

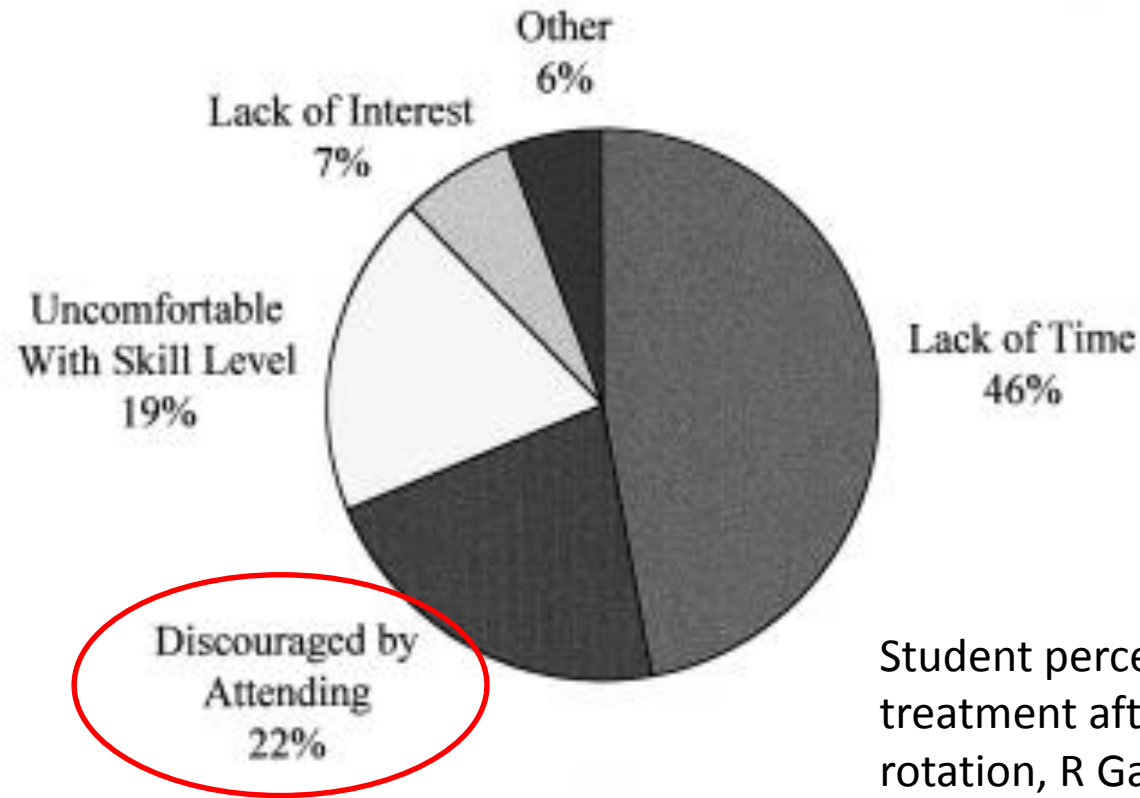
OMM Considerations in the Behavioral Health Patient CME Module



Why Are We Doing This Faculty Development?

- Fewer students are doing Osteopathic Manipulative Treatment (OMT) on their rotations
 - There is a declining use of OMT by DOs in the hospital and clinic settings
 - Increasing numbers of preceptors are MDs
 - No formal training in OMT
 - The more knowledgeable preceptors are, the more comfortable they are with allowing students to use OMT on their patients

Student Perceptions of Why Osteopathic Manipulative Treatment Was Not Used



Student perceptions of osteopathic manipulative treatment after completing a manipulative medicine rotation, R Gamber et al., JAOA, 2001

Goals of This Faculty Development Training Module

- To increase preceptors' knowledge of Osteopathic Principles and Practices (OPP)
- **To increase opportunities for students to think osteopathically and perform OMT on their rotations**


Program Objectives

- Encourage questioning of students on how they would approach specific patient populations osteopathically
- Increase comfort levels with OMT by knowing what it is and what the techniques look like
- Facilitate encouragement of students to do OMT

The Osteopathic Approach

- We teach students to approach a patient *osteopathically*, which means you look at the patient's disease process, the pathology and the physiology, and think about how you can affect them by applying osteopathic techniques
- There are a number of musculoskeletal inputs to systemic disease and for a given pathology in a given patient you need to figure out what percentage is coming from the musculoskeletal system. In a patient where the musculoskeletal input is significant, even very benign manipulative techniques can be very beneficial.

CME Module Content

- The most difficult part is choosing which techniques to do on a particular patient
 - Our students spend two years learning osteopathic approaches as well as the techniques
 - We have selected specific common clinical presentations and techniques that are particularly relevant to those disease processes
 - These are simple, very non-invasive techniques that are very safe and effective
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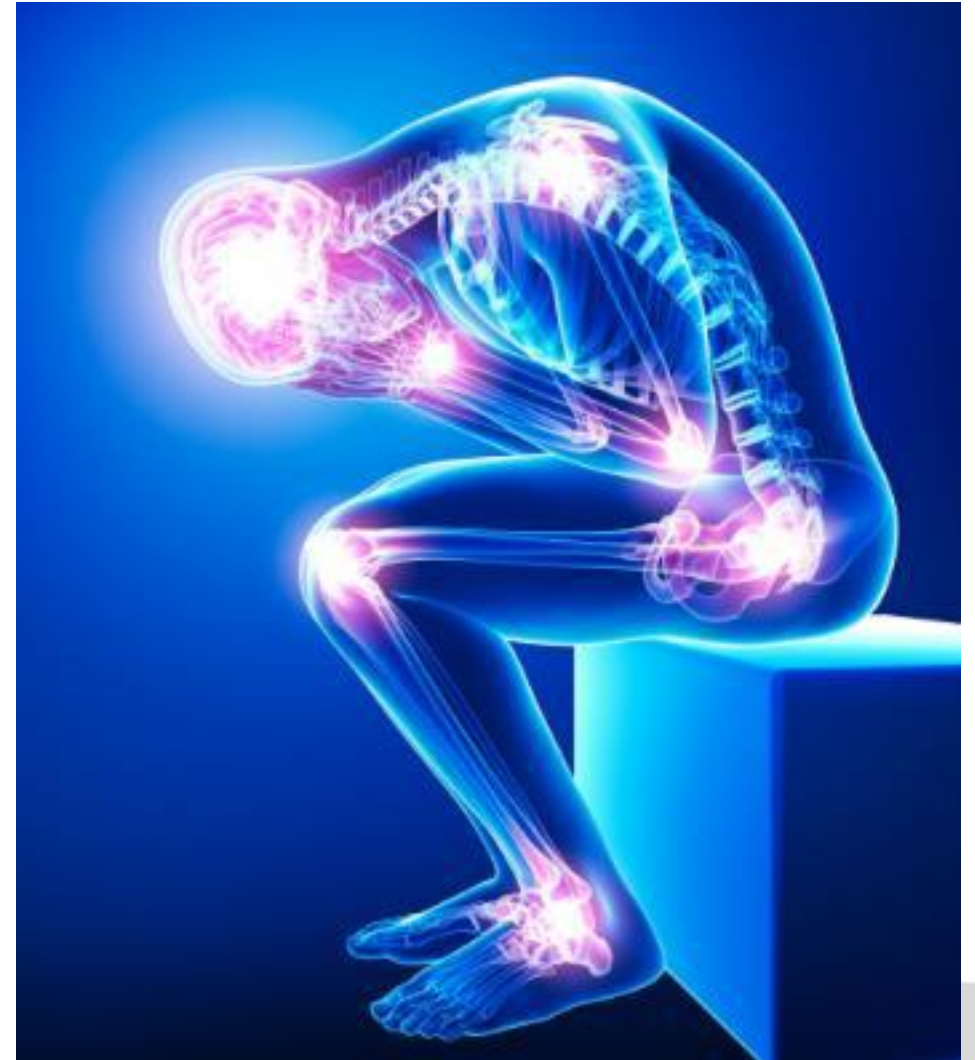
Student Objectives

