Basic Anatomy for Musicians:
Addressing Breathing and Posture from the Podium

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Tension

- **Goal:** minimize tension
- Tension radiates to other areas
  - Physical and Mental
- Tension is caused by using the body in an inefficient way
- We do need some level of *physical involvement* in three key areas
  - Breathing
  - Posture/Support
  - Embouchure
- **BUT:** there needs to be as little *tension* as possible
Breathing

Sound is the most important fundamental of playing any instrument or singing

Air creates vibration, vibration creates sound = fundamental

What affects breathing:

Tension
Fear
Poor Posture
Shallow breaths
Breathing: The Science Behind It

- Diaphragm is the muscle most responsible for breathing
  - 80% of breathing work done by this muscle

- Breathing occurs when diaphragm contracts and pulls down
  - **Belly Breathing**
    - Diaphragm pushes downward into the abdomen
    - Fills more air sacs in the lungs - more air to utilize

- We use accessory muscles to allow maximum air intake
  - External intercostals- lift the rib cage up and outward
Breathing: The Science Behind It

- **Muscles can only pull the can never push**
- **We have other muscles that will help force the air out**
  - These muscles squeeze the rib cage down and push the diaphragm back up forcefully
    - These muscles are the internal intercostals and **abdominal muscles**
  - **Control over these “core” muscles will allow us to exhale with force**
Breathing: Inhalation

- **Language to Discuss Breathing** (force/velocity - can be measured)
  - Inhalation
    - Diaphragm breathing
      - *Note: The diaphragm is involuntary in that breathing happens without conscious control (like blinking & swallowing) - but it CAN be consciously controlled - holding your breath - (also like blinking & swallowing)*
      - Feel back & sides
    - Breathe low
    - Open throat
      - Yawning
      - Nose breath
Breathing: Exhalation

- **Language to Discuss Breathing** (force/velocity - can be measured)
  - Exhalation
    - Fast (cold) vs slow (warm) air
      - Brass
      - Woodwinds
    - Open throat - maintain this from inhalation
    - Consistency - steadiness - sustain
      - Tuba Lips/Lip Trills
      - Flow Studies
Breathing

Teaching Strategies

- Nose breath - Keeps shoulders down (mouth can causes shoulders to rise)
- Feel back & sides
- Open throat - yawning
- Breathing exercises, Flow Studies
  - Play it on airstream
  - Sound of the breath
    - High pitched - Shallow/Tense
    - Low pitched - Deep/Relaxed
- Lying down normally gives you low breathing
- When seated, pick feet up & hold legs parallel to floor
  - engages the abs for inhalation & exhalation

Diagnosing

- Shoulders raising with breaths
- Chest breathing
- Shallow breathing
- Tension
- Fear / anxiety
Posture

Why is posture important?

- Optimal position = optimal body health, free breathing, optimal musical sounds
- Poor Posture = pain/injury, more difficult to breath freely which leads to poor sound
- Posture affects:
  - Tone
  - Dynamics
  - Articulation
  - Technique
- Keeps body healthy and efficient

The body is good at compensating for poor posture!

It’s hard to fix once it’s become a habit, so this needs to be addressed early & often!
Posture: The Science Behind It

- Proper posture consists of supporting the body along the axis
- Sit on the ischium
  - The “sit down” bone
- Leaning will make very small muscles work hard to maintain bad posture
Posture: The Science Behind It

- Remember: Muscles are straight tissues and work best when aligned
- Abs play a major role in keeping the body straight in the front
- Erector spinae group pulls the other direction from the back
- You want a balance between your back and abs
Posture: The Science Behind It

- Remember to always use the largest muscle for the job
- Use these big muscles to support your instrument
- Roll your weight back and support the weight on your shoulders and Trapezius
- Leaning forward to support the instrument puts stress on areas of the body like the wrists
- Make sure your deltoids (shoulder muscles) don’t raise up, you want them rolled back
Posture: Tips

- Maintain natural skeletal alignment
  - Distribute weight evenly
  - Shoulders relaxed down the back
  - “C” hands & straight wrists
- Keep as relaxed as possible
  - Use large muscles to support instrument
  - Shoulders down and back, Arms - natural, Relaxed neck
  - Balanced weight
- Yoga, Alexander Technique, & body mapping
  - focus on body alignment and physical efficiency
Posture: Diagnosing

- Hunched shoulders
- Slouching
- “Good girl” posture
- Bending
- Twisting (body or neck)
- Tilted head
- Reaching for the horn
- Crossing the legs
- Resting the instrument on the lap or holding between the legs
Posture: Teaching Strategies

- Imagine string pulling upward from the crown of your head
- Jump! - how you land is most stable
- Use a cue word or gesture
Embouchure

- Air creates vibration and vibration creates sound
- Vibrations are essential for creating sound
  - Relaxed muscles allow for more vibration
Embouchure: The Science Behind It

- Tense muscles make it hard for blood to reach them. You need blood to deliver oxygen!
- The small muscles in the face will tire quickly
- When the muscles of the jaw completely relax the mouth with naturally open slightly
Embouchure: The Science Behind It

- The “yawning” throat opening
- Muscles that control the throat are hard to consciously control
- Try tapping into natural instincts like yawning and swallowing
- Muscles called constrictors wrap around the throat
- Try focusing on the base of the tongue and top of the throat
- This “yawning” position of the muscles maximizes air flow into the throat
  - Similar to yawning or swallowing
Embouchure: Woodwinds

- Jaw vs. lips
  - There's some *muscular involvement* around the lips
  - Jaw & throat remain relaxed
- Awareness & strengthening of lip muscles
  - Milkshake / smoothie
  - Whistle
  - Devices: Facial Flex, Wind-O
Embouchure: Brass

- **Brass** - Relaxed for vibrations - firm up to hold embouchure in place
  - Tuba Lips
  - Blowing through the back of the mouthpiece (relaxing the corners)
  - "Es with ease"
  - Tighter doesn’t necessarily mean higher
    - Air speed and direction
      - Air = bow
      - Placement of the buzz
Questions?

We have answers!