AIRFLOW FOR BRASS

BRASS TECHNIQUES
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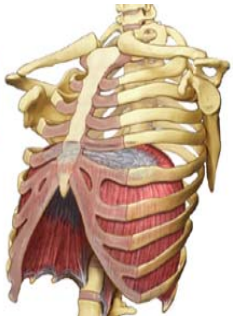
WIND→ VIBRATION→ SOUND

PROCESSES

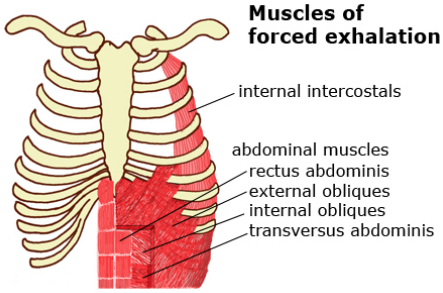
1. **Inspiration** — the process of taking in air.
2. **Expiration** — the process of blowing out air.
3. **Equilibrium** — for a moment, the breathing mechanism is balanced. It is not moving because the air pressure in the lungs is equal to the pressure of the atmosphere. During this state, the lungs contain a residual volume of air.

MOVEMENT

1. The Internal Intercostal Muscles or External Intercostal Muscles…
    a. are used in inhalation and exhalation
    b. are located between the ribs. The ribs are pulled upwards (closer together) during inhalation and pulled downwards (further apart) during exhalation.
    c. usually work involuntarily, but can be overridden.
2. The Diaphragm…



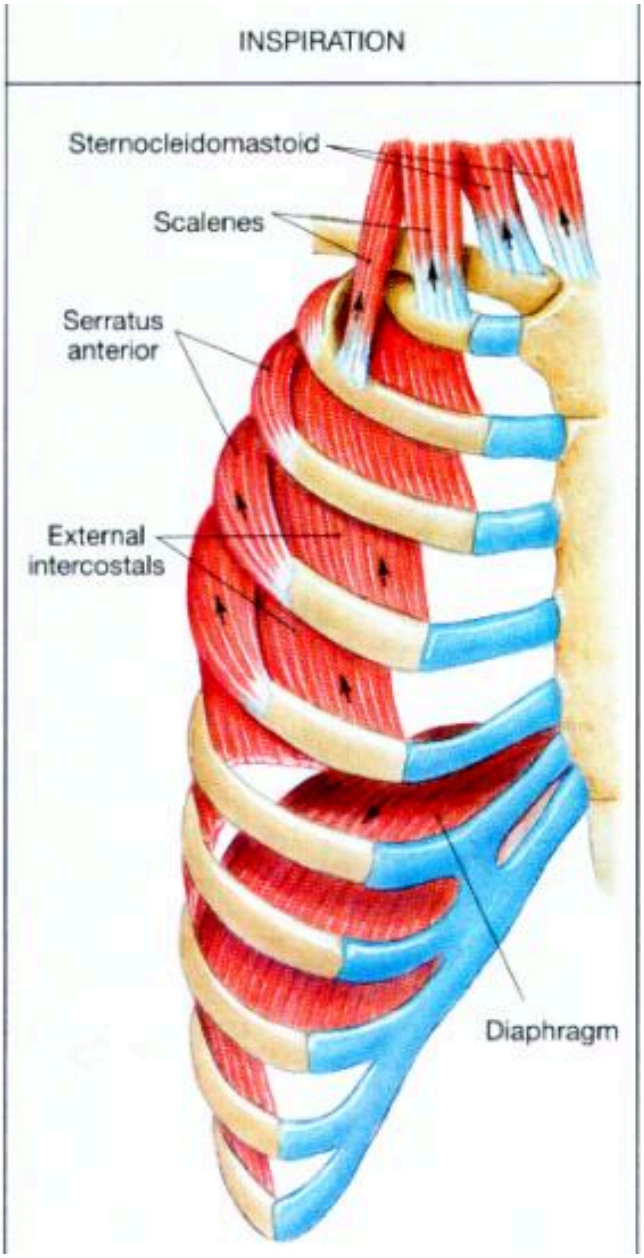
    a. is used in inhalation only
    b. is located below the lungs separating the thoracic cavity and the abdominal cavity.
    c. contracts to a lower position, pushing internal organs down.
    d. This membrane works in tandem with the intercostal muscle groups
    e. **MYTH:** Do not tell your students to “breathe with your diaphragm.” **No one can control the diaphragm** — I dare you to flex it! Just take a big, relaxed breath. The air has to come out, it will come out on its own with little guidance.
3. Abdominal Muscles
    a. are predominantly used in exhalation. Do NOT encourage young students to force exhalation.
        i. leads to tension
        ii. poor sound quality
        iii. poor phrasing



