Practical Applications: Osteopathic Approach to Neck Pain and Pneumonia

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Mark Hanson, DO

Mark Hanson, DO, is currently a PGY-II in the Still OPTI/NRMC ONMM residency program. He grew up in Walnut Creek, CA. He earned his undergrad degree in Biochemistry and Molecular Biology at UC Davis, where he, at one point, took and passed a class on how to drive tractors. He then went on to work in the quality control labs for various wineries for the next six years, and then at a quality assurance lab for a glass bottle distributor for another four years. He then attended ICOM in 2020 and graduated in 2024 with a Doctor of Osteopathy degree and is now working towards a career focusing on osteopathic manual medicine. In his free time, his interests lie in reading (especially Steinbeck), sensory evaluation, cooking, the performing arts, and crossword puzzles.

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Objectives

- Discuss the epidemiology, differential diagnoses, and applicable pathology of neck pain and pneumonia.
- Discuss the anatomy and mechanics involved in neck pain and pneumonia that will be relevant to an osteopathic approach to treatment.
- Discuss an osteopathic structural approach to assessing neck pain and pneumonia.
- Give examples of osteopathic treatment protocols for neck pain and pneumonia.
- Take everyone through the said treatment protocols, step by step, so that they become familiar with the application of osteopathic manipulative treatments.

Neck Pain

Epidemiology – Neck Pain

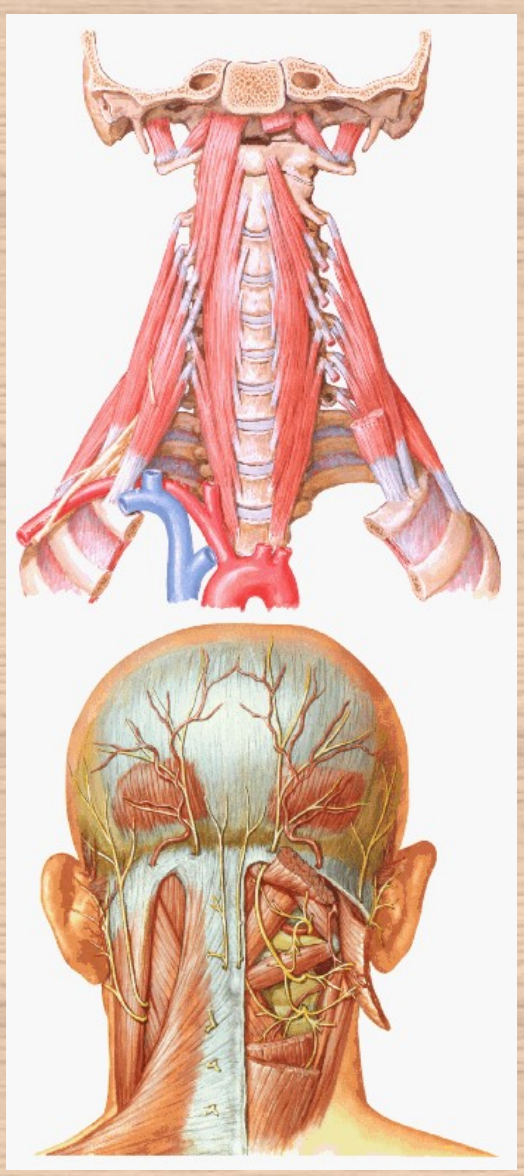
- About 70% of people will have an episode of neck pain in their life.
  - 50-85% with neck pain will have it persist.
  - People live with neck-pain-related disability for on average 22 years.
- 2nd most common MSK complaint behind lower back pain.
- Economic burden of neck pain in 2016: $134.5 billion in the US
- Global incidence (2017): 806.6 per 100,000
  - Radiculopathy Incidence (1994-2012): 83-179 per 100,000
- Global prevalence (2017): 3551.1 per 100,000
  - Radiculopathy prevalence (1991-2012): 121-580 per 100,000

Differential Diagnosis – Neck Pain

- Trauma
- Strain
- Spondylosis/OA
- Discogenic pain
- Whiplash injury
- Myofascial pain syndrome
- Diffuse skeletal hyperostosis
- Spondylotic myelopathy
- Ossification of posterior longitudinal ligament
- Cardiovascular disease: Angina pectoris, MI
- Infection: Osteomyelitis, Discitis, Deep abscess, Meningitis
- Malignancy: Primary, Mets
- Neurologic: Tension HA, Cervical dystonia, Chiari malformation
- Referred pain from shoulder impingement, Adhesive capsulitis, Rotator cuff tear
- Rheumatologic: Polymyalgia rheumatica, Fibromyalgia
- Thoracic outlet syndrome
- Vascular conditions: Vertebral/Carotid artery dissection
- Visceral etiologies: Esophageal obstruction, Biliary disease, Apical lung tumor

Relevant Anatomy – Neck Pain

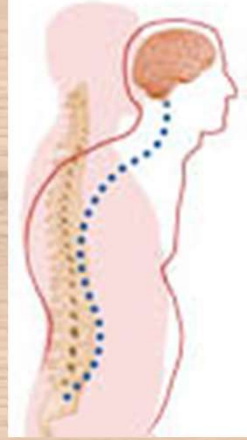
- Many muscles attach to the cervical spine, or cross it entirely as if over a single “joint;” and thus can contribute to symptoms:
  - Prevertebral muscles
  - Short nuchal/Craniovertebral muscles
  - Paraspinal muscles/Erector spinae
  - Scalenes
  - SCM and Trapezius
    - Anecdotally, many patients’ “neck pain/shoulder pain” is frequently just upper Trapezius tightness.
  - Levator Scapulae, Upper Rhomboids



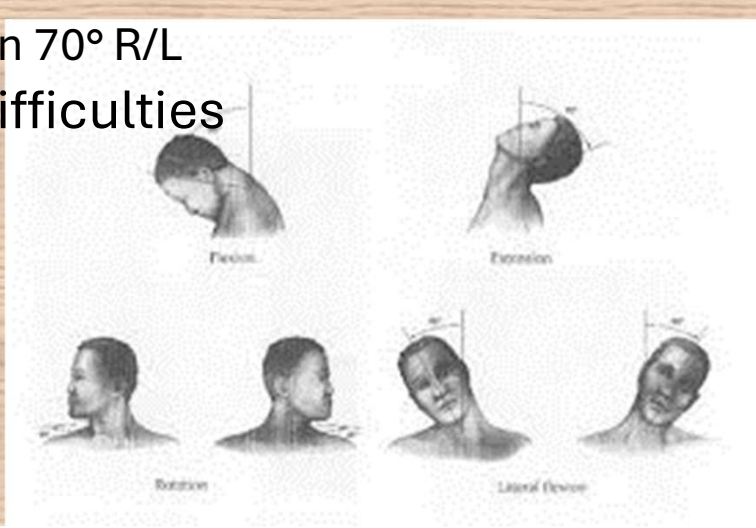
Evidence – Neck Pain

- American Osteopathic Association Policy Statement
  - "…all modalities of osteopathic manipulative treatment of the cervical spine, including HVLA, should continue to be taught at all levels of education, and that osteopathic physicians should continue to offer this form of treatment to their patients."
- Treatment Guidelines
  - Cervical/Thoracic mobilization and manipulation is included in multiple treatment guidelines for neck pain in the US, Canada, and Europe.
- Safety
  - The odds ratios of developing carotid or vertebral artery dissections one week after receiving cervical manipulation versus one week after seeing one's PCP were 0.08 and 0.17 vs population controls, respectively.

Physical Exam – Neck Pain

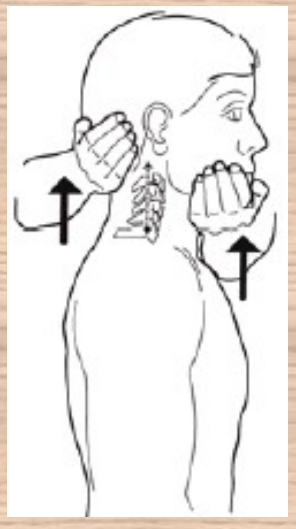


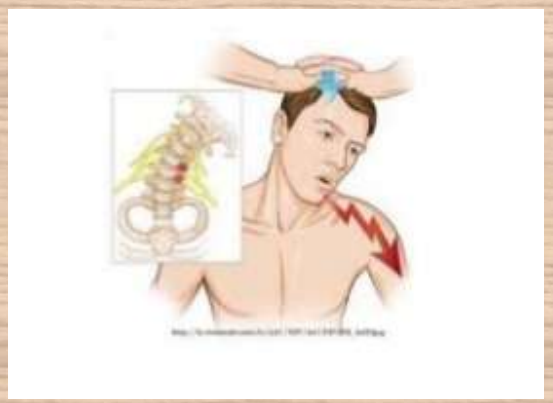
- Surface observation
- Gross structural observation
  - Asymmetry, Extent of Cervical Lordosis/Thoracic Kyphosis, Aberrant posture
    - Fryette's 3rd Law and Upper Cross Syndrome
- Palpation: Step-offs, midline tenderness, masses, etc.
- Cervical Range of Motion
  - Flexion 45°, Extension 55°, Sidebending 40°, Rotation 70° R/L
- Upper/Lower Extremity Muscle Strength, Gait difficulties
- Neck and Upper/Lower Extremity dermatomes
- Deep Tendon Reflexes
- Special Tests



Special Tests – Neck Pain

- Distraction Test
  - Put palm of one hand under supine pt's chin, and other under pt's occiput.
  - Gently lift pt's head Superior to distract cervical vertebrae and open foramina.
  - Positive if relief of pain/paresthesia/numbness, suggesting radicular origin of symptoms.
- Spurling's Maneuver
  - Hold top of patient's head, then put it into Extension and Sidebending.
  - Add an Axial load (not much) down onto the spine.
  - Positive if reproduction of dermatomal shoulder or arm pain/paresthesia/numbness
  - Suggests a disposition to radicular symptoms.





