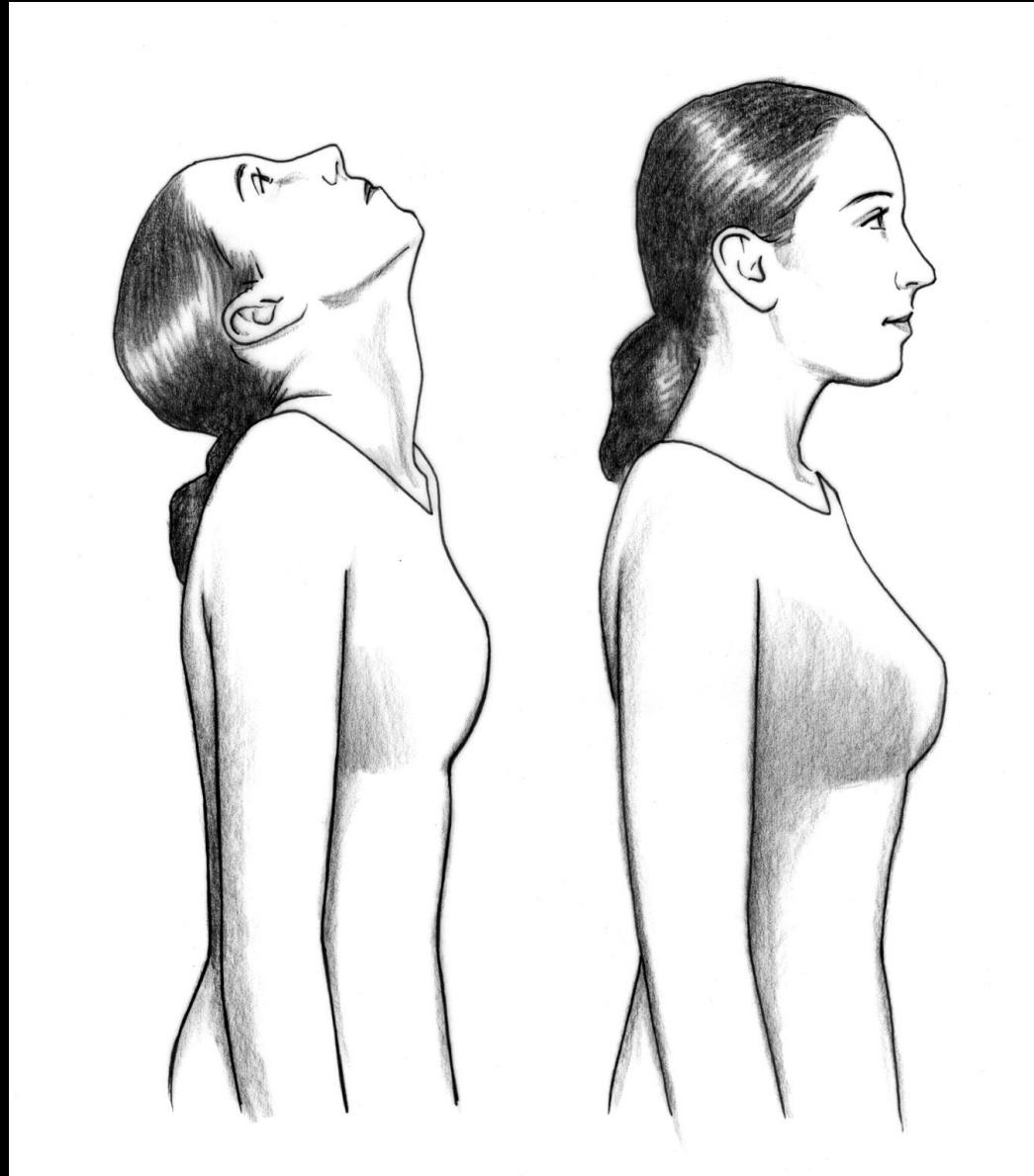
Correct Posture for Singing

Must have:

1. Buoyancy and energy
2. *Comfortably* lifted sternum
3. Expanded rib cage
4. The highest point of the head at the crown

