

The Right Trap as It Applies to Assisted Right Trunk Rotation

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Both the right and left lower traps assist in spinal stabilization and trunk rotation per their attachment sites from the lower portion of the medial scapulae on each side to their lowest attachments located on the spinous process of T-12 bilaterally. Remember that muscles left and right side of the body are either biased or deficient in their own unique directional plane given the particular pattern they are positioned in. These positions are primarily driven by our asymmetrical anatomy, respiration and guidance by neurologic patterns.

For contrast and comparison, let's start first with the left lower trap in the L AIC/R BC pattern that has a more biased "attitude" and influence assisting mid to lower right thoracic/lumbar spine rotation that follows right pelvic/sacrum orientation. This right orientation of the pelvis/ sacrum is mainly driven by the dominate position of the right diaphragm, right adductor, left psoas and patterns of breathing into the chambers of the chest wall.

The left trap is typically positioned to contract at the spinous process as it helps or assists to position or turn the lower spine to the right at T 12. In doing so, it helps to reinforce the L AIC pattern of the lower spine. As this occurs, normal compensatory rotation of the trunk, especially above T-8, turns the thorax to the left. This normal compensatory rotation is driven by a more externally driven left ribcage due to airflow especially in chest wall chambers 6 and 8 (*see figure at the end of this document*). These chambers are more hyper-inflated than the right ribcage. Internal chest wall pressure driven by patterns of respiration results in the ribs on the left side going up or into external rotation more easily than the right. This relative state of hyper-inflation that is part of the L AIC/R BC pattern is the main driver of left trunk rotation and is the respiratory component driving ribs into ER on the left. When ribs are positioned in ER via respiration then the axial spine will rotate in the ipsilateral direction of those ribs resulting in left trunk rotation above T-8 on a right oriented pelvis and sacrum.

The left trap scapular attachment is in position to draw the scapula towards the spine and externally rotate it on an externally rotated, hyper-inflated ribcage on the left. Imagine both attachments of the left trap on the spinous process of T 12 and left scapula pulling towards each other. There is a strong transverse plane influence on T 12 essentially assisting in turning or rotating the lower spine to the right on top of a right oriented pelvis/ sacrum as the left scapula is simultaneously externally rotating on the thorax above and helping to further pull and open the upper ribcage into more left

trunk rotation while assisting in more apical chest wall expansion on the left in the R BC pattern. Remember, the lower traps assist and stabilize the spine like reins on a horse but it is respiration and the ability to direct airflow into chambers of the thorax that is primarily responsible for thoracic position.

Now for your question on right trap assisting trunk rotation to the right. Just know that the right lower trap at the scapular attachment site will assist in right trunk rotation only if ribs on the left can anchor into IR on a left oriented pelvis to create a left ZOA. The right trap has to be put into position by airflow and pressure into the right chest wall. Only then will it have the potential to be effective in assisting right trunk rotation. The ribs on the right will then be given the potential as well to inflate fully if a strong anchor on the left oriented pelvis/sacrum is established. Once a pelvis is oriented to the left and can stay there long enough to establish a new pattern and position, inhalation pressure will provide right external respiratory rib rotation resulting in right apical expansion. The R BC needs to be inhibited to allow for right apical expansion or the right lower trap at either end of its attachment points will not be in a position to assist in right trunk rotation.

We focus strongly on the right trap and tricep in our treatment guidelines for assisting right trunk rotation and the key word here is that assisting only works if there is “air” in a right apical chest wall creating the pressure from inside out to push ribs up or ER into chambers 1 and 3. Respiration is the primary focus for chest wall expansion resulting in dynamic airflow that alternates and reciprocates allowing the ability to laterally shift side to side and rotate a thorax left and right through a transition called neutral. Training a new sense awareness is key to realize both sides of our body.