A Small Bit of Advice

- When examining someone, you will find that it is nearly impossible to get a clear idea of what's going on if people stay tensed up.
- Telling someone to "relax" works about 4% of the time.
- Instead, I've found that telling someone to "drop your ____" or "let your ____ fall" works about 80% of the time.
- If all else fails, mildly shaking the appendage of interest tends to get the job done – just be mindful of what you're doing, and don't shake something that's in a lot of pain to begin with.

Neck Pain Protocol

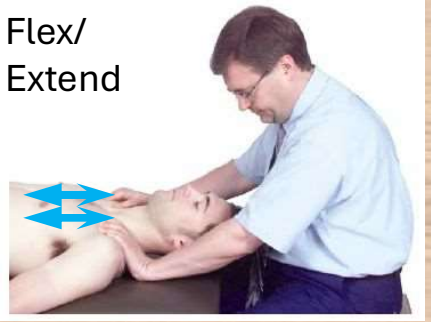
- Thoracic Inlet
- Upper Thoracic Spine
- Cervical Spine/Musculature
- Upper Ribs

DEMO

Osteopathic Structural Exam – Thoracic Inlet

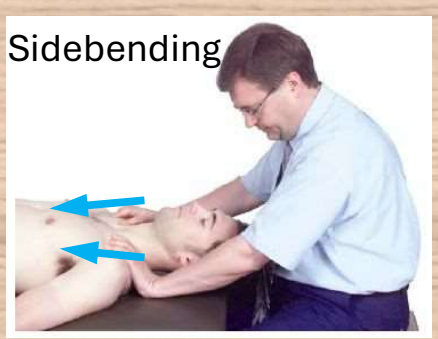
- Sit at the head of the patient and adopt the “Steering Wheel Hold.”
- Test the tissue motion in Flexion (Ant/Inf) and Extension (Post/Sup).
- Test the tissue motion in Rotation L/R (“turn the wheel”).
- Test the tissue motion in Sidebending by depressing the tissues inferiorly.
- Diagnose based on the motions of ease.

Flex/
Extend



Rotation

Sidebending



DEMO

Thoracic Inlet Treatment

- Note: Always treat downstream before upstream.
- Thoracic Inlet Myofascial release
  - Hold the thoracic inlet in the direction of restriction or ease in all three planes of motion, and then wait until the creep stops.

DEMO

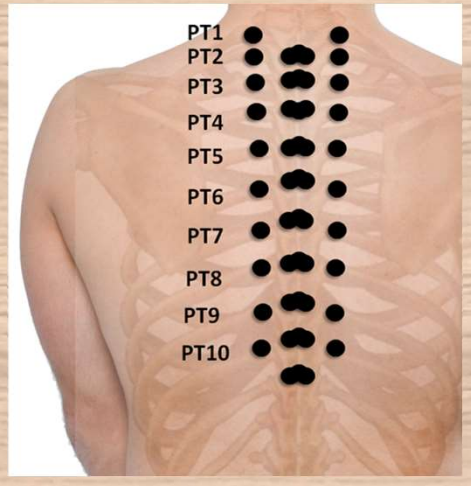
Osteopathic Structural Exam – Upper Thoracic Spine T1-4

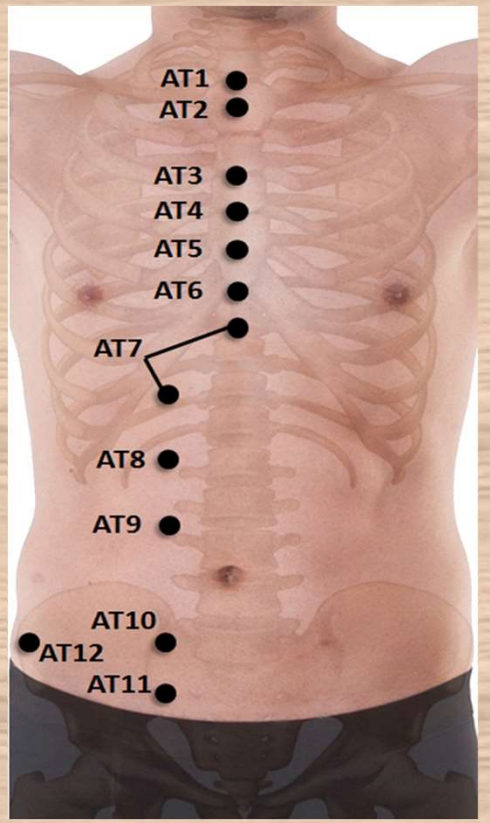
- Passive Method
  - Screen with springing and evaluating tissue texture changes.
  - Diagnose rotation by pressing on TP's with thumbs.
  - Diagnose sidebending by translating facet junctions medially.
  - Diagnose Flexion/Extension by putting patient into F/E while monitoring multiple SP's to determine approximation/distraction preference.
- Active Method
  - Screen with sidebending and evaluating tissue texture changes.
  - Diagnose rotation with thumbs on TP's to see positional asymmetry at neutral (anterior vs posterior).
  - Diagnose sidebending by palpating superjacent/subjacent TP's to evaluate vertical approximation/distraction.
  - Have patient flex forward and extend back, noting improvement, worsening, or no change in the TP asymmetry.
  - Make the diagnosis based on the findings.
- At the same time you can look for Tender Points and tight paraspinal muscles

DEMO

Upper Thoracic Spine T1-4 Treatment

- Soft Tissue
- Muscle Energy
  - Hold at restrictive barrier, have patient push back towards neutral.
  - Upper Thoracic spine: Engage barrier by moving the head instead of the trunk.
- Counterstrain
  - AT1-Midline AT4: Flex
  - PT1-4 SP Mid: Extend
  - PT1-4 SP Lat: ESARA
  - PT 1-4 TP: ESART





TREATMENT

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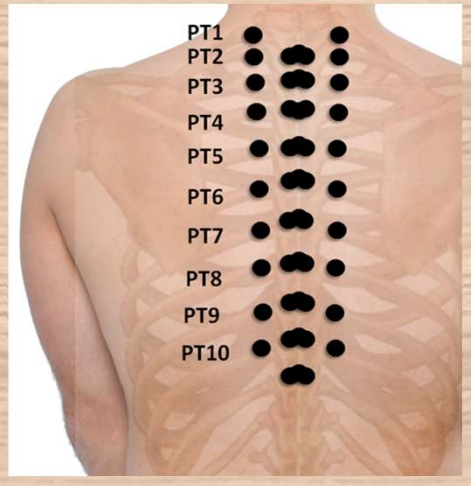
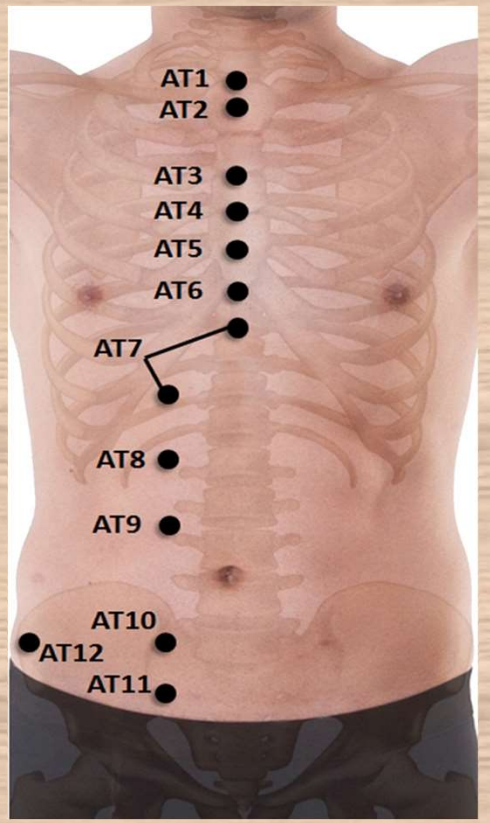




DEMO

Osteopathic Structural Exam – Cervical Spine

- C2-C7
  - Screen along the vertebrae of supine patient with translation.
  - Sidebend and Rotate individual segments with the articular pillars to diagnose.
  - Flex and Extend segments to find preference directly OR re-test sidebending in Flexion and Extension to assess which is more/less restricted.
- Muscle tension
  - Paraspinals, Scalenes*, SCM's, Upper traps, Levator scapulae
    - Anterior scalenes: Sidebend away with slight Rotation towards
    - Middle scalenes: Sidebend away without rotation
    - Posterior scalenes: Sidebend away with slight Rotation away

DEMO

Osteopathic Structural Exam – Cervical Spine

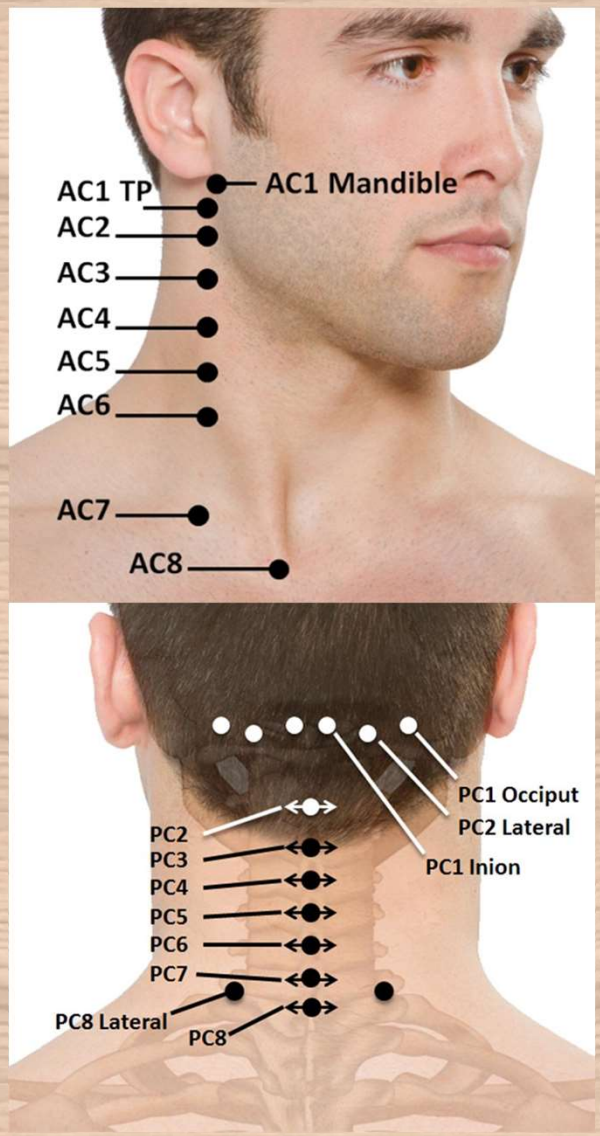
- AA
  - Flex C2-C7 forward to lock them out OR stabilize C2 with a V-hold and check rotation without manipulating further down.
  - Rotate the head to diagnose rotation preference.