Establishing Correct Posture for Singing

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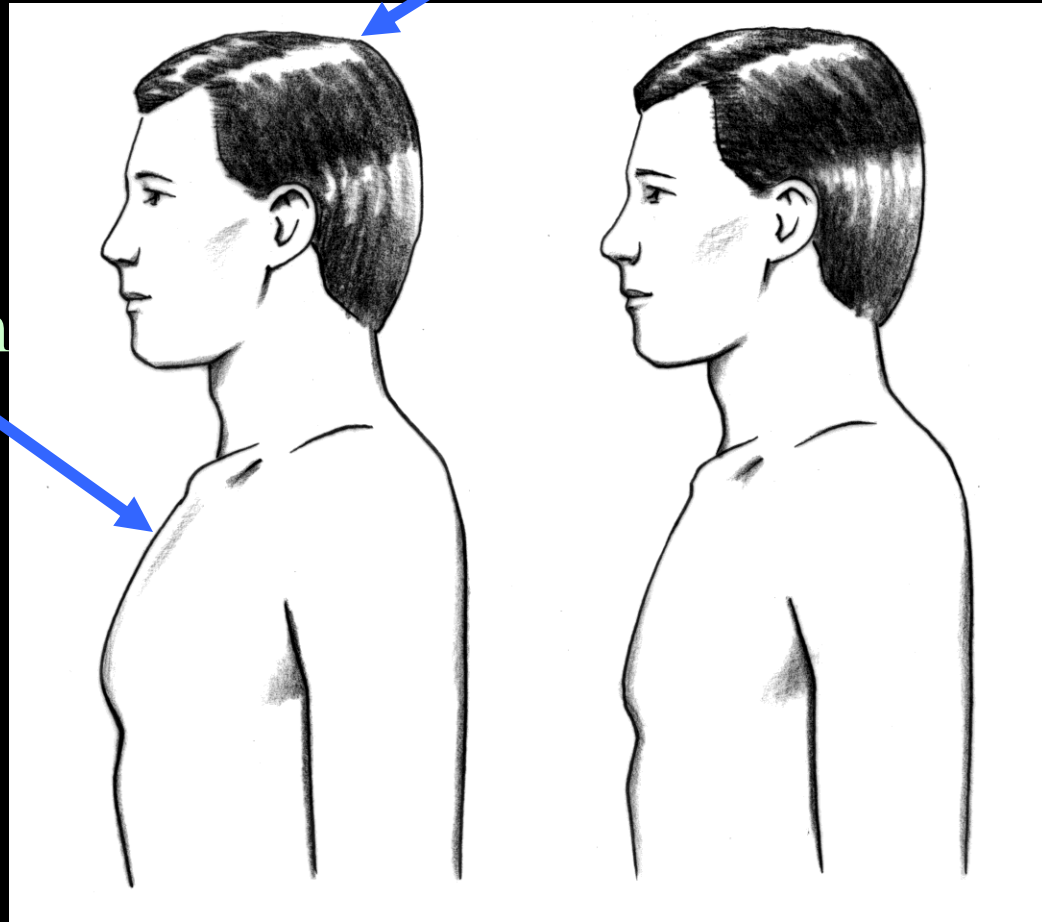