- Students will be able to propose and perform, if allowed, appropriate osteopathic techniques for treatment.
- Students will demonstrate how to address an exhalation ribcage dysfunction in the depressed patient by treating: (a) an increased thoracic kyphosis, (b) a depressed sternum, and (c) the head-forward posture.
- Students will demonstrate how to diagnose and treat hypertonic scalene muscles in the patient with anxiety.

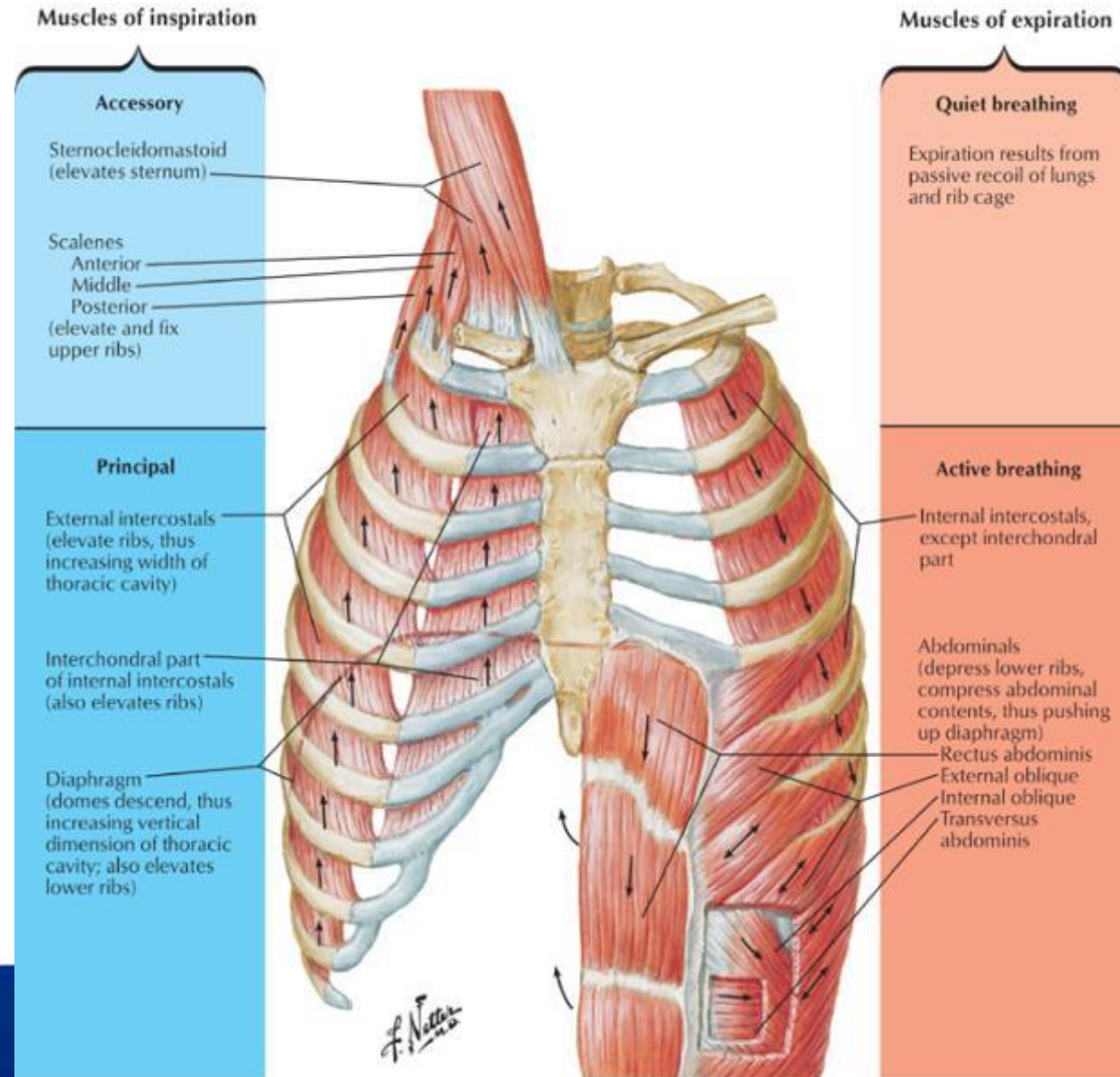
Depression

Depression and Posture

- When a patient is depressed, they adopt a slouched forward posture.
- There are several ramifications of this:
 - Development of exhalation dysfunction in the ribcage
 - Shortening of the psoas muscle with partial un-doming of the diaphragm