- OA
  - Shelf Method
    - Pull base of skull Superior on each side alternately to glean sidebending preference.
  - V-Hold
    - Stabilize C1 with a thumb and index finger, and then test Flexion/Extension, Sidebending, and Rotation of the OA joint to find motion preferences.

DEMO

Cervical Spine Treatment

- Soft Tissue/Suboccipital inhibition
- Muscle Energy
  - Hold at restrictive barrier, have patient push back towards neutral.
- Counterstrain
  - AC1-TP/AC1-Mandible: SARA
  - AC2-AC6: FSARA
  - AC7: FSTRA
  - AC8: FSARA
  - PC1 Inion: FSTRA
  - PC1 Occiput/PC2 Occiput/PC2 SP: ESARA
  - PC3: FSARA
  - PC 4-8: ESARA



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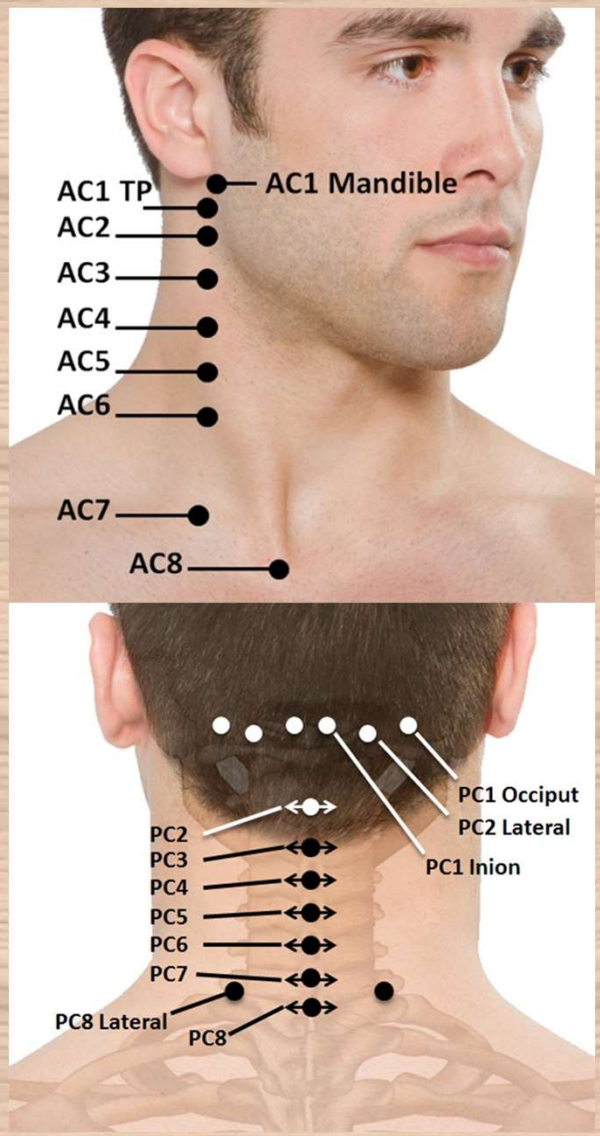


DEMO

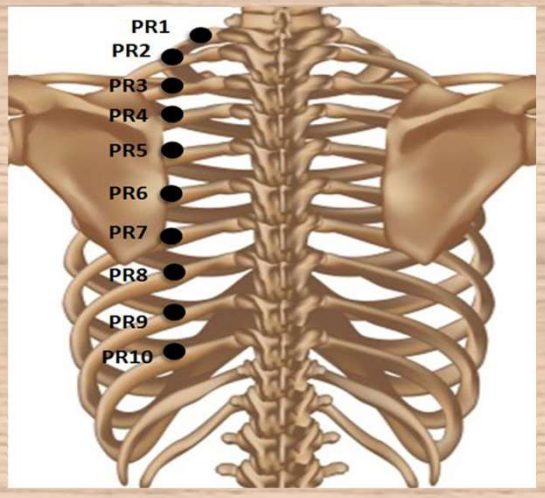
Osteopathic Structural Exam – Rib 1-2

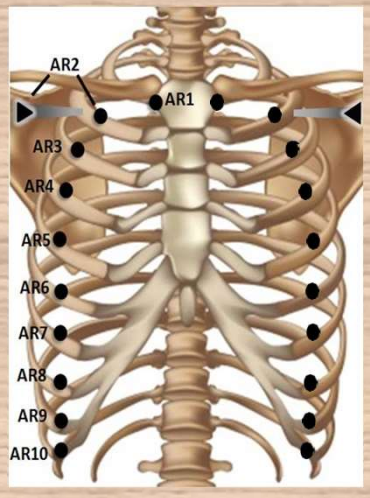
- Rib 1
  - Screen by putting thumbs on the costotransverse articulations of each rib 1; note asymmetry, height, and ask about tenderness.
  - Have the patient give a full breath, and make a diagnosis based on whether the rib prefers motion with inhalation or exhalation.
- Rib 2
  - Screen by springing down on Anterior end of rib 2
  - Have the patient give a full breath, and make a diagnosis based on whether the rib prefers motion with inhalation or exhalation.

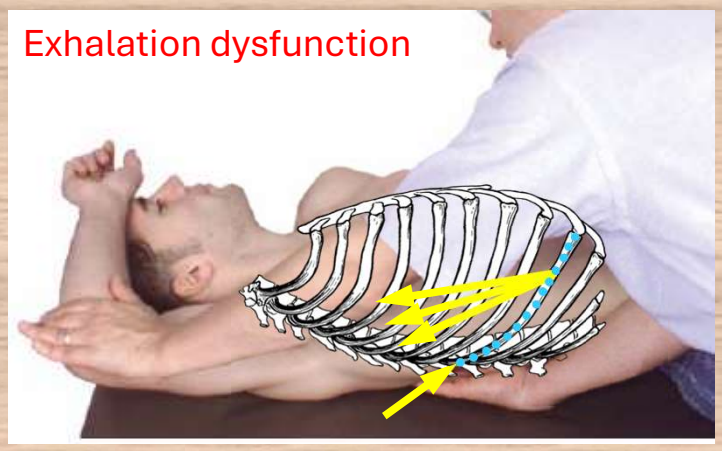
DEMO

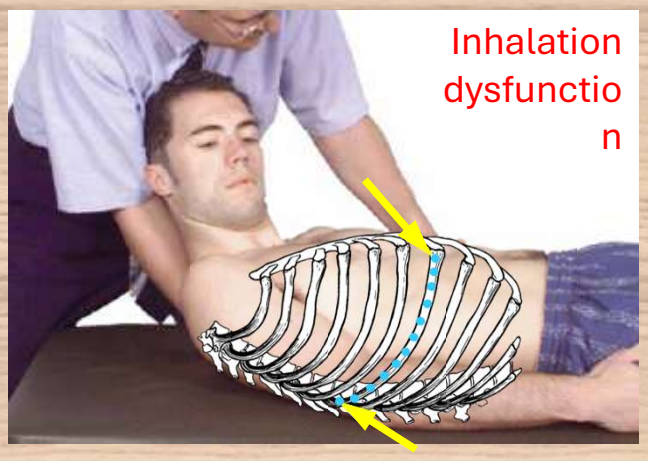
Rib 1-2 Treatment (Pump-handle)

- Muscle Energy
  - Hold at restrictive barrier, have patient push back towards neutral.
- Counterstrain
  - AR1: FSTRT
  - PR1: ESART
  - AR2: FSTRT
  - PR2: SARA









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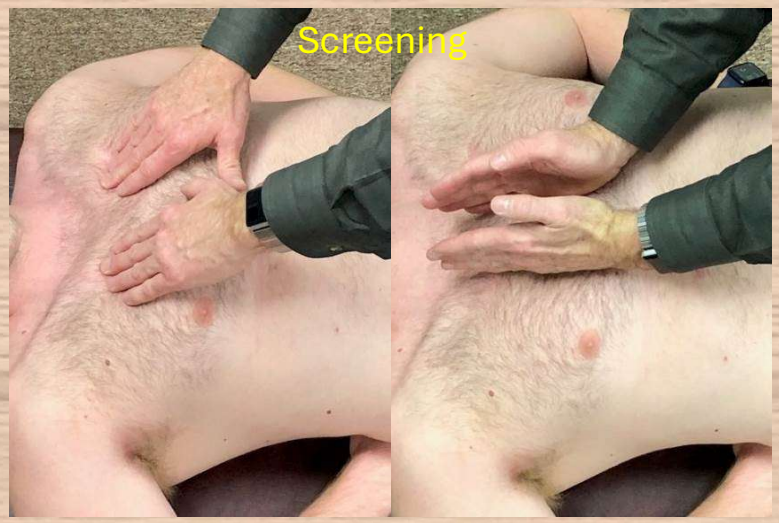