    b. Professionals are well trained to use the minimum amount of abdominal pressure as possible depending on how loud and/or how extended the passage is, and also the size of the mouthpiece bore.

MYTH: “Use more air” — This is a useless statement because it requires a qualifier. Ask yourself, *what kind of air is required for the task at hand?* “Use more air” can lead to five incorrect, uncontrolled results: **(1) Louder playing (2) Higher notes (3) Poor sound quality (4) Very sharp notes (5) An overblown aperture.**

INSPIRATION



In order for proper expansion to occur on inspiration, the body must be upright and relaxed — **there are four curves in the spine**. Not doing so will cause unwanted tension in the chest, neck, and embouchure. Tension is the brass player's worst enemy.

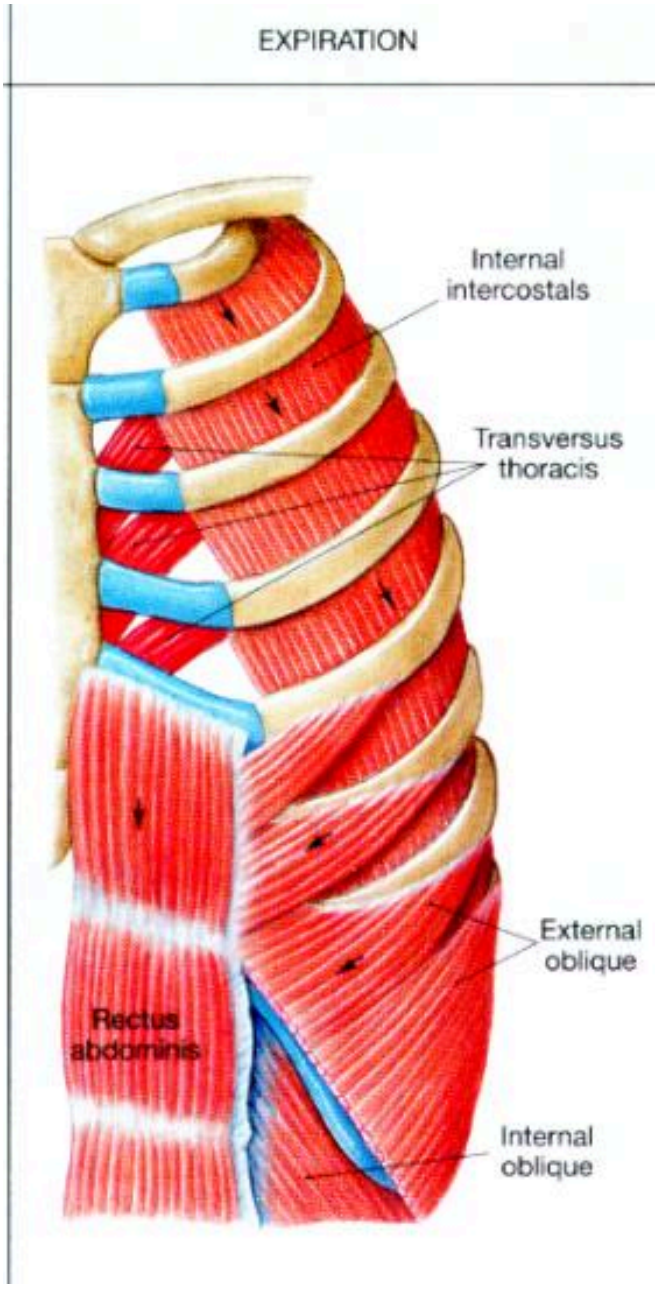
Nature abhors a vacuum. The vacuum created by removing air from the lungs results in negative air pressure within the chest cavity. This negative pressure can only be balanced with the atmospheric pressure surrounding the chest cavity by taking a breath.

