



Better Fundamentals Through Body Mapping

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Better Fundamentals Through Body Mapping

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What are body maps?

The body map is one's self-representation in one's own brain. If the body map is accurate, movement is good. If the body map is inaccurate or inadequate, movement is inefficient and injury-producing. In Body Mapping, one learns to gain access to one's own body map through self-observation and self-inquiry. The student carefully corrects his or her own body map by assimilating accurate information provided by kinesthetic experience, the use of a mirror, anatomical models, books, pictures, and teachers. One learns to recognize the source of inefficient or harmful movement and how to replace it with movement that is efficient, elegant, direct, and powerful based on the truth about one's structure, function, and size.

What is Body Mapping?

Body Mapping is the conscious correcting and refining of one's body map to produce efficient, coordinated, effective movement. Body Mapping, over time, with application, allows any musician to play like a natural. It is a tool that is useful in many different settings from music studios to exercise studios and to all of the somatic disciplines such as those mentioned below. Body Mapping not only helps musicians avoid injury; it also enhances musicians' technique. The practical application of Body Mapping to music making was developed by William Conable, professor of cello at the Ohio State University School of Music. He observed that students move according to how they think they're structured rather than according to how they are actually structured. When the students' movement in playing becomes based on the students' direct perception of their actual structure, it becomes efficient, expressive, and appropriate for making music. Conable's observations are currently being confirmed by discoveries in neurophysiology concerning the locations, functions, and coordination of body maps in movement.

Who Are Andover Educators?

Andover Educators train musicians and music educators to accurately support and enhance movement in practice and performance with the goal of increasing ease while reducing and eliminating injury through Body Mapping. Andover Educators teach in colleges, universities, conservatories, and private studios throughout the world and offer professional development workshops for musicians and music educators. All Andover Educators are musicians dedicated to helping other musicians and understand the struggles, both physical and mental, that musicians face in their careers. It is the hope of Andover Educators that this method of teaching will encourage wellness and enhanced performance among musicians.

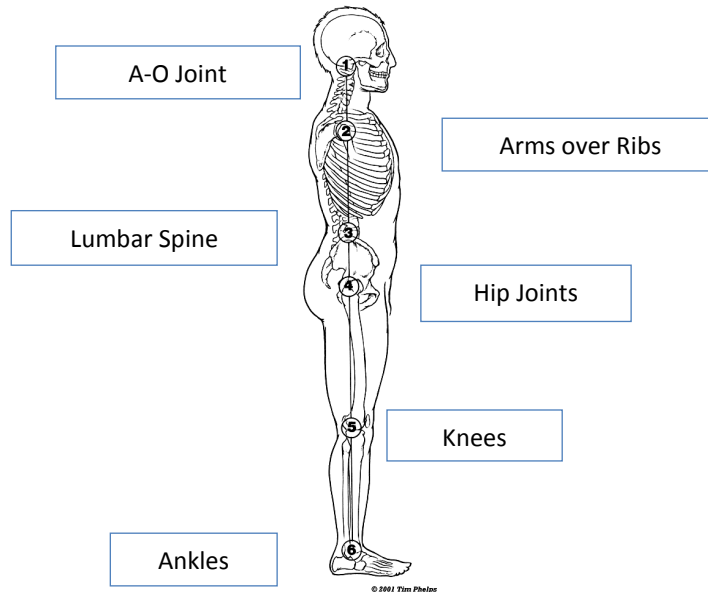
What is Alexander Technique?

Alexander Technique teaches people to understand the ways they are interfering with their natural coordination. It then teaches them how to stop that interfering. Alexander called this inhibition. Over a course of lessons, students acquire skills they can use anytime and anywhere, to improve how they do any activity. Clear and consistent practice of the Technique, either alone or with a teacher, enables individuals: to observe more keenly how they are doing any activity; to decide if they want to change how they are doing the activity; to decide in what way they want to change, and to consciously direct themselves in this new way.

What We Gain by Studying Somatic s (study of movement)

Playing an instrument is a whole body experience; it requires balance, awareness and ease. In Body Mapping and Alexander technique we learn to identify what muscular effort is required in playing or singing and we learn to quiet extraneous effort.

Body Mapping's Six Points of Balance



This head is not balanced but notice all of the muscles in the neck! What do they connect to?