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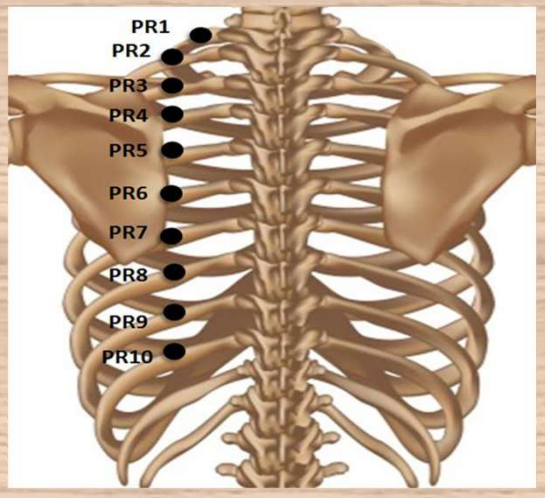
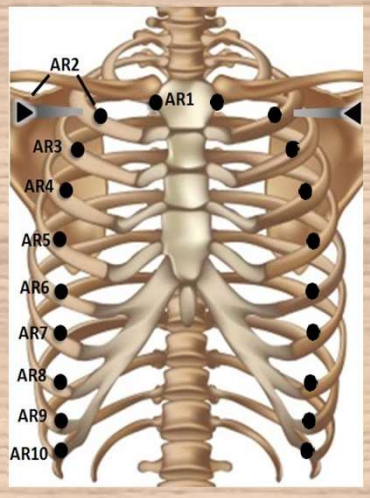
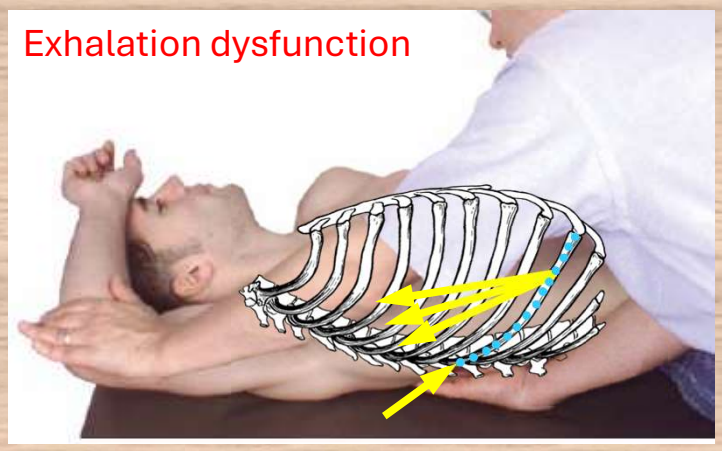
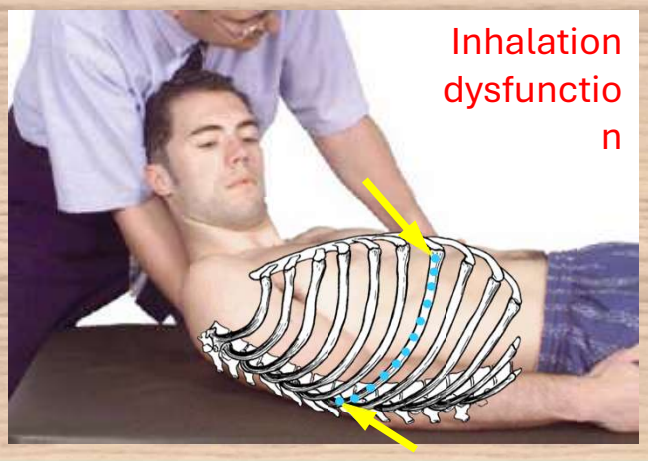


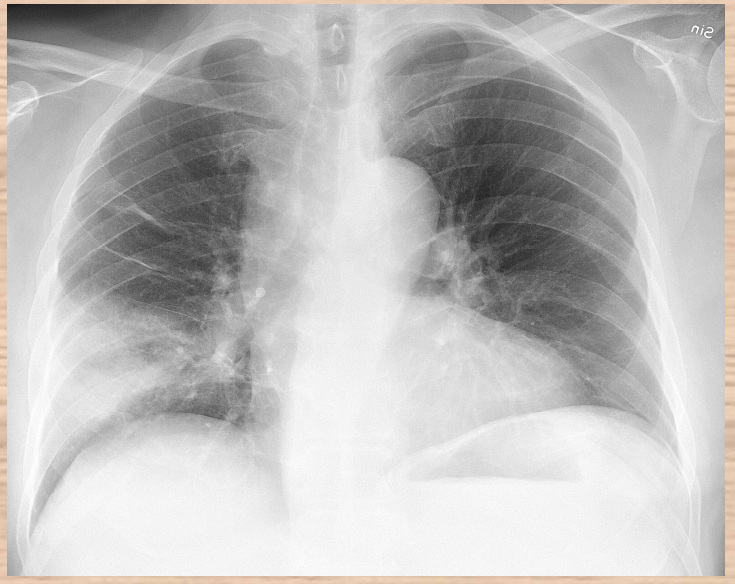






Pneumonia

Epidemiology - Pneumonia



- CAP
  - Incidence of 16-23 per 1000 people per year.
  - 30% of CAP pt's are hospitalized.
  - 8th most common cause of death in the US.
- HAP (NV-HAP/VAP)
  - Total incidence 5-20 per 1000 admissions – mostly NV-HAP.
  - VAP incidence 9.7% of patients on ventilators.
  - VAP prolongs length of mechanical ventilation by 7.6-11.5 days, and prolongs hospital stay by 11.5-13.1 days.
  - $40,000 added cost per VAP patient.
  - 15-30% Mortality in patients with HAP.

Differential Diagnosis – Pneumonia

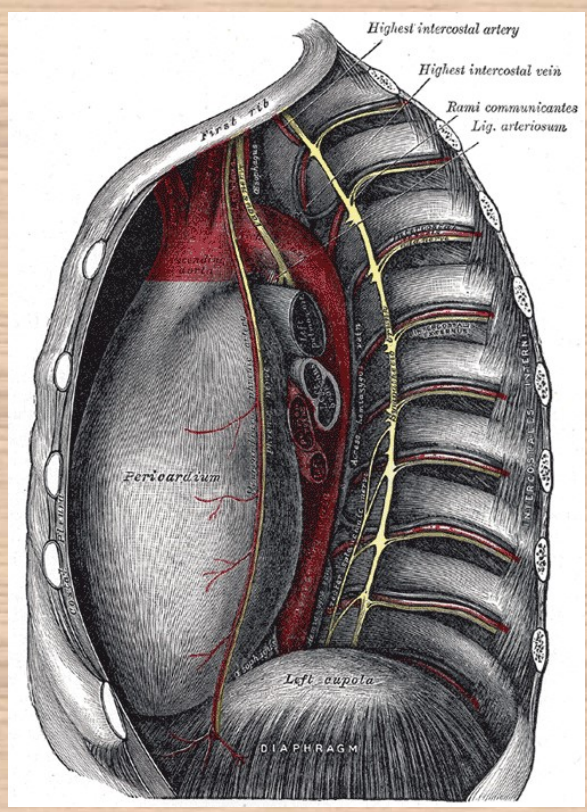
- Congestive heart failure with pulmonary edema
- Acute exacerbation of COPD
- Asthma exacerbation
- Acute Bronchitis
- PE
- Pulmonary hemorrhage
- Aspiration/Chemical pneumonitis
- Drug reaction
- Lung cancer
- Collagen vascular disease
- Vasculitis
- Acute exacerbation of Bronchiectasis
- Interstitial lung disease

Pathophysiology - Pneumonia

- Introduction of virulent organism, possibly with an overwhelming inoculum (especially in aspiration).
  - Increased risk of exposure thereto in certain situations, like Nursing homes, Prisons, Hospitals, Ventilators, etc.
- Abnormal host defenses/airway clearance due to environmental exposures (EtOH, smoking), pathogen virulence factors, lung disorders, systemic disorders.
- Local macrophages fail to contain invasion, leading to phagocyte recruitment and local inflammatory response via cytokines.
- Increased microvascular permeability leads to WBC, proteins, and fluid movement into alveolar space.
- Local cytokines/chemokines diffuse into the blood and cause a systemic inflammatory response.

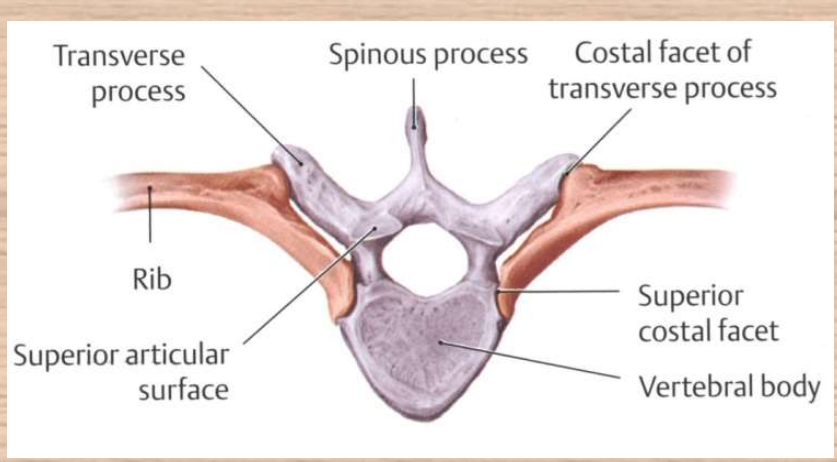
Relevant Anatomy - Pneumonia

- Cervical Spine
  - Vagus nerve from the head passes by the OA, C1, and C2
  - Phrenic nerve forms from C3-C4-C5 nerves
  - Scalene muscles attach to ribs 1-2
- Sympathetic Innervation
  - Sympathetic innervation to the lungs from T1-T6 (different sources will specify different ranges).
  - Sympathetic Chain Ganglia sit just Anterior to the heads of the ribs.