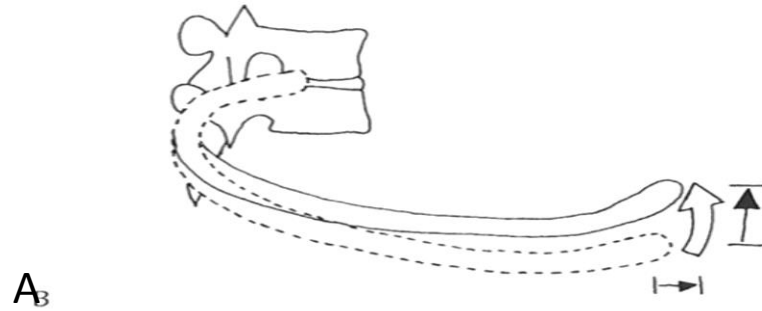


Muscles of Respiration



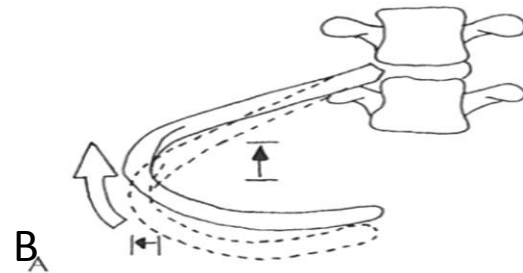
Rib Motion

Ribs 1-5



Pump Handle Motion

Ribs 6-10



Bucket Handle Motion

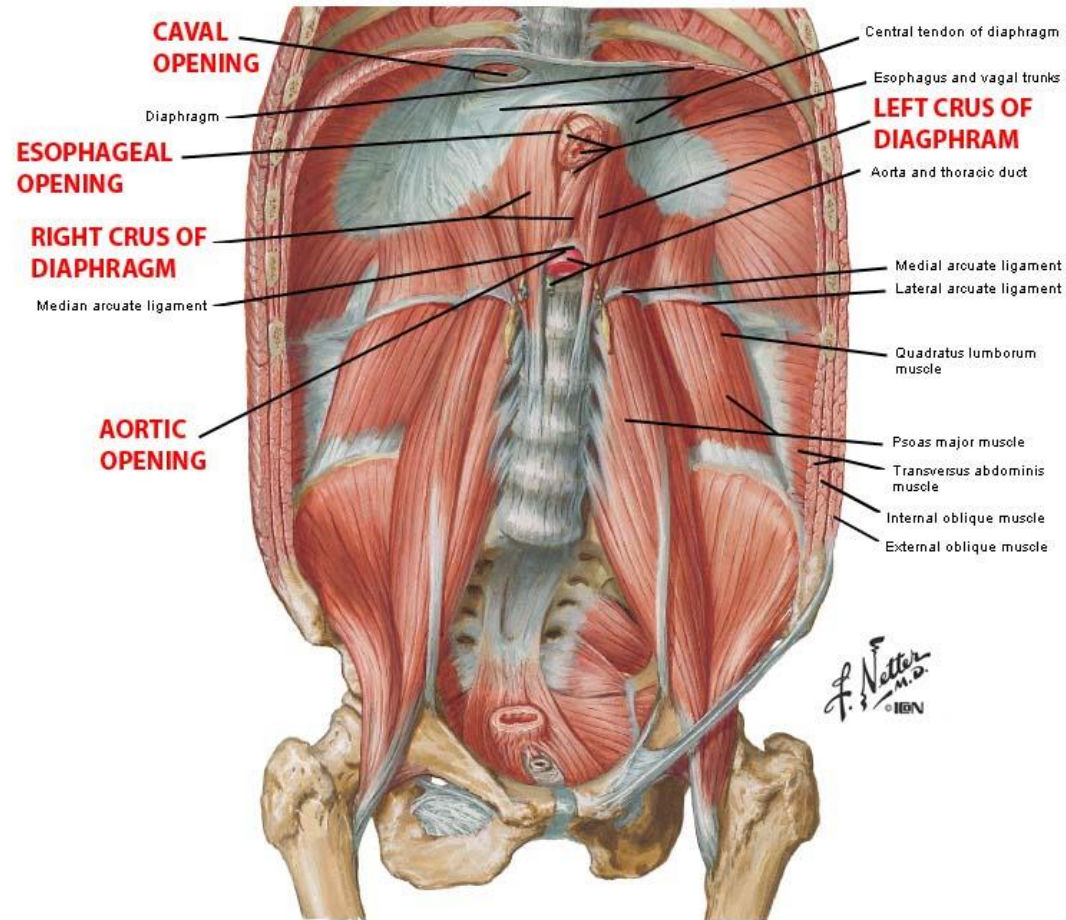
Ribs 11-12



Caliper Motion

DiGiovanna et al., *An Osteopathic Approach to Diagnosis and Treatment*, 3rd Ed, p.368.