Establishing Correct Posture for Singing

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Lifted
Sternum

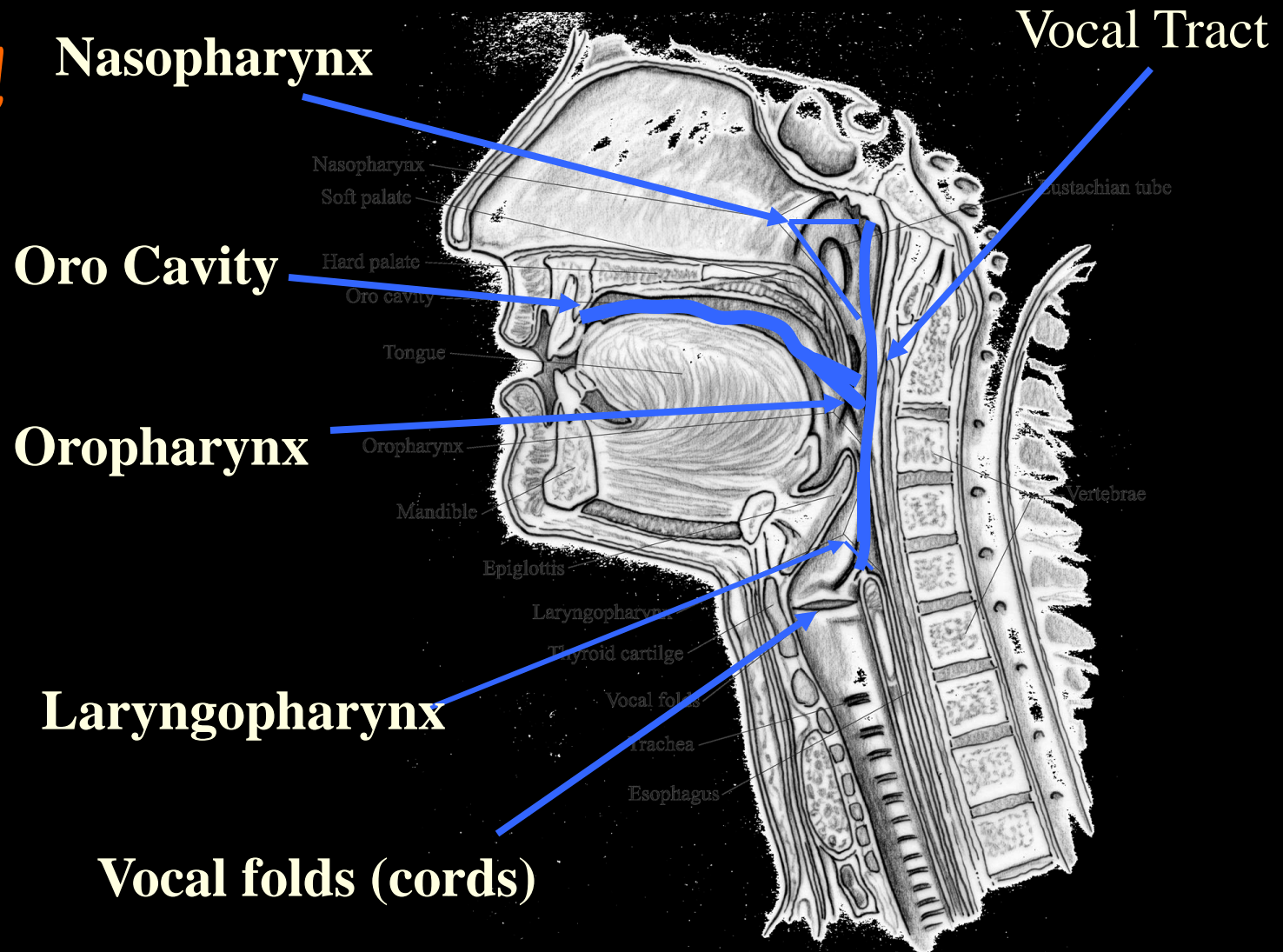
Highest Point of Head



Note the appropriately lifted sternum, and highest point of the head at the crown on the left!

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Resonance Cavities & Vocal Folds





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is Power!**

Establishing Correct Posture for Singing

Setting up and maintaining the correct posture for singing is essential to creating resonance!

Achieving a stretched spine, with the highest point of the head at the crown, allows the larynx, vocal tract, and jaw to be in the optimal position for resonating vowels and voiced consonants!

Diaphragmatic-Costal Breathing

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The Process: Inhalation

1. Singer must be in the correct posture first!
2. On inhalation, the diaphragm contracts and lowers. Because it is attached to the bottom of the lungs, it pulls them down, creating a partial vacuum in the lungs, and drawing air deeply into them.
3. As the diaphragm contracts, the abdominal area (*the viscera*) moves slightly forward to make room for the expanding lungs

Diaphragmatic-Costal Breathing

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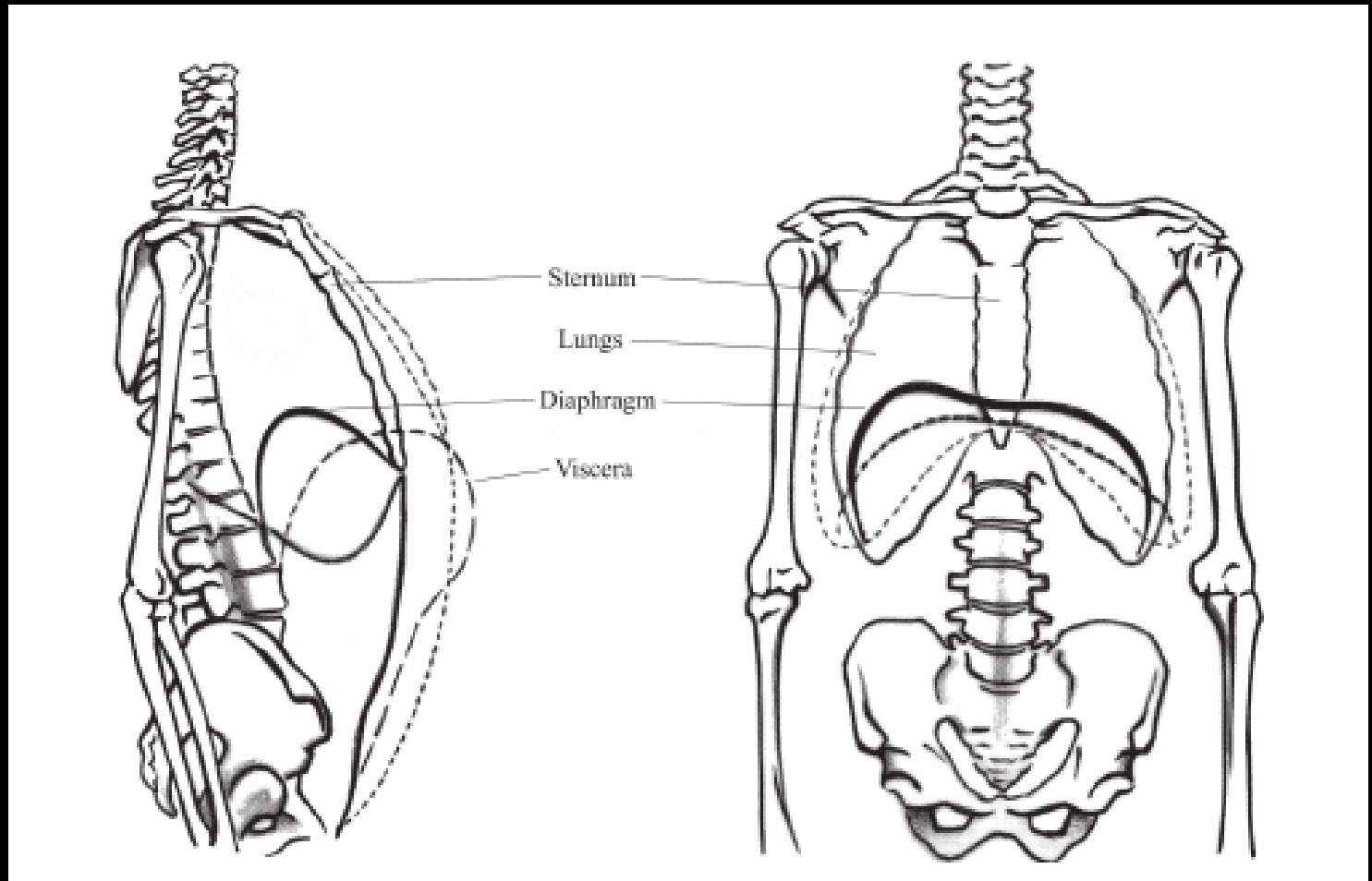
The Process: Exhalation