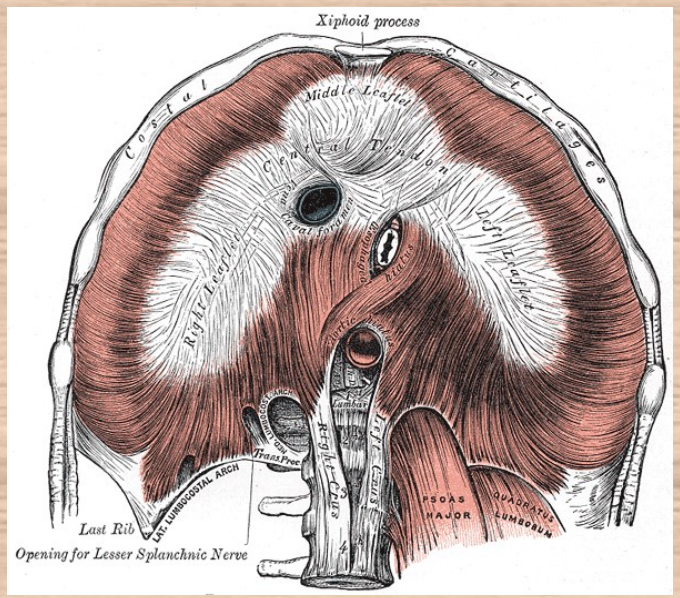
Relevant Anatomy - Pneumonia

- Thoracic spine/Rib Joints
  - Costovertebral joints
    - Ribs 1, 10, 11, 12: Unifacets.
    - Ribs 2-9: Demifacets of two adjacent vertebrae.
  - Costotransverse joints
    - Ribs 1-10 only.
  - Costal cartilage
    - Ribs 1-7 attach to sternum with individual cartilaginous joints.
    - Ribs 8-10 merge into a single cartilaginous mass attaching to the sternum.
    - Ribs 11-12 do not attach to the greater ribcage in the front.



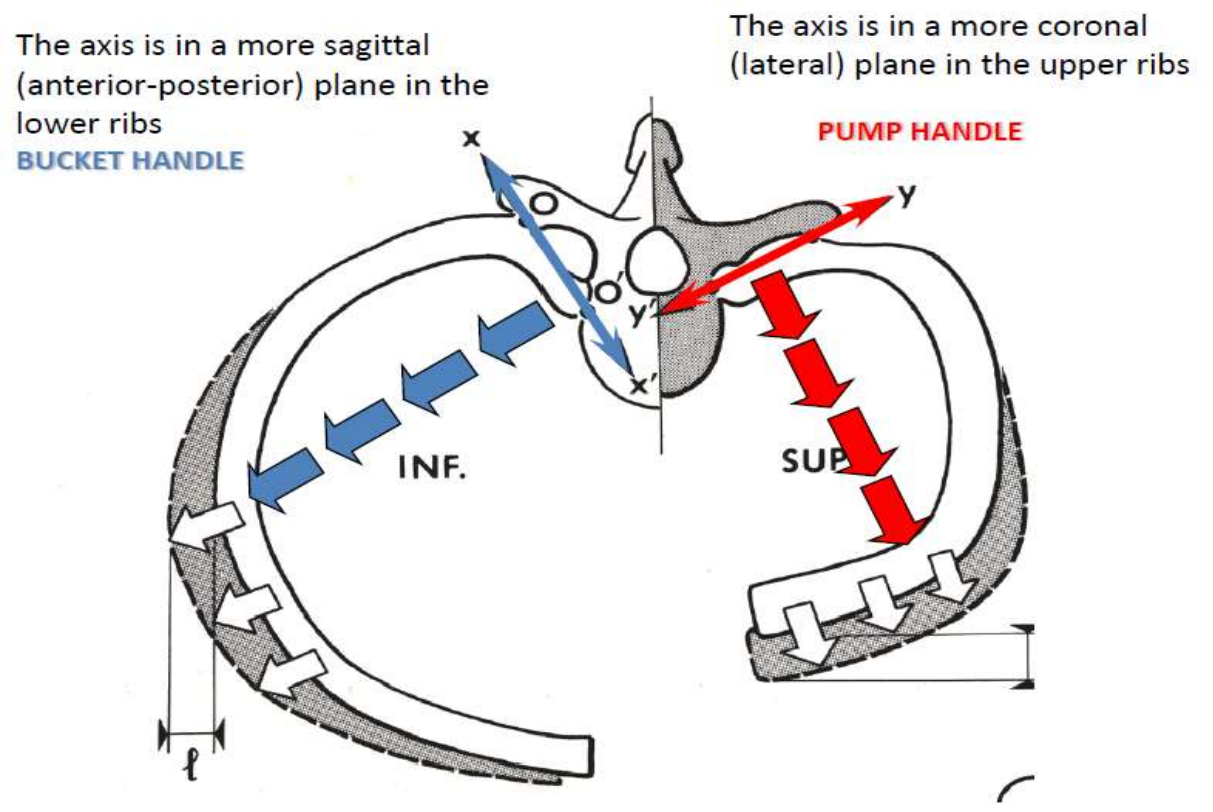
Relevant Anatomy - Pneumonia

- Sternum
  - Directly attaches to ribs 1-7.
- Diaphragm
  - Attaches to Xiphoid, Internal surface of ribs 7-12, and L1-3 and the IVD's.
  - Radial-organization of muscle converging on central tendon.
- Accessory muscles
  - Helping inspiration: Scalenes, External intercostals
  - Helping expiration: Internal/Innermost intercostals, Abdominal muscles, Erector spinae
- Lymphatics
  - Drain to both the Right Lymphatic Duct and Thoracic Duct.
  - Diaphragm motion compels overall lymphatic return.



Relevant Mechanics - Pneumonia

- Pump-handle and Bucket-handle motion.
  - Based on the axis of rotation created by the costal head and costovertebral joints.



Relevant Mechanics - Pneumonia

- Diaphragm action and Rib movement
  - The diaphragm is anchored to the lumbar spine, xiphoid, and lower ribs below; and the mediastinum above. When it first contracts, it displaces downward and presses on the viscera. At a certain point, though, the compliance of the abdominal wall/pelvic floor/mediastinum ends, and the lower mediastinum/upper abdominal viscera become a fulcrum about which further contraction of the diaphragm then acts to elevate the xiphoid/sternum and lower ribs, effecting the pump handle/bucket handle motion. Accessory muscles help with this.
- Try tensing your abdominal muscles and breathing in as much as possible to see how much inhalation is accomplished by rib motion alone.

Evidence - Pneumonia

- Multicenter Osteopathic Pneumonia Study in the Elderly (MOPSE)
  - Patients 50 years or older, hospitalized with CAP or NHAP (nursing home) were given a BID standardized treatment protocol, a sham treatment, or no treatment.
    - MOPSE protocol: Thoracolumbar soft tissue, Rib raising, Doming of the diaphragm with myofascial release, Cervical spine soft tissue, Suboccipital decompression, Thoracic inlet myofascial release, Thoracic lymphatic pump, and Pedal pump.
  - Significant decrease in length of stay for the OMT group in the 50-74 year age range.
  - Significant decrease in mortality for the OMT group in the 75 or older age range.
  - Significant decrease in mortality for the OMT group with the higher PNA severity levels.

Physical Exam - Pneumonia

- Vitals
  - Fever, HR, RR, BP
  - Sepsis?
- Gross structural/mechanical observation
  - Pectus Carinatum/Excavatum, Scoliosis
  - Labor of breathing/accessory muscle use
  - Coughing (productive/non-productive)
- Auscultation
  - Breath sounds
  - Egophony: “EEE” -> “AAA” due to increased consolidation/fluid
- Palpation
  - Fremitus: ”99” producing increased vibration transmission due to lung consolidation

Pneumonia Protocol

- Rib Raising
- Thoracic Inlet
- Abdominal Diaphragm
- Cervical Spine
- Thoracic Spine
- Ribs
- Lymphatics

- MOPSE study specific protocol
  - Rib Raising
  - Diaphragm Myofascial Release
  - Thoracic Inlet Myofascial Release
  - Cervical Spine Soft Tissue
  - Suboccipital Decompression
  - Thoracolumbar Soft Tissue
  - Thoracic Lymphatic Pump
    - Kimberly Manual, 2008, pg 61
  - Pedal Pump
    - Kimberly Manual, 2008, pg 61

DEMO

Rib Raising Treatment

- Sit to the side of a supine patient.
- Put both hands under the patient, with the DIP's along the angles of the ribs – Start at the top ribs.
- Lift the ribs Anteriorly and Traction* the ribs Inferiorly and Laterally.
  - *Lean back rather than pull your arms.
- Hold until you get a release.
- Shift down to the next group of ribs.
- If you have a partner, you can have them simultaneously do the other side.