Relationship of the Psoas Major Muscle to the Diaphragm

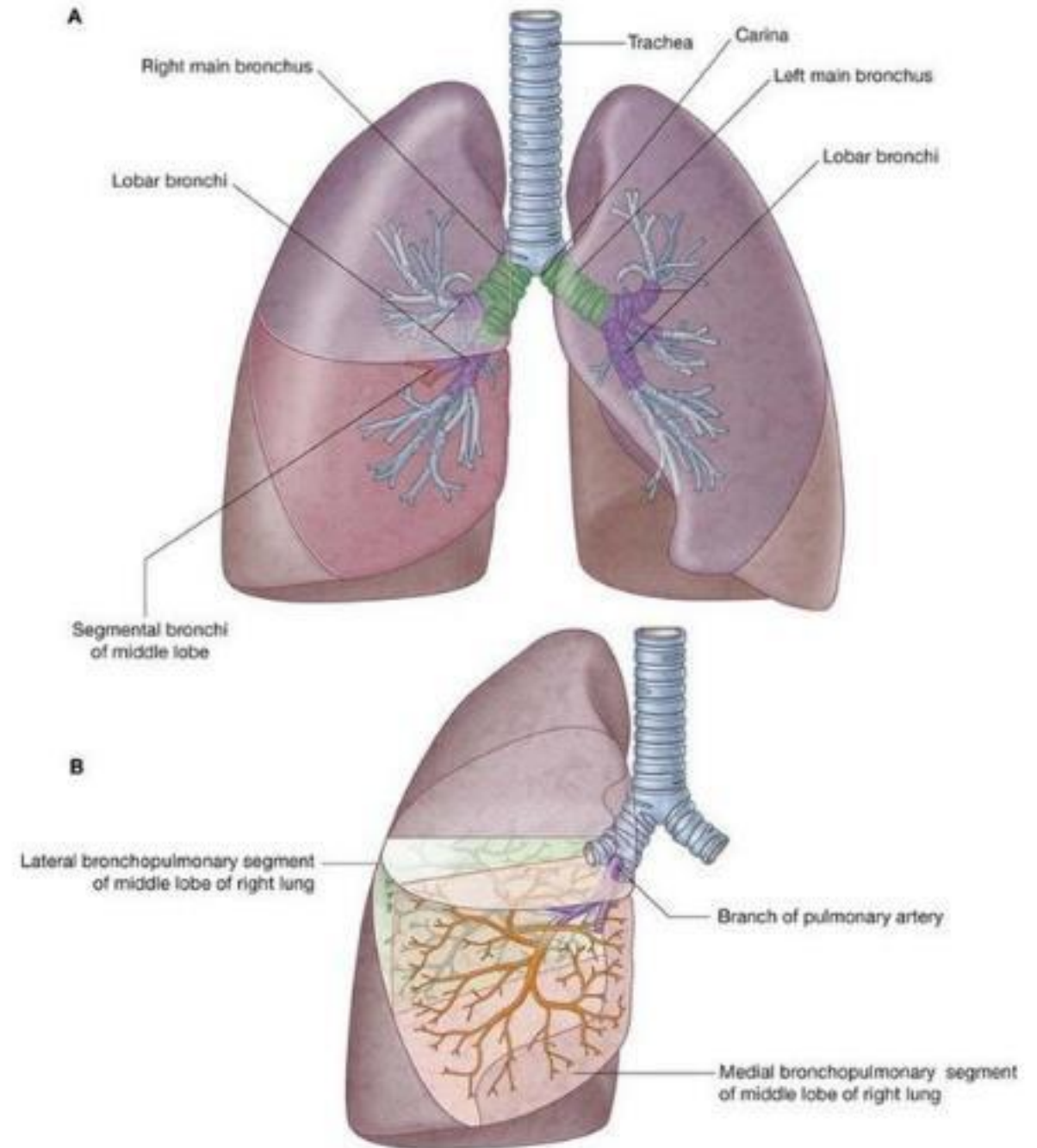


Depression and Hypoventilation

- Poor posture and impaired rib motion prevent full expansion of the lungs.

Changes in Lung Volumes with Deep Breathing

- Lung volume changes 10-25% during shallow breathing, but 3-4X more with deep respiration
- Mobility measured by CT, MRI, Fluoroscopy in 11 studies



Treatment of Exhalation Dysfunction

The “depressed posture” is a classic example of a cause of an exhalation rib dysfunction.

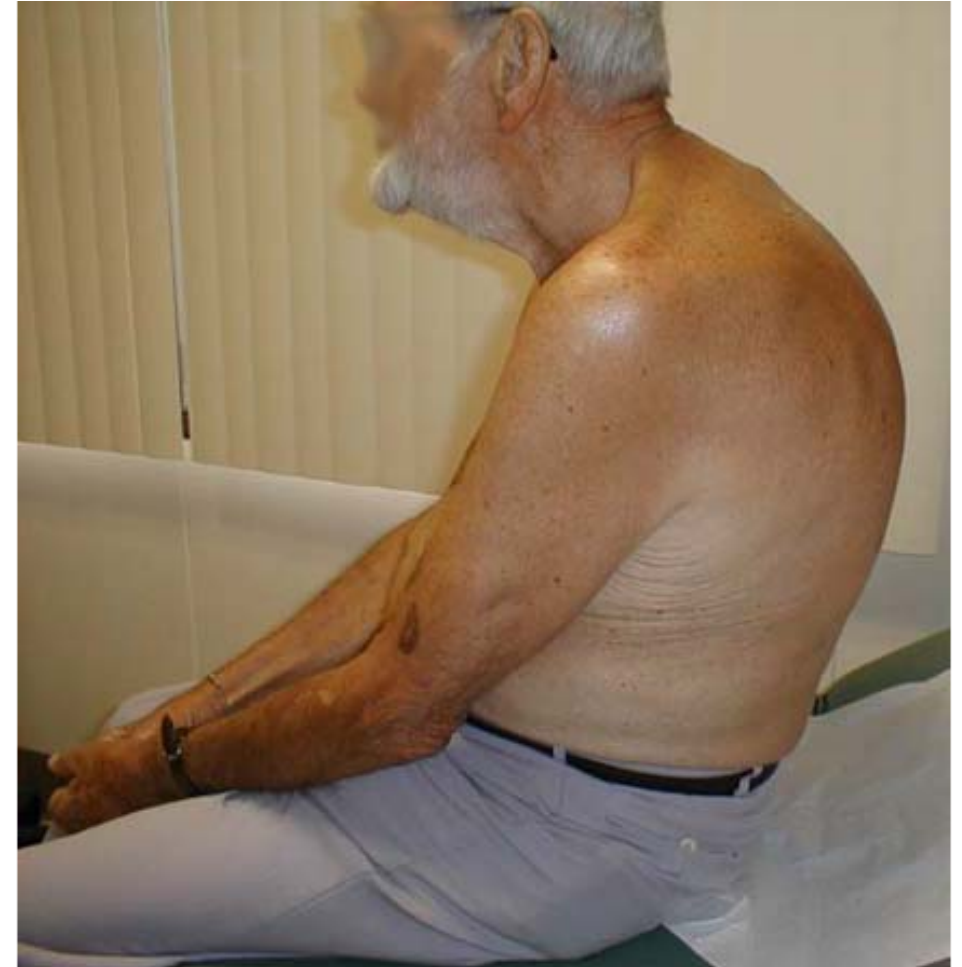
There are 2 general scenarios where treatment of an exhalation dysfunction would be of use in a depressed patient:

- 1) The patient has received counseling or has otherwise worked through the psychological issues involved, but still has somatic dysfunction from his previous habitual posture. Thus, the patient may have worked through the psychological issues, but still feels depressed because he still has the posture of a depressed person.
- 2) Treatment of a rib dysfunction improves the circulatory and oxygenation status and the patient has more energy. This can improve his sense of well-being and provide a “window of opportunity” for counseling.