Very little work is necessary to bring balance to the lungs. However, in order to fill the lungs to full capacity, the **external intercostal** muscles surrounding the thoracic cavity pull the ribs upwards and the diaphragm downwards — making the thoracic cavity larger. This additional negative pressure draws in a large amount of air.

Taking in a large breath results in a lot of natural body movement. (1) The shoulders will move. Recognize proper shoulder movement — up by the ears = bad. (2) The sternum will rise naturally and it is encouraged to do so! (3) The abdomen will press outwards due to the downward motion of the diaphragm.

NOTE: When these three things move — Shoulders, Chest, and Abdomen — it does not necessarily mean inexperienced players are taking in a proper breath. All three areas can be moved independently of the inhalation process and therefore should not be relied upon until the student has demonstrated a progressive understanding of inhalation. Use phrases like, **"Take a breath so deep that you make your kidneys move,"** or **"Expand your lower back on your intake."**

EXPIRATION



Controlled expiration is **the active motion of air that helps the aperture create a stable vibration** in the mouthpiece as directed by the player.

In order to create a free-flowing air column, the student must be relaxed and demonstrate a good, upright posture.

There are four components to the exhalation of air for wind players.

1. **Volume**: the quantity of air
2. **Speed**: the velocity of the air passed through the aperture
3. **Compression**: the force of air required for the moment asked.
4. **Control**: the command of the airstream at the aperture.

All four components are dependent upon each other. A professional is trained to use all four components when producing a tone and phrase.

It is not possible to achieve the desired outcome by negating one or more of these components.

Higher pitches require a smaller, faster, and colder airstream.

Lower pitches require a wider, slower, and warmer airstream.

LET THE ATMOSPHERE DO ITS JOB!!!!!!

IMMEDIATE TRANSFER OF AIR EXERCISES
HOW TOO

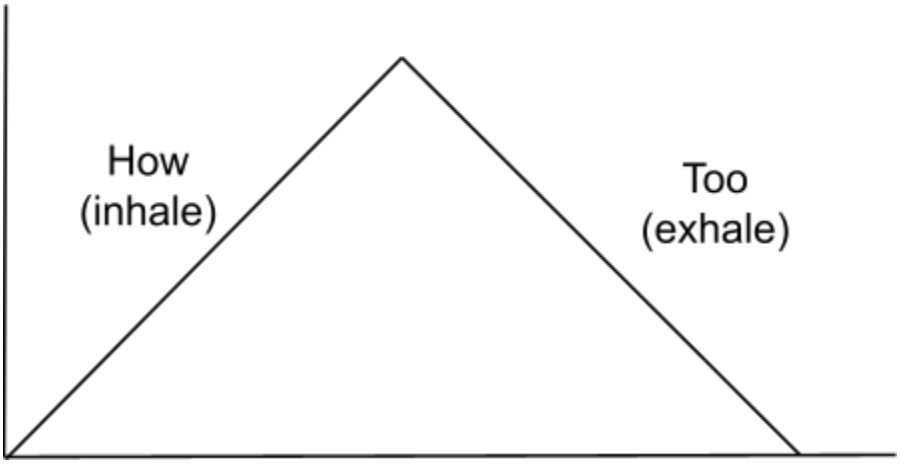
The “HOW TOO” Breathing Metaphor for Wind Musicians

Purpose:

- Helps students coordinate breath support, articulation, and sound production.
- Reduces tension caused by holding the breath before playing.
- Establishes a natural and efficient airflow for clean note starts.