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DEMO

Osteopathic Structural Exam – Thoracic Inlet and Abdominal Diaphragm

- Thoracic Outlet
  - Sit at the head of the patient and adopt the “Steering Wheel Hold.”
  - Test the tissue motion in Flexion (Ant/Inf) and Extension (Post/Sup).
  - Test the tissue motion in Rotation L/R (“turn the wheel”).
  - Test the tissue motion in Sidebending by depressing the tissues inferiorly.
  - Diagnose based on the motions of ease.
- Abdominal Diaphragm
  - Stand to the side of the supine patient.
  - Hold each side of the lower rib cage OR hold the front and back.
  - Manipulate the ribcage to test its motion in Flexion/Extension, Rotation L/R, and Sidebending L/R (translating it R/L, resp.).
  - Diagnose based on the motions of ease.

DEMO

Thoracic Inlet/Abdominal Diaphragm Treatment

- Note: Always treat downstream before upstream
- Thoracic Inlet Myofascial release
  - Put the thoracic inlet in the direction of restriction or ease in all three planes of motion, and wait until the creep stops.
- Abdominal Diaphragm Direct MFR
  - Hold the rib cage in the direction of restriction or ease in all three planes of motion to manipulate the fascia of the diaphragm within, and wait until the creep stops.
    - If one side feels more restricted, you can augment the treatment by having the patient take deep breaths while you resist the motion on LESS restricted side.

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DEMO

Osteopathic Structural Exam – Cervical Spine

- AA
  - Flex C2-C7 forward to lock them out OR stabilize C2 with a V-hold and check rotation without manipulating further down.
  - Rotate the head to diagnose rotation preference.

- OA
  - Shelf Method
    - Pull base of skull Superior on each side alternately to glean sidebending preference.
  - V-Hold
    - Stabilize C1 with a thumb and index finger, and then test Flexion/Extension, Sidebending, and Rotation of the head to find motion preferences.

DEMO

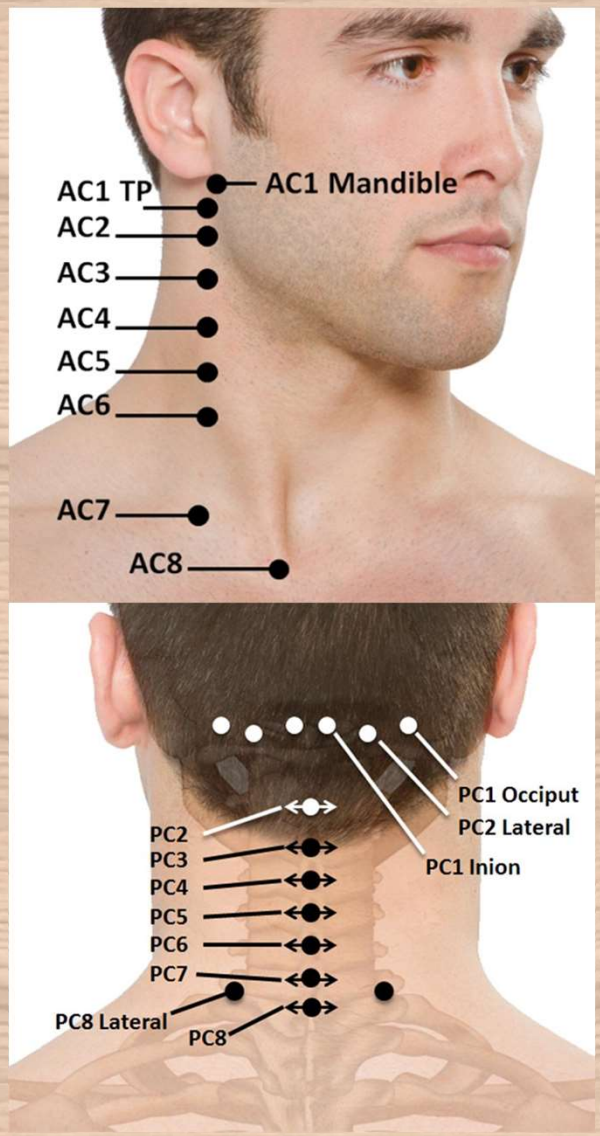
Osteopathic Structural Exam – Cervical Spine

- C2-C7
  - Screen along the vertebrae of supine patient with translation.
  - Sidebend and Rotate individual segments with the articular pillars to diagnose.
  - Flex and Extend segments to find preference directly OR re-test sidebending in Flexion and Extension to assess which is more/less restricted.
- Muscle tension
  - Paraspinals, Scalenes*, SCM's, Upper traps, Levator scapulae
    - Anterior scalenes: Sidebend away with slight Rotation towards.
    - Middle scalenes: Sidebend away without rotation.
    - Posterior scalenes: Sidebend away with slight Rotation away.

DEMO

Cervical Spine Treatment

- Soft Tissue/Suboccipital inhibition
- Muscle Energy
  - Hold at restrictive barrier, have patient push back towards neutral.
- Counterstrain
  - AC1-TP/AC1-Mandible: SARA
  - AC2-AC6: FSARA
  - AC7: FSTRA
  - AC8: FSARA
  - PC1 Inion: FSTRA
  - PC1 Occiput/PC2 Occiput/PC2 SP: ESARA
  - PC3: FSARA
  - PC 4-8: ESARA



DEMO

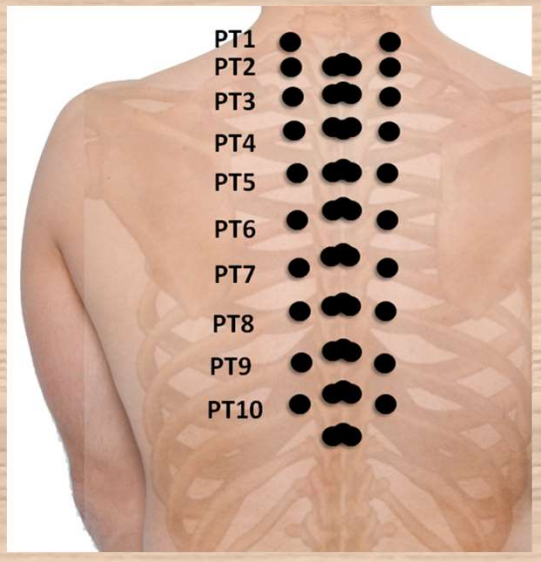
Osteopathic Structural Exam – Thoracic Spine

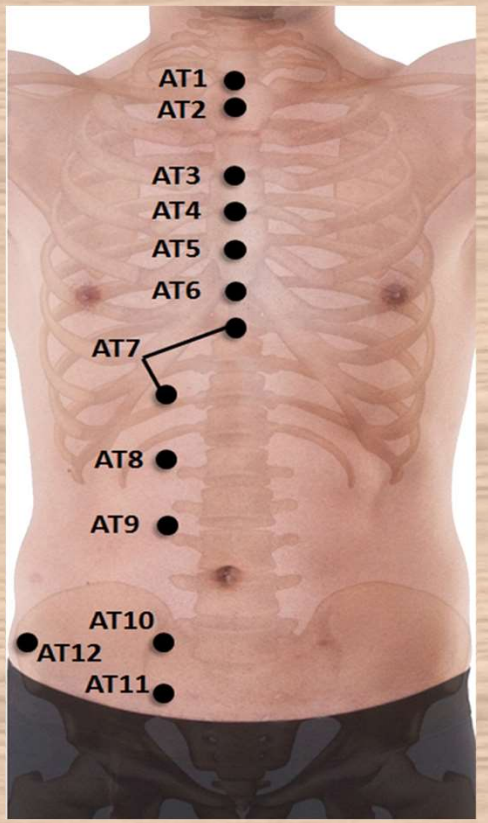
- Passive Method
  - Screen with springing and evaluating tissue texture changes.
  - Diagnose rotation by pressing on TP's with thumbs.
  - Diagnose sidebending by translating facet junctions medially.
  - Diagnose Flexion/Extension by putting patient into F/E while monitoring multiple SP's to determine approximation/distraction preference.
- Active Method
  - Screen with sidebending and evaluating tissue texture changes.
  - Diagnose rotation with thumbs on TP's to see positional asymmetry at neutral (anterior vs posterior).
  - Diagnose sidebending by palpating superjacent/subjacent TP's to evaluate vertical approximation/distraction.
  - Have patient flex forward and extend back, noting improvement, worsening, or no change in the TP asymmetry.
  - Make the diagnosis based on the findings.
- At the same time you can look for Tender Points and tight paraspinal muscles

DEMO

Thoracic Spine Treatment

- Soft Tissue
- Muscle Energy
  - Hold at restrictive barrier, have patient push back towards neutral.
- Counterstrain
  - AT1-Midline AT7: Flex
  - AT7-AT12: FSTRA
  - PT1-12 SP Mid: Extend
  - PT1-12 SP Lat: ESARA
  - PT 1-12 TP: ESART