Expansion of Classical Exhalation Rib Dysfunction

This picture illustrates the 3 components of an exhalation rib dysfunction:

- 1) The ribs themselves are in an exhaled position
- 2) The thoracic spine has an increased kyphosis and the sternum is dropped
- 3) The head is in a dropped-forward position

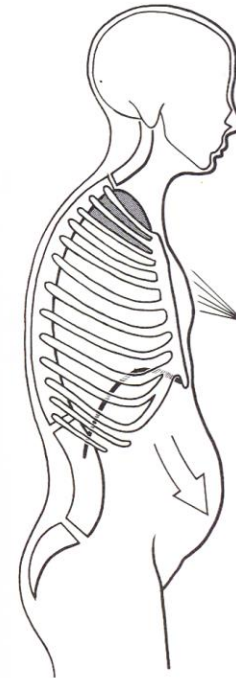
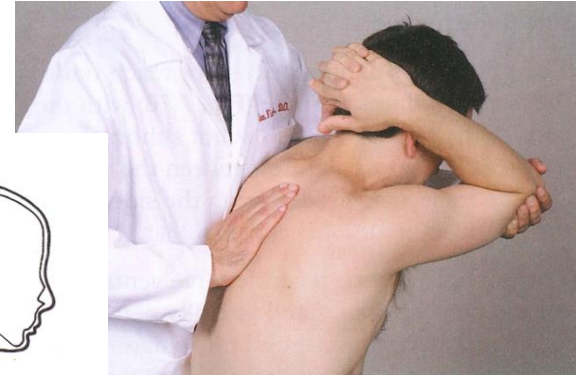
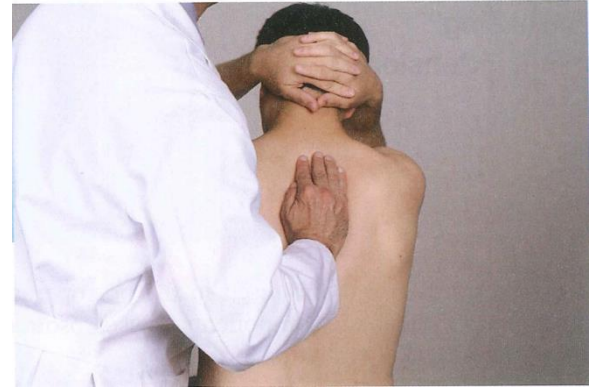


Thoracic Kyphosis

Soft Tissue Treatment of a Kyphosed Thoracic Spine

- Used for a patient with an increased thoracic kyphosis
- Elevate the patient's elbows while the other hand pushes the spine cephalad and slightly anteriorly
- Be sure not to hyperextend the spine

Nicholas & Nicholas, *Atlas of Osteopathic Techniques*, 3ed, p109.



Treatment of Dropped Head Position

- The front hand is on the patient's forehead
- The back hand cradles the occiput either: (a) in the web space between the thumb and index finger, or (b) with the heel of the hand
- By lifting the heel of the foot, you can traction the patient's head upwards
- You can either do multiple iterations of traction and release, or perform a single, slow traction

Nicholas & Nicholas, *Atlas of Osteopathic Techniques*, 3ed, p98.

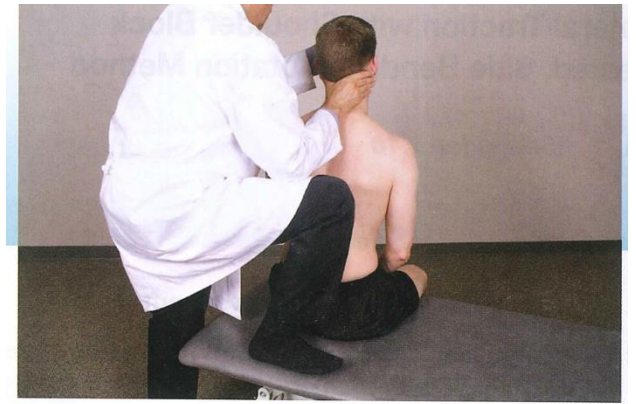


Figure 7.34. Step 5.

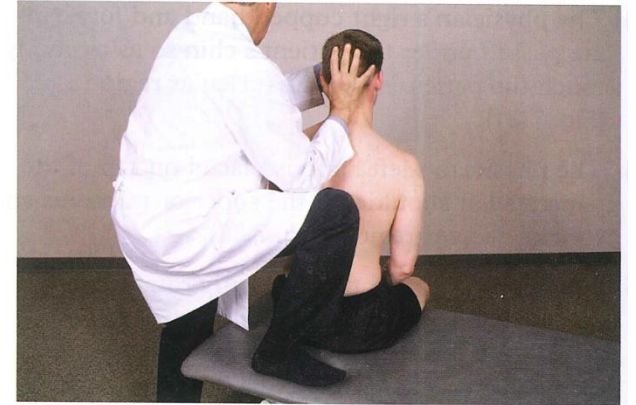


Figure 7.35. Step 5, alternative hand position.

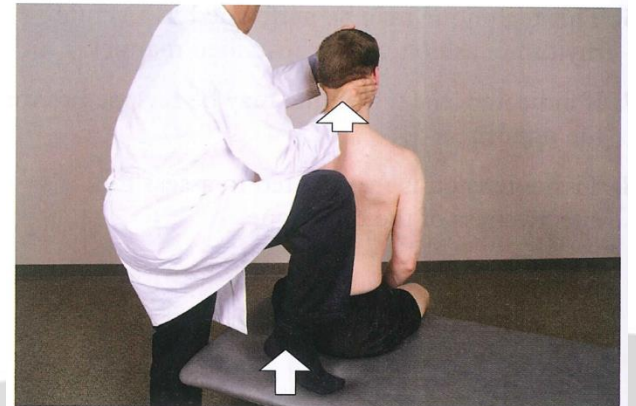
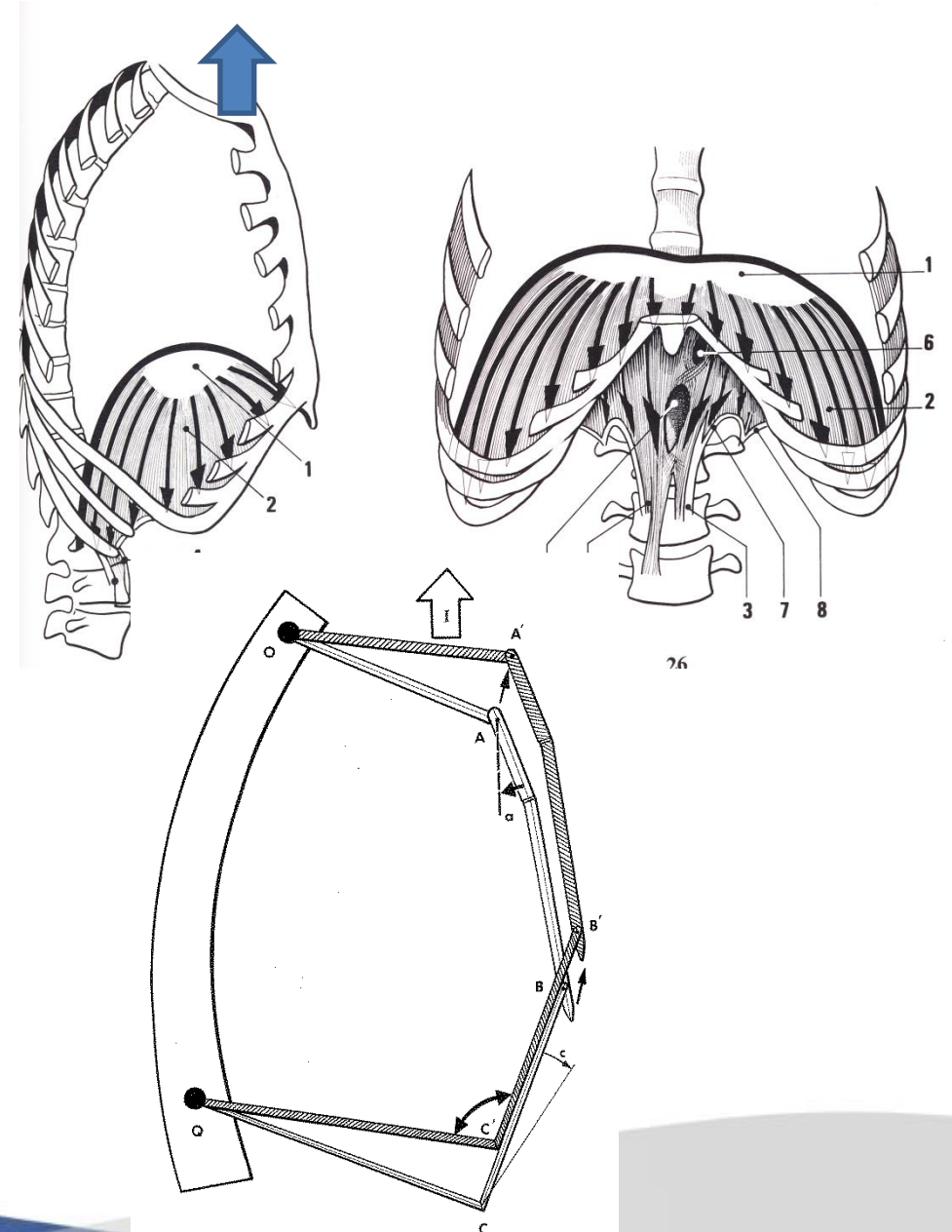