1. Singer must maintain correct posture throughout!
2. As singing begins, the lower abdominal muscles contract, moving against the viscera & lowered diaphragm to expel the air so the vocal folds are vibrated with a precisely controlled stream of air from the lungs.
3. During the singing process, *the singer maintains the sideward expansion of the rib cage and the lifted sternum* as the diaphragm ascends into the thoracic cavity, so that the next inhalation will be accomplished quickly and fully.

Diaphragmatic-Costal Breathing

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Note the forward motion represented by dotted lines, which demonstrates the *Inhalation Process*



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Diaphragmatic–Costal breathing *Sensations*

Inhalation:

1. Buoyant - energetic posture retained throughout
2. Comfortably lifted sternum and expanded rib cage
3. Sideward expansion of the mid to lower ribs
4. Slight forward motion of the abdomen as the diaphragm descends, and the lungs are filled to a comfortably full level
5. A slight forward motion in the region of the *epigastrium* (*bottom of the sternum/upper abdomen*) as the lungs are filled.
6. No motion or tension in the neck, upper chest, or shoulder area should occur.

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Diaphragmatic–Costal breathing Sensations

Exhalation:

1. Retain buoyant and energetic posture
2. Maintain lift of sternum
3. Maintain sideward expansion of the rib cage
4. Slight muscular tension and inward pull on the lower abdominal muscles as you sing.
5. Slight sensation of outward pressure under the body of the sternum as you sing
6. A definite feeling of muscular effort from the intercostal muscles as the singer attempts to maintain the outward expansion of the rib cage for as long as possible
7. No motion or tension in the neck, upper chest, or shoulder area

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Testing Your Diaphragmatic-Costal Breathing

The Hissing Exercise

1. Establish the correct posture
2. Use the diaphragmatic-costal inhalation process
3. Place your tongue in the position you would use to pronounce the consonant 'S'
4. Expel all your air as you are articulating this 'S' - be careful to maintain your lifted sternum, and expanded rib cage!

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Testing Your Diaphragmatic-Costal Breathing