Breakdown of the Technique:

1. **"HOW" - Inhalation:**
    - Mouth the word “HOW” during the inhalation phase.
    - Focus on the "H" sound at the start to encourage an open throat.
    - Emphasize the "OW" in the back of the mouth, helping:
        - Open the oral cavity.
        - Create space for a fuller, deeper breath.
    - The shape of "HOW" positions the mouth for the correct embouchure.
2. **"TOO" - Exhalation:**
    - Say “TOO” during the exhalation phase, immediately after completing the inhalation.
    - Focus on the "T" sound to engage the tongue in starting the articulation cleanly. Place your tongue in the correct position behind your top, front teeth as necessary by your instrument.
    - Use the "OO" vowel sound to promote steady and focused air support.
    - For larger wind instruments like tubas and euphoniums, use "TOH" to accommodate the lower pitch and broader sound.



Why It Works:

- **Prevents Breath Holding:**
    - Saying “HOW TOO” encourages a smooth transition between inhalation and exhalation.
    - Eliminates the awkward pause that can disrupt airflow and tension-free playing.
- **Supports Proper Articulation:**
    - "TOO" aligns with the action of the tongue when tonguing notes.
    - Encourages clean and precise note beginnings.
- **Facilitates Better Air Support:**
    - By focusing on “OO” or “OH” during exhalation, the air stream stays consistent and directed, essential for tone quality.

Tips for Young Musicians:

1. Practice Without the Instrument:
    - Use “HOW TOO” while miming the actions of playing.
    - Focus on a smooth, relaxed airflow and clean articulation.
2. Apply with the Instrument:
    - Once comfortable, incorporate “HOW TOO” into scales, long tones, and simple melodies.
    - Start at a slower tempo to ensure proper breathing technique.
3. Adjust for Instrument Type:
    - Higher-pitched instruments (e.g., flute, trumpet, clarinet): Focus on “TEA” to support faster, more focused air.
    - Lower-pitched instruments (e.g., tuba, bassoon): Use “TOH” for a broader air column and relaxed tone.
4. Avoid Tension:
    - Remind students to keep shoulders relaxed during “HOW.”
    - Encourage them to breathe deeply, avoiding shallow chest breaths.
5. Practice with a Metaphor:
    - Imagine blowing out a candle softly (“TOO”) or fogging a mirror (“TOH”) to visualize airflow.

Common Challenges and Solutions:

- Challenge: Students rush the exhale, resulting in a weak tone.
    - Solution: Slow down the “TOO” exhalation and aim for steady air pressure.
- Challenge: Breaths are too shallow.
    - Solution: Focus on expanding the ribs, belly, and lower back during “HOW” to engage the diaphragm fully.
- Challenge: Inconsistent articulation.

    - Solution: Practice “TOO” with isolated tonguing exercises (e.g., repeated notes or simple rhythms).
- Group Synchronization: Inconsistent group articulations.
    - Practice “HOW TOO” as an ensemble to unify breathing and articulation.

Encouragement for Students:

Learning to control your breath is a powerful tool that impacts every aspect of your playing. The “HOW TOO” technique provides an easy, memorable way to build habits that make your tone fuller, your articulation cleaner, and your playing more relaxed and enjoyable. Remember to practice with patience, and over time, breathing and articulation will become second nature!