Figure 7.36. Step 6.

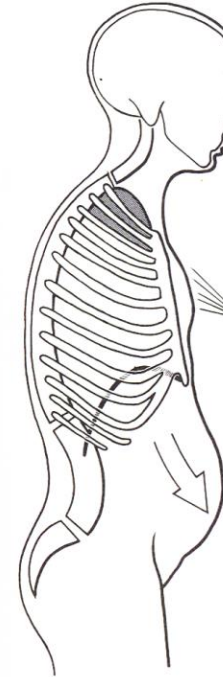
- Attaches posteriorly to the vertebral bodies at the thoraco-lumbar junction area.
 - This is where the diaphragm is anchored.
- Attaches to the costal cartilages and the anterior surfaces of the lower ribs.
- When the diaphragm first contracts, it pulls down the central tendon and expands the vertical diameter of the thorax.
- Then when the abdominal contents resist further compression, the diaphragm pulls the lower ribs up towards the central tendon.
- If some factor prevents sternal elevation, further inhalation is prevented.

Diaphragm and Sternum

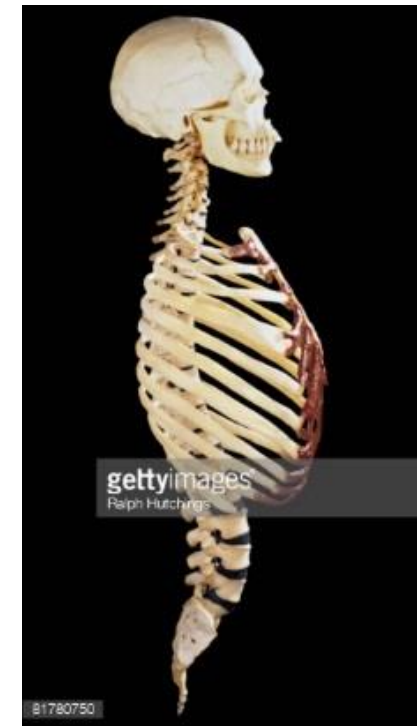


Problems with Inhalation

- When a person is depressed, they will often adopt the forward-slumped posture (2 diagrams on the left).
- This will prevent the rib cage expansion part of inhalation.
- If this posture has been of short duration (only a few months), you can teach the patient to work on changing to a more upright posture (diagram on right).