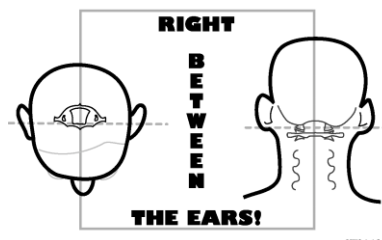
Importance of Head Balance

If your head is off balance your body will try to counterbalance. It will create unnecessary tension in other parts of your body as you try to compensate for being off balance. Two of the most important things that will be affected are breathing and arm mobility which will affect tone and technique in instrumental playing.

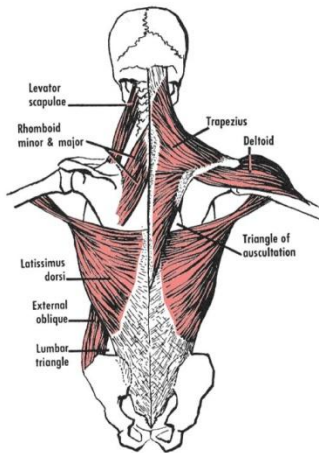


AO Joint

The AO Joint (Atlanto-Occipital Joint) is where the base of the skull meets the top of the spine.



Superficial Back Muscles



The superficial back muscles are the ones closest to the skin. They include the trapezius, latissimus dorsi, rhomboid major, rhomboid minor, and levator scapulae.

Superficial back muscles are arm moving muscles. When you tell a student to stand up straight or to lift their ribs they are using superficial back muscles to make those movements. In reality we use deep postural muscles to stand upright. It is a natural occurrence. We don't have to do anything to make it happen we just have to not interfere with it! When we misuse our superficial back muscles to do postural work we interfere with the quality of our breathing and the fluid movement of our arms and hands.

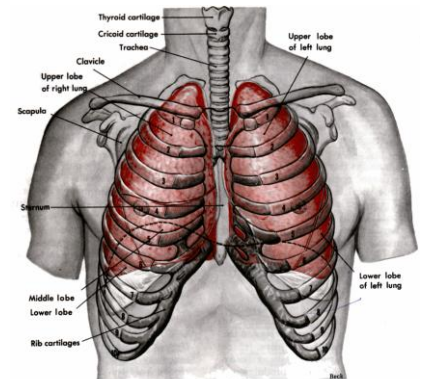
Movement of Breathing

Diaphragm: A thin, dome shaped muscle that aids in respiration. The diaphragm separates the chest cavity from the abdominal cavity.

Intercostal Muscles: Muscles between the ribs that help form the chest wall. The intercostal muscles' main function is to aid in breathing by increasing/decreasing the size of the chest cavity.

Mapping the movement of breathing:

- The diaphragm is always, completely inside the chest cavity.
- The lungs begin above the collar bone and extend to the bottom of the sternum. They are a bit longer on the sides but still fit behind the protection of the ribs.
- Your lungs are 3 dimensional. They extend from the front of your chest cavity to the back.
- Your top rib is above your collar bone, because there is lung there!!



Projection of the lungs and trachea in relation to the rib cage and clavicles. Dotted line indicates location of the dome-shaped diaphragm at the end of expiration and before inspiration. Note that apex of each lung projects above the clavicle. Ribs 11 and 12 are not visible in this view.

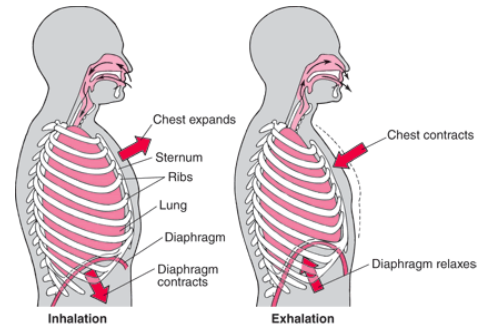
Facts about breathing:

- When the diaphragm contracts:
 - it pushes out the lowest ribs and creates a bigger space inside the chest cavity.
 - it pushes down on the viscera (guts) and they are displaced three dimensionally.
 - it pushes the viscera against the pelvic floor causing descent of the pelvic floor.
- The intercostal muscles aid in the movement of the ribs which increases the space inside the chest cavity.
- The intercostals are responsible for about 25% of the muscular work of breathing. The diaphragm accounts for the other 75%.
- **All of your ribs move when you breathe**, including the top ones!
- As the space inside the thoracic cavity increases it creates negative pressure in the lungs which causes us to inhale.