BOXED BREATHING

Boxed Breathing (or Square Breathing) is an effective breathing technique often used for stress relief, relaxation, and improving focus. It involves equalizing the length of the inhale, hold, exhale, and hold phases of your breath. Here's how it works:

1. **Get Comfortable**:
    - Sit in a comfortable position with your sitz-bones engaged with the chair, shoulders above your hips and your head above your shoulders. Remember, sit upright, NOT up straight.
    - Place your feet flat on the ground and relax your hands on your lap.
    - Set your metronome to ♩= 72
    - Close your eyes or lower your gaze.
2. **Inhale (4 seconds)**:
    - Slowly inhale through your nose to a count of 4.
    - Focus on filling your lungs completely with air. Remember to expand your lower back.
3. **Hold (4 seconds)**:
    - Hold your breath for a count of 4.
    - Avoid straining; simply hold the breath naturally, **do NOT engage your epiglottis**.
4. **Exhale (4 seconds)**:
    - Exhale slowly and fully through your mouth to a count of 4.
    - Focus on releasing all the air from your lungs.
    - Expel ALL of the air, sizzle if you have to.
5. **Hold (4 seconds)**:
    - Hold your breath again for a count of 4 before starting the next inhale.
    - Remember, do NOT engage your epiglottis.
6. **Repeat**:
    - Continue the cycle for 3-5 minutes, or as needed to feel calm and centered.

    - This is a FANTASTIC exercise to get your ensemble to focus as a group.

Tips:

- Maintain a smooth and steady rhythm throughout the exercise.
- Adjust the duration of each phase (e.g., 3 or 5 seconds) if 4 seconds feels uncomfortable.
- Practice in a quiet environment to minimize distractions.

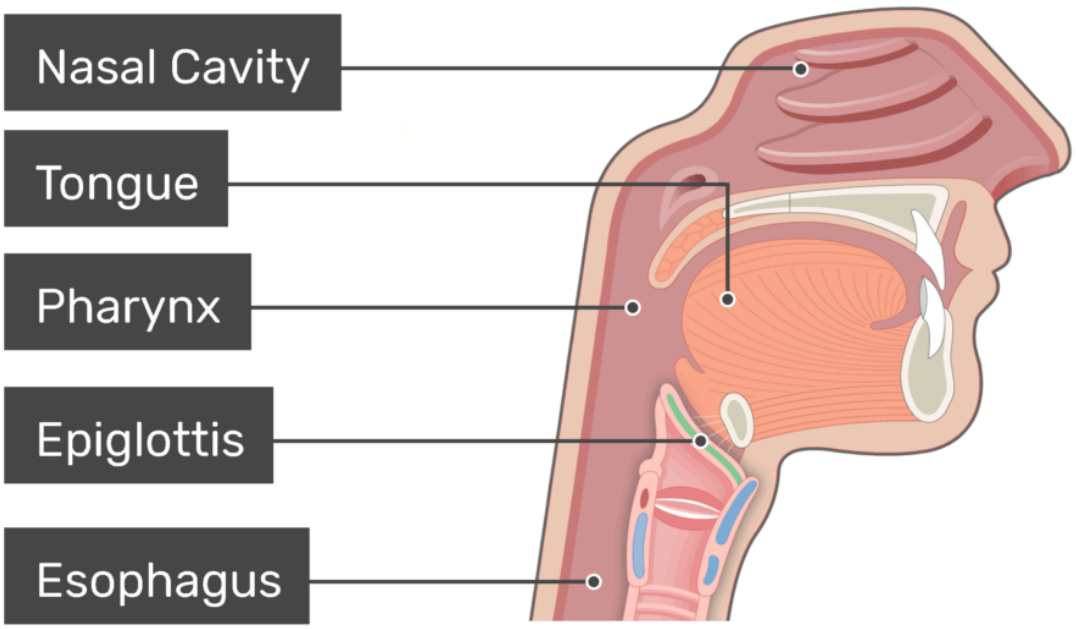
Benefits:

- **Stress Reduction**: Activates the parasympathetic nervous system, promoting relaxation — Hugs do this, too!!
- **Focus Improvement**: Enhances concentration by anchoring attention to the breath.
- **Emotional Regulation**: Helps manage anxiety and other strong emotions.
- **Improved Breathing Control**: Strengthens diaphragm function and supports better respiratory health.