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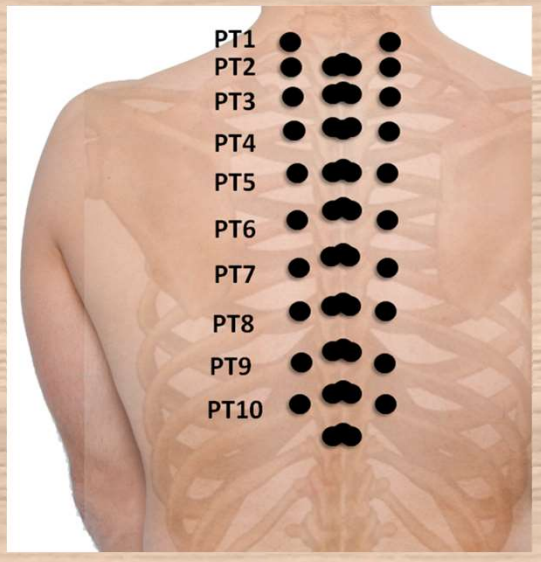
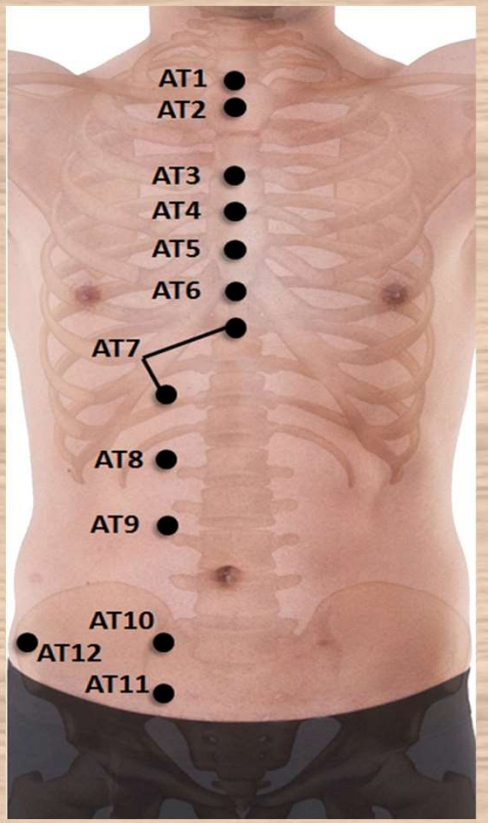




DEMO

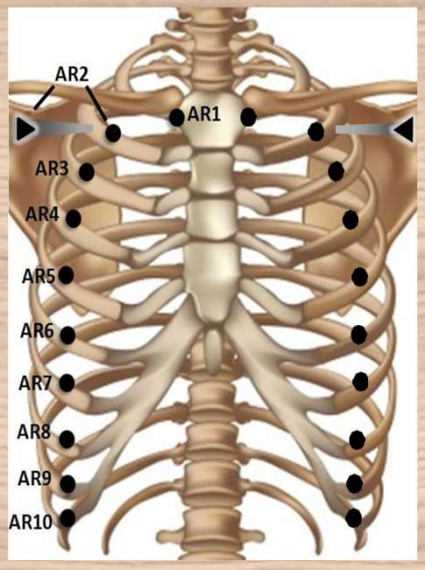
Osteopathic Structural Exam – Rib 1

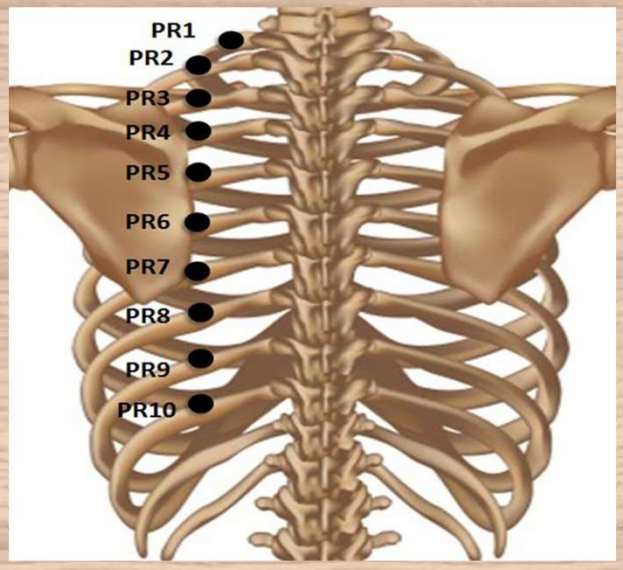
- Rib 1
  - Screen by putting the thumbs on the costotransverse articulations of each rib 1, note asymmetry and height and ask about tenderness.
  - Have the patient breathe, and diagnose based on whether the rib prefers motion with inhalation or exhalation.

DEMO

Rib 1 Treatment

- Muscle Energy
  - Hold at restrictive barrier, have patient push back towards neutral.
- Counterstrain
  - AR1: FSTRT
  - PR1: ESART

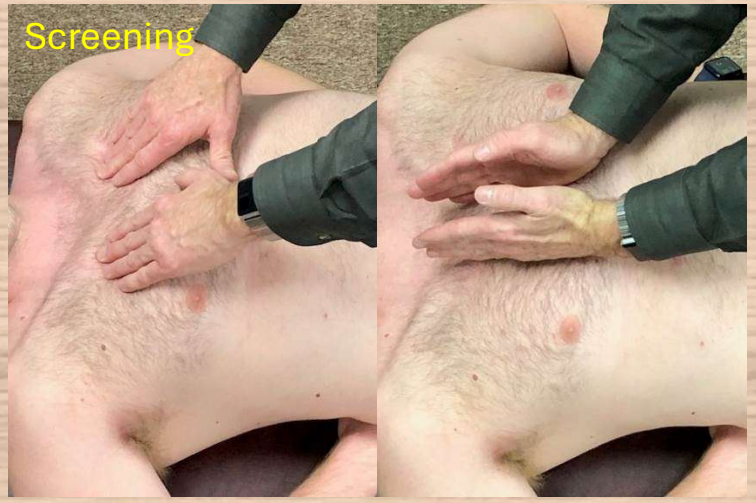




DEMO

Osteopathic Structural Exam - Ribs

- Upper ribs (Pump handle > Bucket handle)
  - Screen by springing Anterior to Posterior on Midclavicular line or just Medial to breast tissue.
  - Diagnose by putting finger pads on the restricted ribs and palpating while the patient takes a full breath to determine motion preference.



DEMO

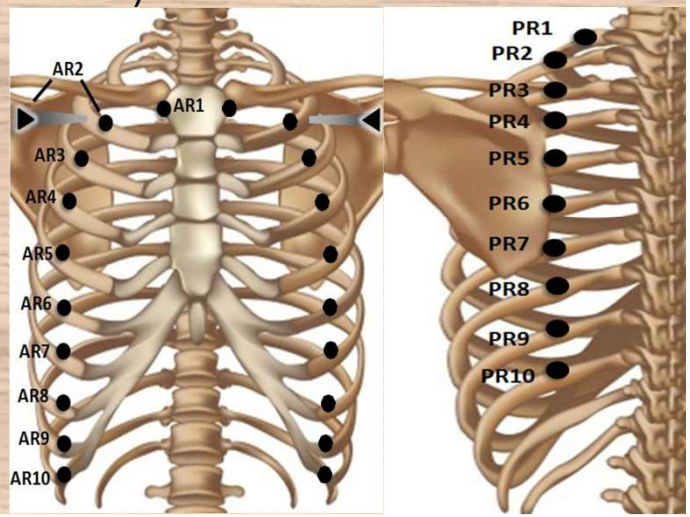
Osteopathic Structural Exam - Ribs

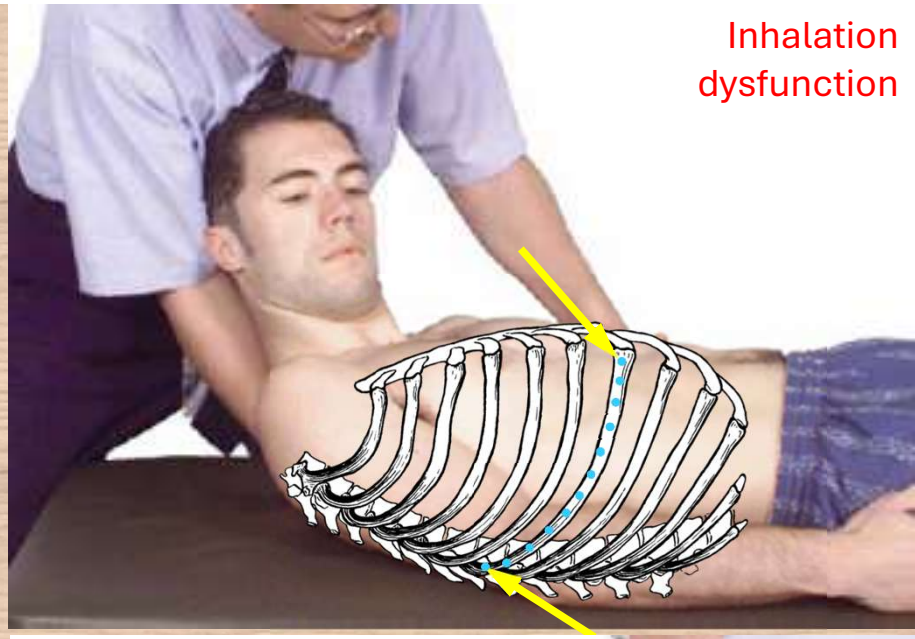
- Lower ribs (Bucket handle > Pump handle)
  - Screen by springing Lateral to Medial on the Midaxillary line.
  - Diagnose by putting finger pads on the restricted ribs and palpating while the patient takes a full breath to determine motion preference.