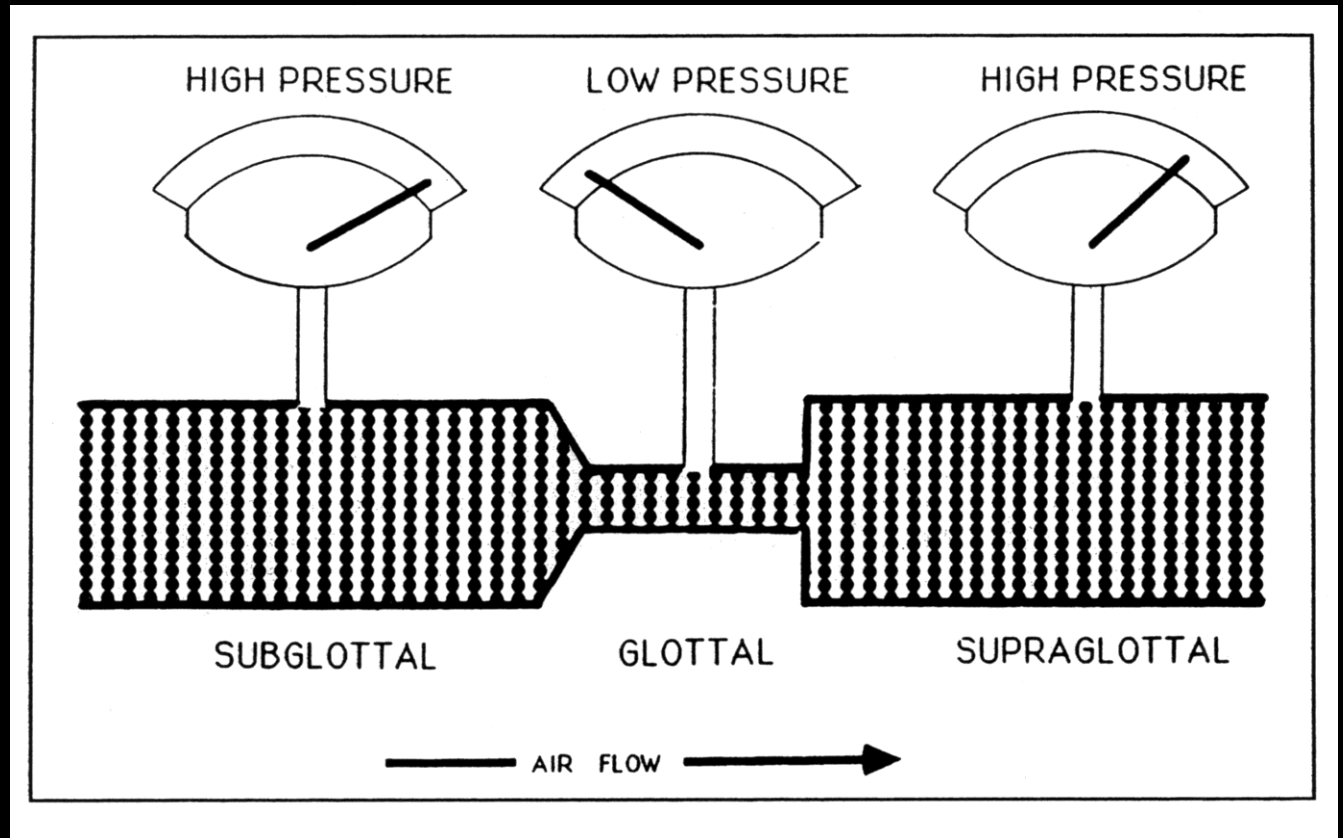
The Hissing Exercise

5. When you have used up all your air, take another breath and expel the air again on the 'S'

The work of expelling the air is done by your abdominal muscles!

The Bernoulli Effect

*Resonance
is Power!*



Air pressure exerted by the singer causes the vocal folds to open, as well as drawing them back together again, thus causing them to vibrate, and sending the vibrations through the vocal tract.

The Vocal Folds in Singing!

- The female vocal folds



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The Vocal Folds in Singing!

- The male vocal folds

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Correct Air Pressure is Essential!

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Too little air pressure = no resonance!

**Too much air pressure blows the
vocal folds apart!**

Too little air pressure keeps the
sound from traveling through
the vocal tract appropriately!

Singers must work for the perfect amount
of air pressure for Bernoulli Effect to help
create a beautifully resonated tone!

Correct Air Pressure is Essential!

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is Power!

Use a *voiced consonant* to check your air pressure as you sing

1. Establish the correct posture
2. Use the diaphragmatic-costal inhalation process
3. Place your tongue in the position you would use to pronounce the consonant 'Z'
4. Sing the exercise played for you on [z], while maintaining your lifted sternum, and expanded rib cage.
5. Take another breath and sing again on the 'Z'

Correct Air Pressure is Essential!