This technique is often used by military personnel, athletes, musicians, and individuals in high-stress professions to stay calm and perform effectively under pressure!

THE GLOTTAL STOP — UH-OH!

The **epiglottis** is a vital structure in the human body that plays a key role in the respiratory and digestive systems, as well as in certain vocal and musical techniques.



- **Anatomy:** The epiglottis is a leaf-shaped flap of cartilage located at the entrance to the larynx (voice box) in the throat. It is attached to the thyroid cartilage and sits above the glottis, which houses the vocal cords.
- **Primary Function:** It acts as a protective mechanism, preventing food and liquid from entering the trachea (windpipe) during swallowing.

How the Epiglottis Works:

- **During Swallowing:**
  - When you swallow, the epiglottis folds down to cover the trachea, directing food and liquid into the esophagus.
  - This action protects the airway and prevents choking.
- **During Breathing:**
  - The epiglottis remains upright, allowing air to flow freely through the trachea and into the lungs.
- **When Holding Back Breath:**
  - The epiglottis can partially close to regulate airflow, maintaining internal pressure during breath-holding.
  - This is common for wind players or vocalists managing sustained tones or phrases.

- **Releasing the Epiglottis:**
    - **Exhale Forcefully:** A burst of air can force it open, which disrupts controlled playing or singing.
    - **Inhale Naturally:** This causes the epiglottis to lift automatically, restoring an open airway.
    - Musicians must practice controlled release to avoid unintentional airflow bursts.

Fun Fact: The epiglottis is part of the **vallecular space**, a small area where liquids or food can momentarily pool before being swallowed. This space also plays a role in creating certain vocal effects, like "growls" in contemporary singing.

Understanding and practicing control over the epiglottis is essential for musicians who rely on precise breath and airflow management. Through awareness and targeted exercises, one can harness the full potential of this critical structure.

WIND PATTERNS

Applying a **wind pattern to a simple tune** is an engaging and effective activity for teaching music students coordinated breathing, phrasing, and timing. The Breathing Gym version of this activity, as demonstrated by Patrick Sheridan and Sam Pilafian, uses **"*Ode to Joy*"** to provide a fun, accessible example. Below is a thorough explanation of how this exercise works.

Steps for Applying a Wind Pattern to "Ode to Joy":

1. **Understand the Wind Pattern Concept:**
    - A **wind pattern** is a physical representation of musical phrasing, using controlled breathing to mimic the articulation and airflow required to play the tune on an instrument or sing it.
    - The goal is to breathe rhythmically and in coordination with the phrasing of the melody.
2. **Set the Stage:**
    - Have students stand or sit in a relaxed position, with good posture to allow for deep, unrestricted breathing.
    - Explain the importance of consistent airflow, even phrasing, and matching breaths to musical intent.
3. **Learn the Melody:**
    - Ensure students are familiar with the tune of "Ode to Joy."
    - If needed, sing or play the melody on an instrument so they can internalize the phrasing. Doing this exercise along with the video is a great start.
4. **Introduce the Wind Pattern:**
    - Have students take a slow, controlled breath through their mouths and noses — percussionists, too!

    - Use the melody's phrasing as a guide for when to "blow" and when to "pause."
    - For each note in “Ode to Joy,” mimic the airflow required by blowing steadily and smoothly. Longer notes require extended breaths, while shorter notes need brief bursts of air.
5. **Practice with the Melody:**
    - Start slowly and gradually increase tempo as students become comfortable.
    - Encourage them to focus on even air pressure and maintaining good posture.
    - Emphasize phrasing: take "breathing breaks" where natural in the melody (e.g., after musical phrases or at rests).
6. **Add Dynamics and Articulation:**
    - Once students are confident, layer in dynamics (e.g., louder or softer airflow) to match the emotional shape of the melody.
    - Introduce articulation by mimicking tonguing or slurring patterns with subtle changes in airflow.