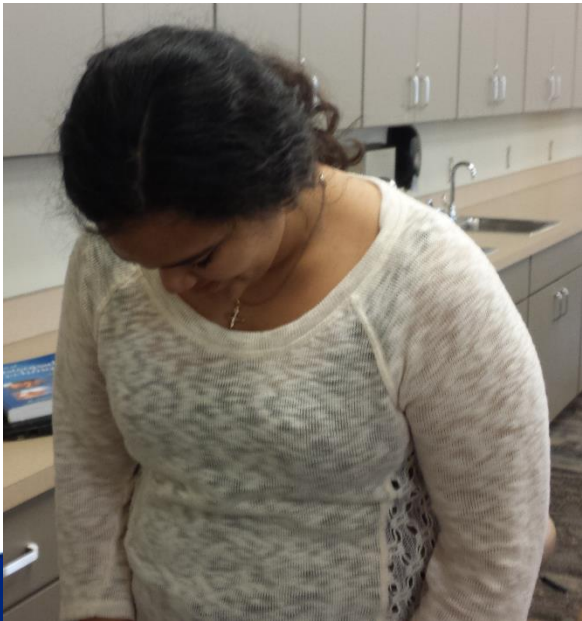


48



Elevation of the Sternum

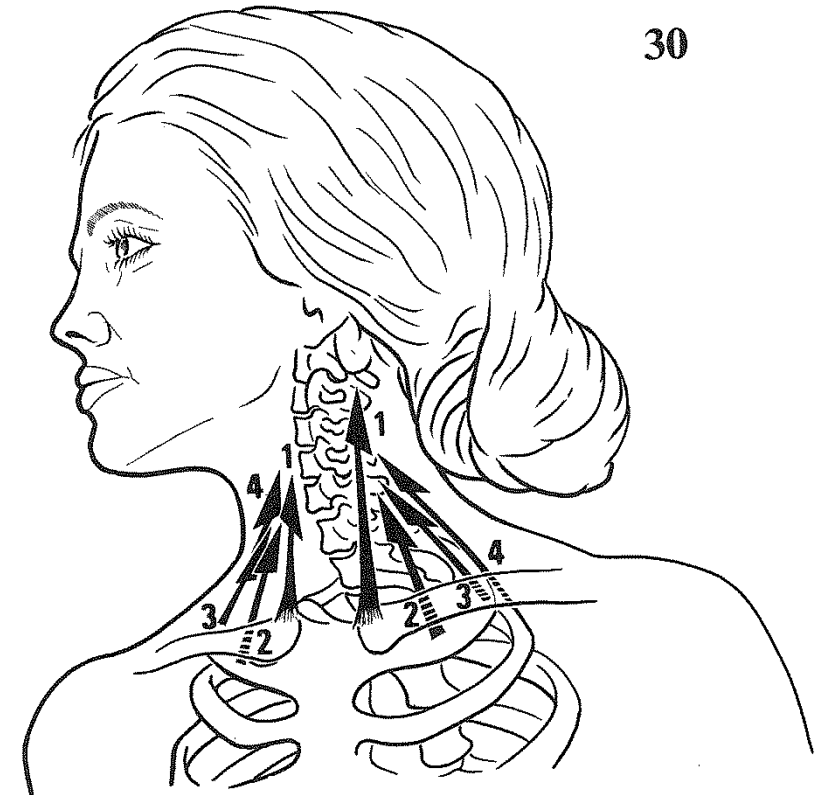
- If the patient with a kyphosed thoracic spine (Left) is ready to work on their habitual breathing pattern, we can teach them to breathe in a more upright position.
- Place your fingers over their clavicles and ask them to lift your fingers and breathe in this new position. (Middle)
- Then have them place their own fingers over their clavicles and be aware of what it feels like to breathe in this position. (Right)



Anxiety, Hyperventilation, and the Scalene Muscles

Anxiety - Hyperventilation

- When a person is in perceived danger and has to perform some kind of strenuous activity, the body enlists muscles not normally used for respiration. These are called accessory muscles of respiration, and include the sternocleidomastoid and scalene muscles.
- When a person is anxious, they also will enlist the use of these muscles. If this occurs for a long period of time, these muscles can become hypertonic and shortened.
- These shortened muscles will hold the ribs up and prevent full exhalation.
- This is a form of *inhalation dysfunction*.



Treatment of Inhalation Dysfunction

There are 2 general scenarios where treatment of an inhalation dysfunction would be of use in an anxious patient

- 1) The patient has received counseling or has otherwise worked through the psychological issues involved, but still has somatic dysfunction from his previous breathing pattern. Thus, the patient may have worked through the psychologic issues, but still feels anxious because he still has the shallow, fast breathing pattern of an anxious person.
- 2) Treatment of hypertonic accessory muscles of respiration allows the patient to breathe deeply and slowly, which will have a calming effect and provide a “window of opportunity” for counseling.

Palpation of Scalene Muscles

- The anterior scalene is a stringy muscle posterior to the clavicular head of the sternocleidomastoid muscle.
- Posterior to the anterior scalene is the broad, thicker middle scalene muscle.
- Compare each scalene on the left vs the right sides.