When right apical chest wall expansion and inhibition occurs via facilitation of the R AIC and L BC, position is provided for the right lower trap at its T 12 spinous process attachment to assist in turning a spine to the left on top of a newly established left pelvic/sacrum orientation. This pelvic/sacrum R AIC orientation to the left provides the position for the right trap to assist in not only left spinal rotation at T 12, but then as both attachment sites pull towards each other, the right scapula will externally rotate, retract from a protracted state, move towards the spine and assist in right trunk rotation as it helps to position the thorax further into right trunk rotation. Again, the ability to turn a thorax to the right on a left oriented pelvis/sacrum starts with respiratory external rotation pressure of the right ribcage driven by airflow. Then the right lower trap is positioned, after respiratory right thoracic rotation is initiated to provide more leverage to assist in pulling the right thorax further into right trunk rotation via a scapula moving over a thorax. This is also known as scapula/thoracic movement or ST

movement. As the scapula is being repositioned by the right trap at its scapular attachment moving over the ribcage towards the spine, it pulls the torso further into right thoracic rotation as the right apical chest wall is becoming more open for airflow expansion with every properly positioned full inhalation starting with a full exhalation and pause. The vector of the ST movement and position of the right scapula via its directional pull on the right pectoralis minor at the coracoid process attachment site lengthens the pec minor eccentrically thereby assisting it into more lifting and opening of right apical chest wall expansion. This occurs via lifting ribs 3, 4 and 5 at the costal pec minor attachment sites. Airflow underneath the right chest wall expands the ribs into ER to open and rotate the thorax further to the right. Remember that a full breath in is only “legal” if position while breathing is strictly maintained.

It bears repeating that the L ZOA component parts of maintaining a left oriented pelvis as an anchor is the critical first step. Once established, directing airflow sense and pressure into the right apical chest wall with concomitant right rib ER expansion upon inhalation can occur. Right axial spine rotation above T-8 along with left posterior mediastinum expansion sense becomes not only possible but is critical since without these sequential positional events any attempt to utilize the right trap to assist right respiratory trunk rotation will be patho-compensatory and any attempt to inhibit the L AIC/R BC will be ineffective.

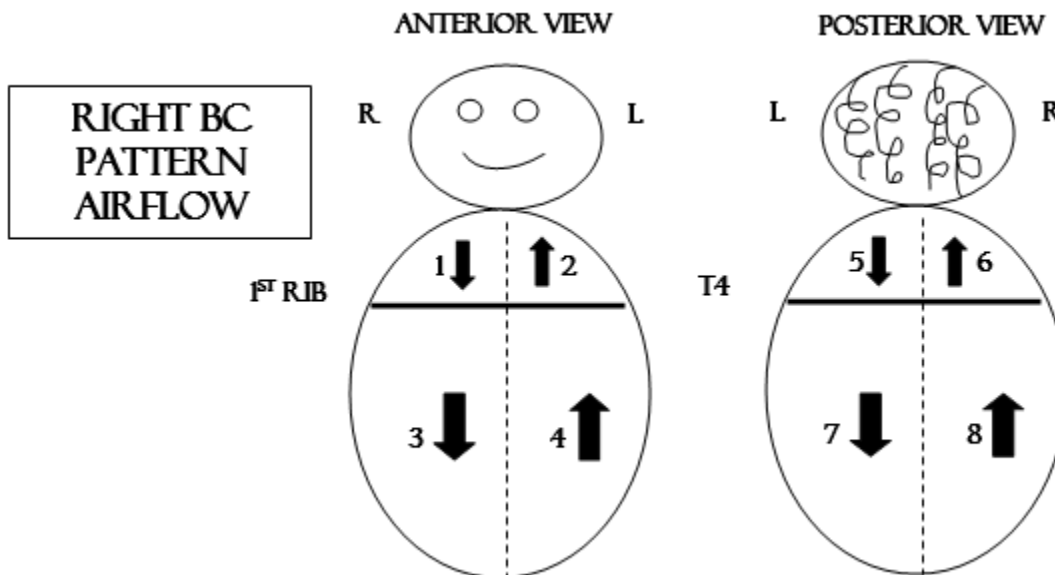


Figure from page 50 of the Postural Respiration course manual.
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