**Resonance
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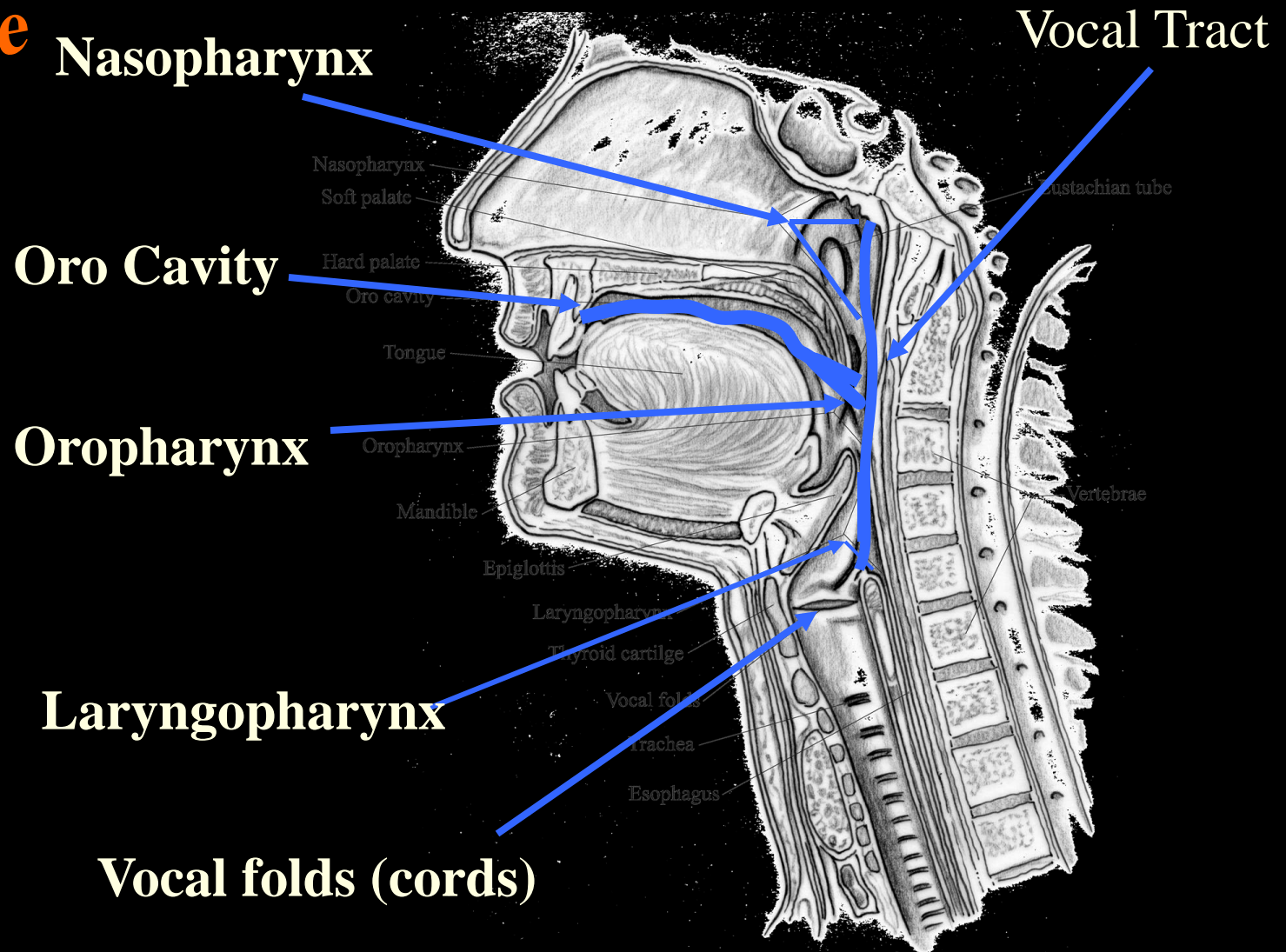
Using vowels and a voiced consonant to
check your air pressure as you sing

6. Try singing the phrase as played for you on [zi]
7. Now try [zu]
8. Now try [zo]
9. Finally, try [zɑ]

Notice how using the “z” brings
the air pressure forward and
makes your sound more resonant!

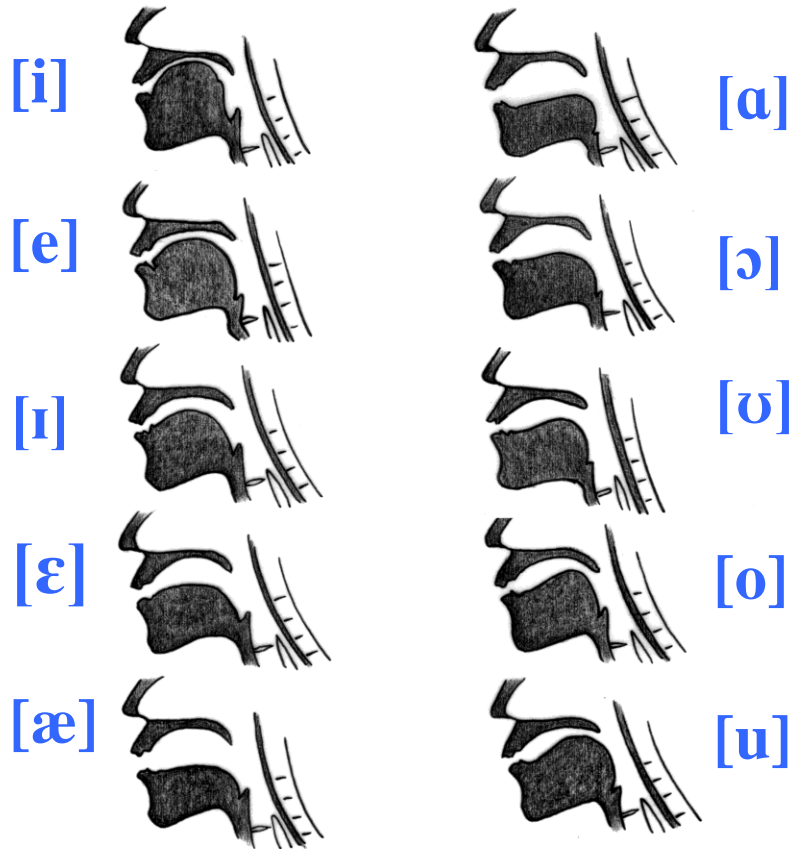
Resonance Cavities & Vocal Folds

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Shaping the Vocal Tract for Proper Resonance