- Muscular effort is on the inhale. Exhalation is a release. The diaphragm floats back up, the ribs descend, and the pelvic floor rebounds.
- One can choose to use extra muscular effort on the exhale by engaging abdominal muscles and increasing the descent of the ribs but **it is not required**.
- **If your head is off balance and your neck is tight, it will limit the mobility of the upper ribs and restrict breathing.**

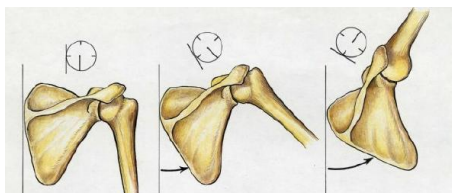
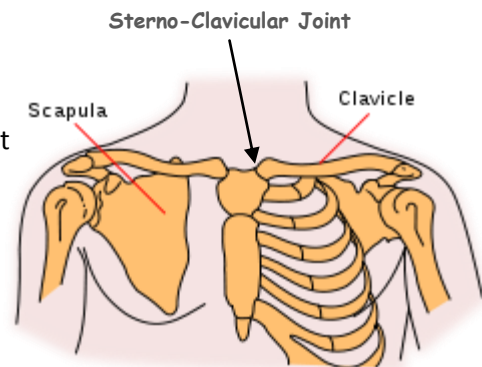
Refining our breathing map:

- No air goes into our abdominal or pelvic cavity in breathing.
- The diaphragm is horizontal. It is not to be confused with the abdominal muscles.
- You can not feel the movement of your diaphragm but you can feel its effects.
- When we talk about the movement of the ribs it is the movement of the individual ribs. They are jointed at the spine and are as individual as fingers but not as independent.
- Moving your rib cage as a whole is a spinal movement.
- You don't need to lift your ribs to breathe better. Instead, don't pull them down!
- The arms float about the ribs and the ribs move like bellows.



Arm Structure

Sterno-Clavicular Joint: This is the only joint the arm structure makes with the rest of the torso. Muscles don't act on this joint but all movements of the shoulder girdle and shoulder blade will cause some movement at this joint. Movement at the SC joint is important for flutists, trombonists, percussionists, and color guard to name a few.



Scapulo-Humeral Rhythm: Movement of the humerus (upper arm bone) with the movement of the scapula (shoulder blade). When the arm reaches forward the scapula (shoulder blade) must move soon enough and far enough. This is also important for trombonists and color guard!

Facts about the arm

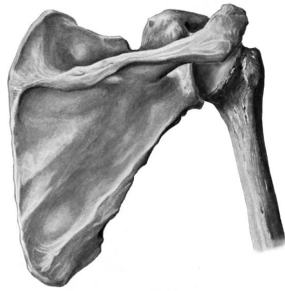
- The arm includes in its structure: a hand, a wrist, two lower arm bones, an upper arm bone, a shoulder blade and a collar bone.
- If you use superficial back muscles to hold yourself up (sit up straight or lift ribs) you will restrict arm movement.
- If your head is off balance and your neck is tight, it will limit the mobility of the collar bone and shoulder blade and will restrict the movement of the arms.

- If your arms are tight or squeezing they will restrict the movement of your ribs which will negatively impact your breathing.

Refining our arm structure map

- Arms are suspended from muscles in the neck. They do not rest on the ribs.
- The upper arm bone makes a ball and socket joint with the side of the shoulder blade. There is a wide range of motion available at that joint because of the shape of the joint.

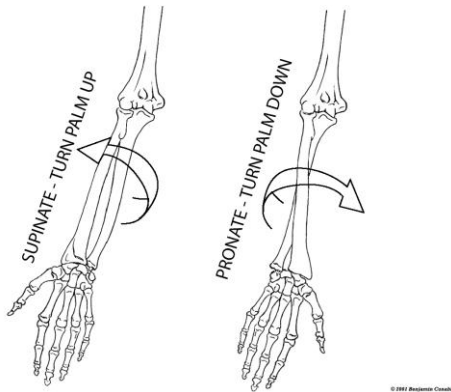
Right Arm/Shoulder Blade
Back View



Right Arm/Shoulder Blade
Side View



- There is no palm bone! We are finger all the way back to the wrist.
- Rotation of the arm happens at the elbow, not the wrist.



Recommended Readings

Anatomy of Breathing by Bandine Calais-Germain, Eastland Press, Inc. 2006

Body Mapping for Flutists: What Every Flute Teacher Needs to Know About the Body by Lea Pearson, GIA Publications 2006

How to Learn the Alexander Technique by Barbara Conable, GIA Publications, 2004

Structure and Movement of Breathing by Barbara Conable, GIA Publications, 2000

What Every Musician Needs to Know About the Body by Barbara Conable, GIA Publications, 2004

What Every Trombonist Needs to Know About the Body by David Vining, Mountain Peak Music, 2010