Benefits of Wind Pattern Practice:

- **Breathing Coordination:** Students learn to time their breathing to align with musical phrases.
- **Phrasing Awareness:** Enhances understanding of musical expression and phrasing.
- **Airflow Control:** Develops the ability to maintain consistent air pressure.
- **Group Synchronization:** Encourages ensemble unity by requiring students to breathe and "play" together.
- **Dynamic Control:** Builds awareness of dynamics and how they shape the musical line.

Additional Tips for Success:

- Use a metronome to help maintain a steady tempo during practice.
- Encourage students to listen to each other and match their airflow dynamics.
- Incorporate this exercise into warm-ups for ensemble classes.
- Discuss how this practice translates directly to their instrument or vocal technique.

This activity combines breathing technique, musical phrasing, and teamwork into a single, fun exercise. Patrick Sheridan and Sam Pilafian’s method is an excellent way to engage students while teaching foundational breathing and phrasing skills!

INS & OUTS

Breathing "**in for 4 and out for 4**" is a simple, rhythmic breathing technique often used to calm the mind, reduce stress, and regulate emotions. It involves inhaling for a count of 4 and exhaling

for the same duration, creating a balanced and steady breathing pattern. The count can be changed to 2, 4, 8, and 16.

1. **Find a Comfortable Position:**
    - Stand, sit, or lie down in a relaxed position. Keep the shoulders above the hips and the head above the shoulders. Remember, sit upright, NOT up straight.
    - Rest your hands in your lap or at your sides, and ensure your shoulders are relaxed.
2. **Prepare Your Mind:**
    - Set your metronome to ♩= 72
    - Close your eyes or focus on a fixed point.
    - Take a moment to tune into your body and acknowledge your current state.
3. **Inhale for 4 Seconds:**
    - Breathe in slowly and deeply through both your mouth and nose for a count of 4.
    - Focus on filling your lungs completely, expanding your chest, abdomen, and lower back.
4. **Exhale for 4 Seconds:**
    - Immediately, and slowly release the breath through your mouth for a count of 4.
        i. **Do NOT hold your breath — Do NOT engage your epiglottis**
    - Focus on fully emptying your lungs, ensuring the exhale matches the length of the inhale.
5. **Repeat the Cycle:**
    - Continue the pattern of inhaling for 4 seconds and exhaling for 4 seconds.
    - Practice this for 2 minutes, or longer if desired.
    - Change the metronome marking to a faster tempo if you wish to work on speedy air exchanges.

Tips for Effective Practice:

- Use a calm and steady pace for counting; don't rush.
- Keep your breathing smooth and controlled, avoiding jerky or shallow breaths.
- Place one hand on your chest and one on your abdomen to feel the movement and encourage diaphragmatic (belly) breathing.
- Fully expand your lower back at the end of the inhale.

Modifications:

- For Beginners: Start with shorter counts, such as 3 or 2, if 4 feels challenging.
- For Advanced Practice: Gradually extend the counts to 8 or 12 as your capacity improves.

Benefits:

- Stress Relief: Activates the parasympathetic nervous system, helping to lower heart rate and calm the body.
- Enhanced Focus: Anchoring your mind to the count helps reduce distractions and fosters mindfulness.
- Improved Breathing Efficiency: Promotes deeper, more controlled breaths, increasing oxygen delivery to the body.
- Anxiety Reduction: Rhythmic breathing patterns have been shown to soothe the nervous system and manage feelings of anxiety.

When to Use:

- During moments of stress or overwhelm to regain composure.
- In every rehearsal or classroom meeting with your students. This can be accomplished by students of any age.
- As part of a meditation or mindfulness practice.
- Before bedtime to unwind and prepare for restful sleep.
- During breaks in a busy day to reset and refocus.

This technique is versatile and easy to implement anywhere, making it a go-to tool for managing stress, focusing, and staying grounded.

Sometimes, you just need to get your student's air moving.

Video: Breathing Gym Examples

Video: Diaphragm — Definition, Function, Muscle & Anatomy

Article: The Mammalian Respiratory System