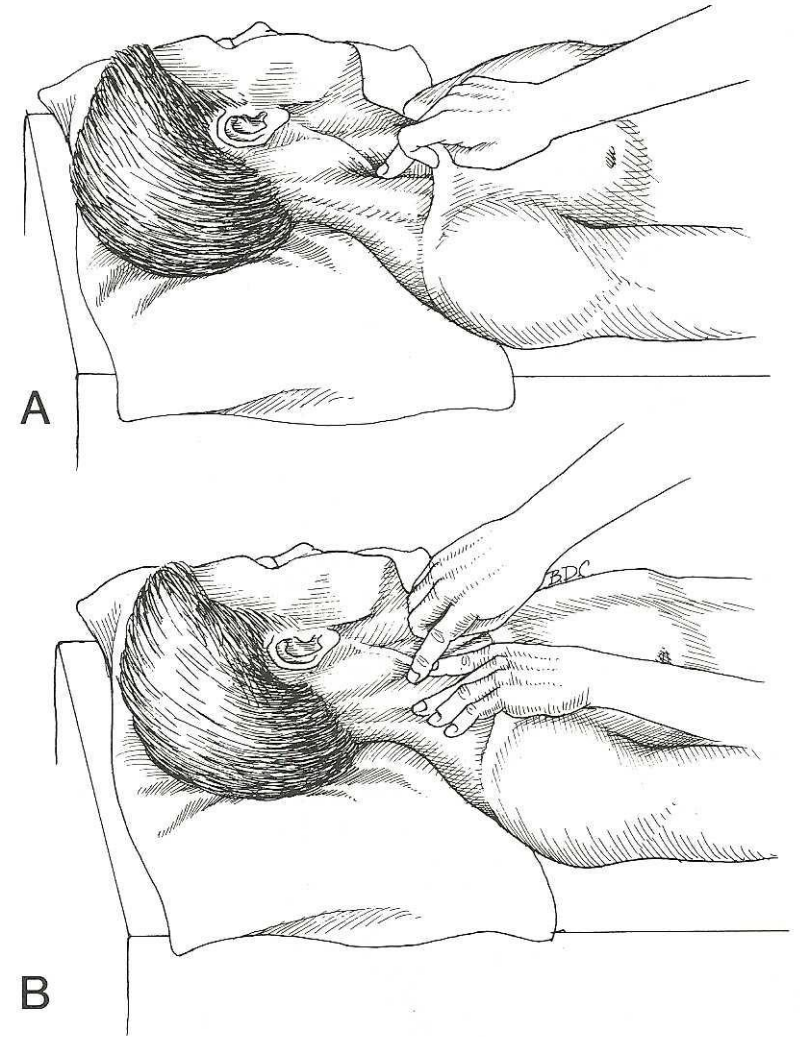


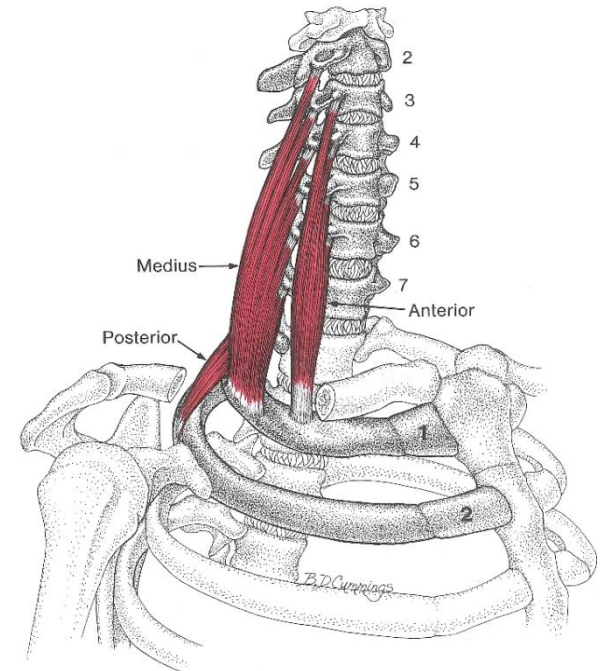
Figure 20.8. Palpation of the anterior and middle scalene muscles. *A*, the posterior border of the clavicular division of the sternocleidomastoid muscle is identified by palpation. The external jugular vein is occluded so that it stands out and can be pressed aside to expose the anterior border of the scalenus anterior at the level of its usual TPs. *B*, fingers of the left hand straddle both the scalenus anterior and scalenus medius muscles. The right index finger approaches the groove between these two muscles at the level of the upper TP in the scalenus medius.

Treatment of Hypertonic Scalene Muscles

- The scalene muscles cause ipsilateral sidebending and some flexion of the neck.
- Straight sidebending away is limited by the uncovertebral joints of the neck.
- However, if you rotate the head away and extend the neck, you can get a good passive stretch of the scalenes.
- You can turn this into a muscle energy technique by having the patient push back towards the affected side.

Simons & Travell, *The Trigger Point Manual*, 2ed, p507

Nicholas & Nicholas, *Atlas of Osteopathic Techniques*, 3ed, p98.



Scalene Self-Treatment

- You can also teach your patient to stretch her scalene muscles herself.

Simons & Travell, *The Trigger Point Manual*, 2ed,
p531

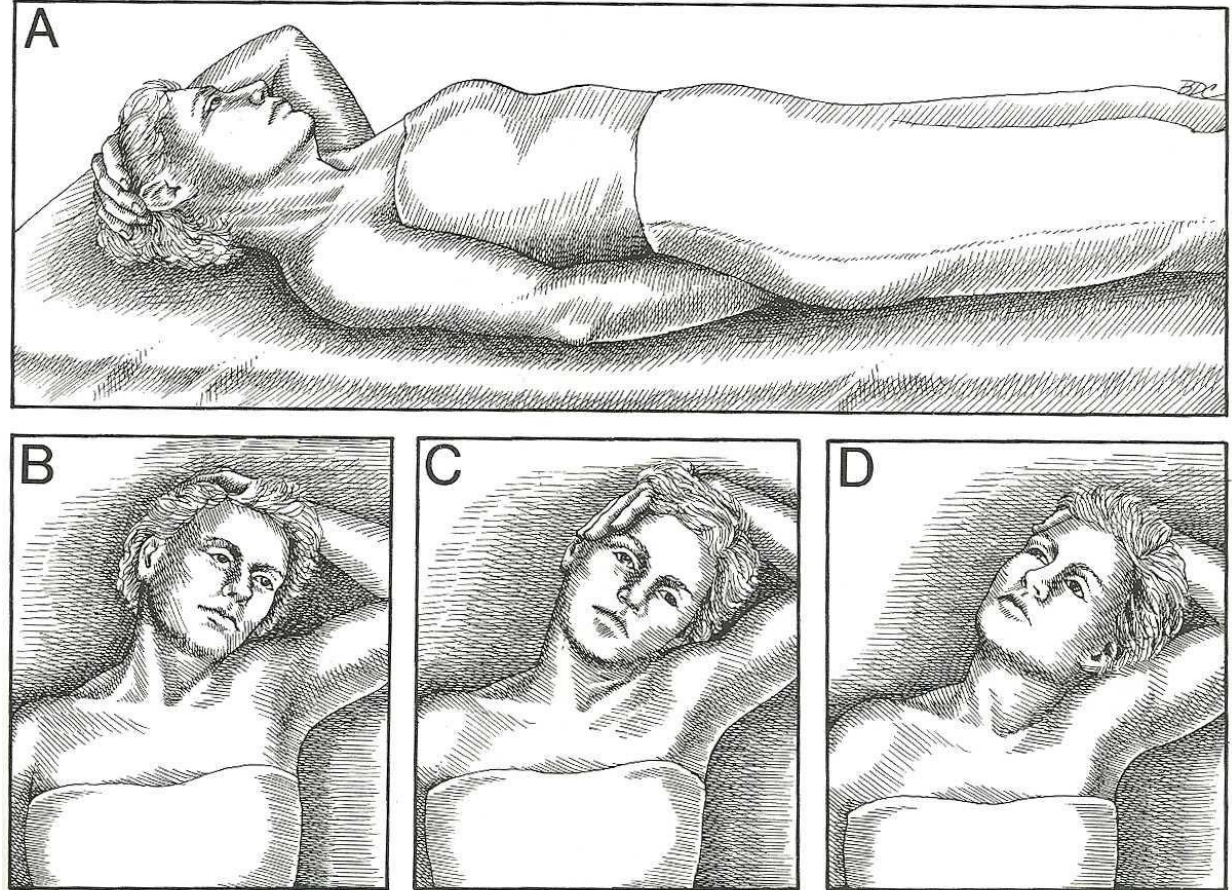


Figure 20.12. The Side-bending Neck Exercise is performed bilaterally, with the patient supine. Each position passively stretches one of the three major scalene muscles. The exercise should always be done bilaterally. A, the hand on the side to be stretched is anchored under the buttock. B, to stretch the scalenus posterior, the face is turned toward the direction of pull. C, the face looks forward to stretch the scalenus medius. D, the face is turned away from the direction of pull to stretch the scalenus anterior.

Summary

- In the depressed patient, hypoventilation can interfere with the delivery of oxygen to various organs and potentially decrease the metabolic energy available to the patient.
- In the depressed patient with an exhalation ribcage dysfunction, treatment should address their (a) increased thoracic kyphosis, (b) depressed sternum, and (c) head-forward posture.
- In the anxious patient who hyperventilates, the scalene muscles should be diagnosed, and treated if hypertonic.

Final Thoughts

- We hope you now feel more comfortable with the osteopathic approach to patients who have either depression or anxiety.
- Please challenge your students on their rationale regarding the osteopathic treatment of these patients.
- If you are able, allow students to use their great OMT skills to help your patients.
- **Help us increase opportunities for students to think osteopathically and perform OMT on their rotations!**

Thank you!!