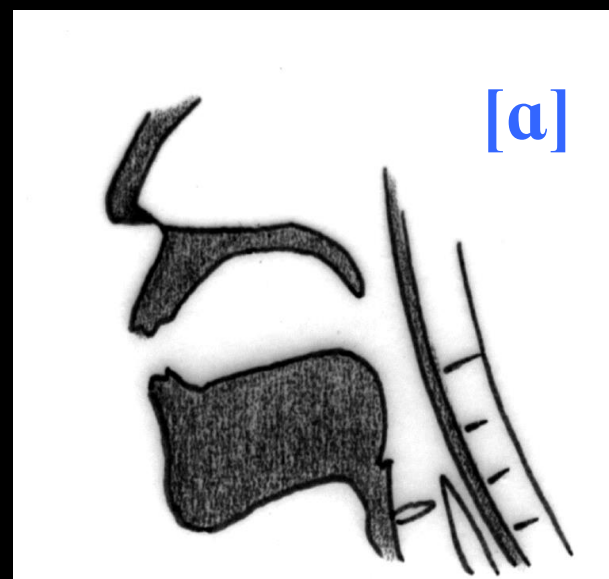
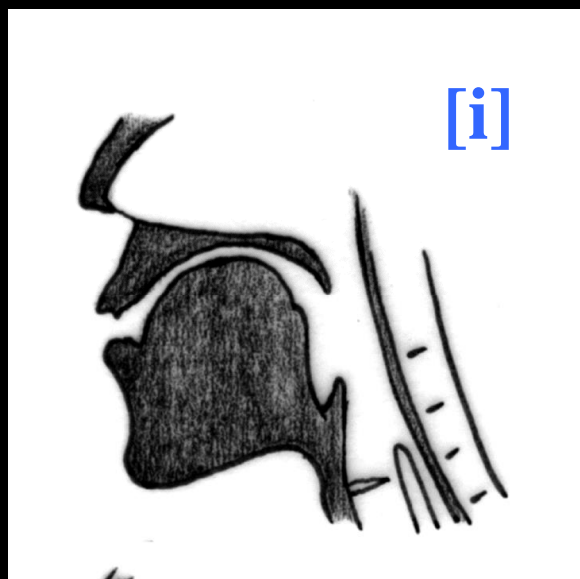
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*Notice how the vocal tract shape
changes for each Vowel!*

Shaping the Vocal Tract for Proper Resonance

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Note the difference in the vocal tract shape of the [i] vowel on the left and the [a] vowel on the right!

Shaping the Vocal Tract for Proper Resonance

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If the vowel is not correctly produced, not only will the *diction* be unclear, but the tone will not have the most beautiful *timbre*, because the necessary space to resonate the tone is not correct.

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is Power!

Shaping the Vocal Tract for Proper Resonance

Pronounce the following *tongue vowels*, feeling the arch of the tongue move from highest to lowest arch:

[i] [e] [ɪ] [ɛ] [æ]

(me may miss met mat)

Be sure the lower jaw is “free” and lips are slightly focused (*pouting*).

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Shaping the Vocal Tract for Proper Resonance

Pronounce the following *lip vowels*, feeling the lips move toward closure:

[ɑ] [ɔ] [ʊ] [o] [u]

(mop ought foot boat soon)

Be sure the lower jaw is “free” and the tongue remains relaxed in the mouth.

Card Buzzing Exercise

Find this card in your folder!

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“Resonance is Power” Vocal workshops

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Are ***YOU*** using enough breath pressure?

Card Buzzing Exercise

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1. Check your posture!
2. Take a diaphragmatic-costal breath!
3. Sing an [u] vowel – as played for you
4. Close your lips into a “pucker,” add more air so the tone comes very far forward, *buzzing* your lips.
5. Place the buzzing card vertically, allowing the thin edge to touch your lips, and repeat step # 4. **The card should buzz!**

Are ***YOU*** using enough breath pressure?

Singing Upside Down!

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Using appropriate breath pressure and forming the vowel correctly creates resonance!

1. Bend over forward from the waist, allowing your head to fall freely.
2. Using the [i] vowel, sing the exercise as played for you. Be sure your tongue is in the correct position for the [i] vowel.
3. Try the buzzing card again right side up!
4. Now try the [i] vowel again with the same feeling of “lift” you felt when upside down, and this greater amount of breath pressure.



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**Try Buzzing the Card on
a piece of music you are
currently working on.**



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**Vocalize your melodic line on [i]
while over “upside down.”**



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**Now, vocalize your melodic line on
[i] while standing right side up.**

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What should you feel?

1. Increased air pressure under the sternum
2. More *resonance* sensation in the upper cheek bone area
3. The sound moving more quickly out of your mouth
4. The sound is freer and much further forward in your mouth
5. More abdominal effort and less effort in the vocal folds!

Putting it all Together!

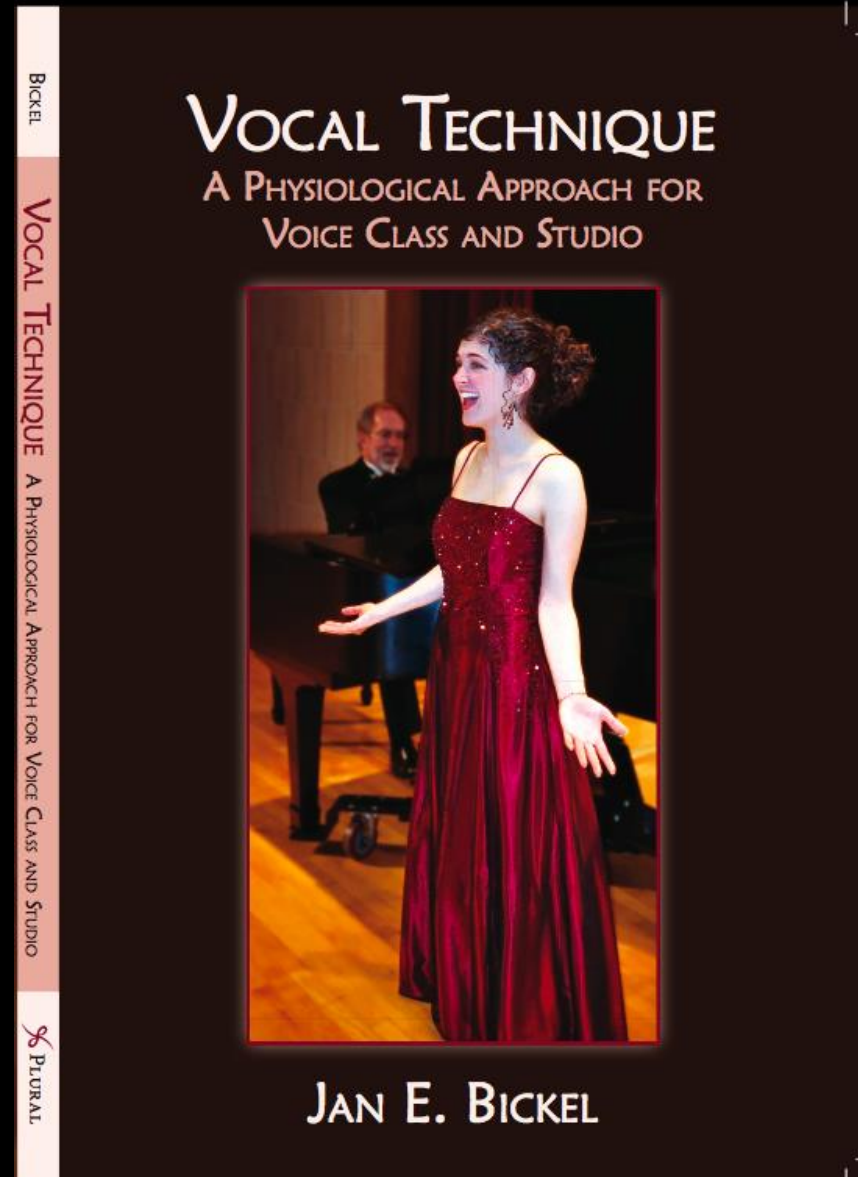
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1. Be sure Posture is correct!
2. Use *diaphragmatic-costal breathing* - Keep rib cage lifted and expanded as you sing!
3. Be sure jaw is free, lips are slightly focused forward, and tongue is in the correct position for each vowel.
4. Send air to the sternum so that air pressure remains there throughout the singing process.
5. Concentrate on sending the sound up through the vocal tract all the way to the *nasopharynx*, not just into the mouth cavity.
6. Use the *buzzing card* to be sure you are really focusing the sound with enough breath pressure!

Vocal Technique - A Physiologic Approach!

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Information presented here comes from this textbook – available from Plural Publishing, online book vendors, bookstores, & from Dr. Jan Bickel.



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Make it Work for You!

How much of this technique
can you apply during your
next rehearsal or practice
session!?

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