DEMO

Rib 2-10 Treatment

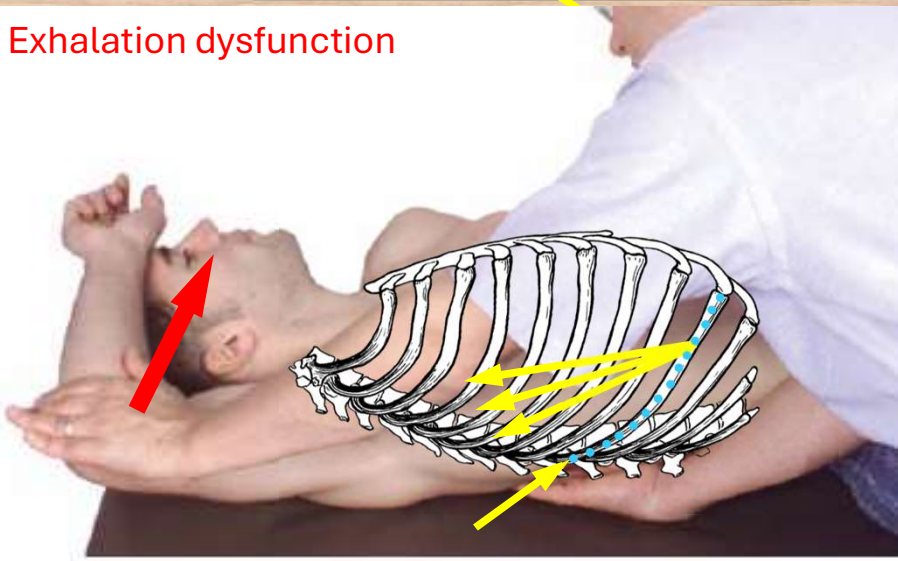
- Muscle Energy
  - Pump handle: Pt push elbow Anterior
  - Bucket handle: Pt push elbow towards
    - 3-5: Chest (Pec Minor)
    - 6-9: Umbilicus (Serratus Anterior)
    - 10-12: Hip (Lat dorsi)
- Counterstrain
  - AR2-10: FSTRT
  - PR2-10: SARA





Inhalation dysfunction

Exhalation dysfunction



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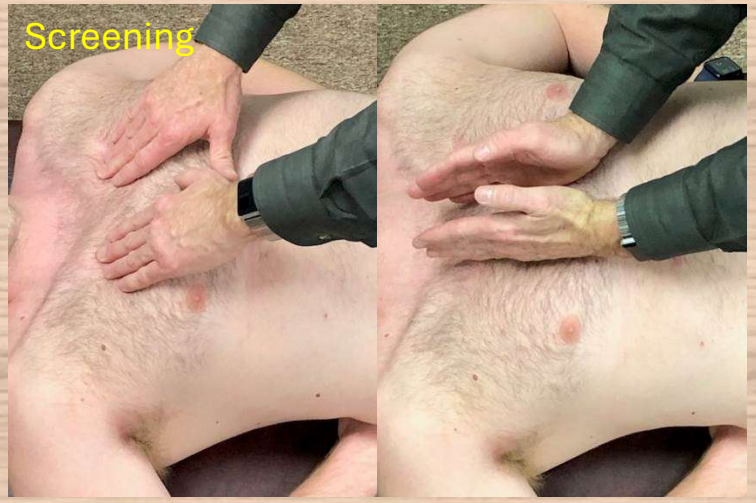
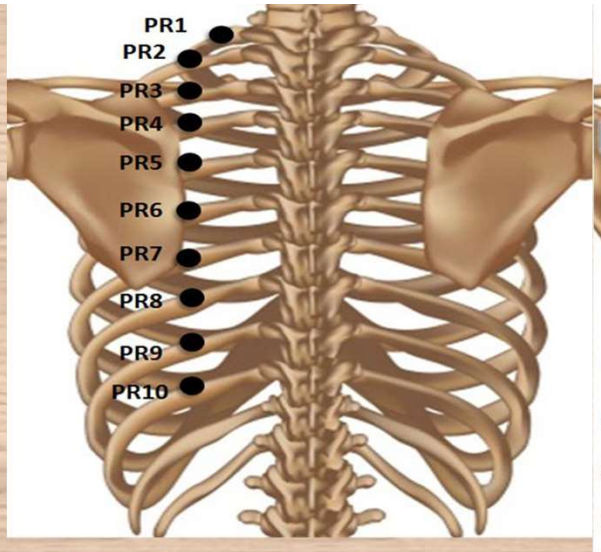


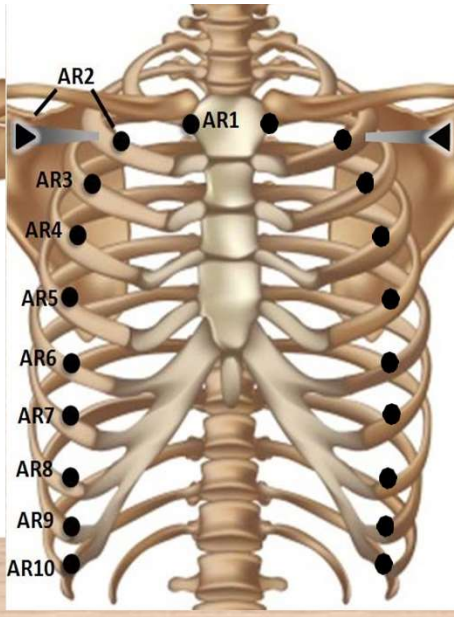
Osteopathic Structural Exam - Ribs

- Lower ribs (Bucket handle > Pump handle)
  - Screen by springing Lateral to Medial on the Midaxillary line.
  - Diagnose by putting finger pads on the restricted ribs and palpating while the patient takes a full breath to determine motion preference.

TREATMENT

Rib 2-10 Treatment





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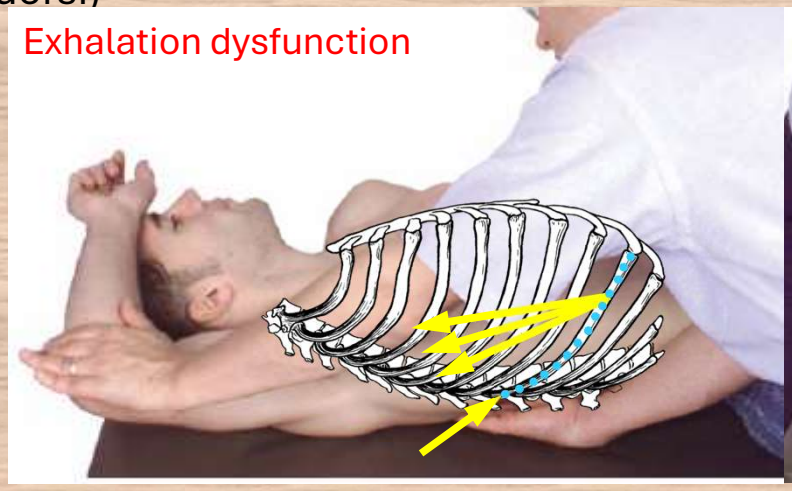
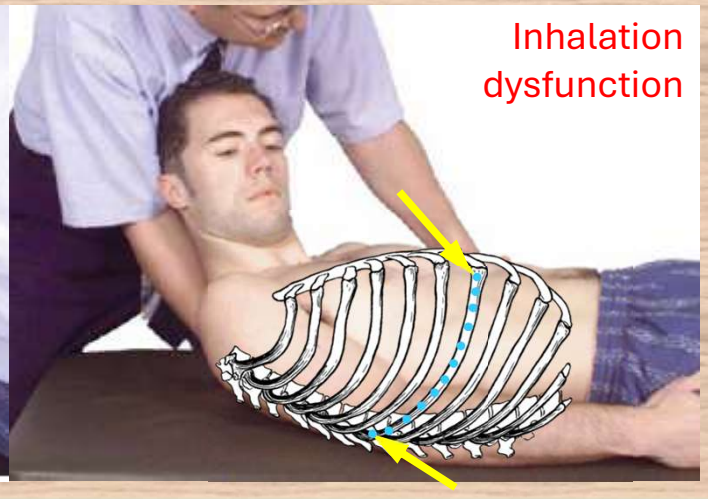
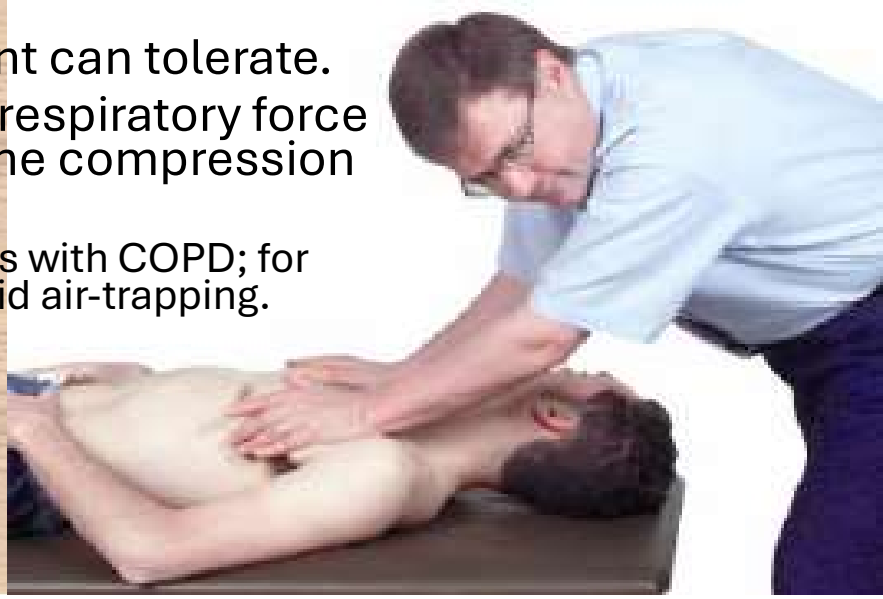




Thoracic Lymphatic Pump

- Put your palms on the patient's chest, just below the clavicles; or cross the patient's arms over their chest and use them as a contact
- Have the patient take a full breath with a full exhale
- During the exhale, apply gentle springing to the chest wall.
- Maintain compression while the patient inhales on another full breath.
- Repeat the cycle a few more times as the patient can tolerate.
- Early on the last inhalation, resist until enough respiratory force has accumulated, and then suddenly release the compression
  - This is useful when atelectasis is present
  - This quick-release is **CONTRAINDICATED** in patients with COPD; for them just slowly ease off on the compression to avoid air-trapping.



Pedal Pump

- Hold the patient's feet with your palms on the plantar surfaces.
- Apply a low-velocity, moderate-amplitude springing to the plantar aspects of the feet to induce a sloshing motion of the abdominal contents
  - Try to find a natural frequency instead of effecting movement with brute force.

Any Questions?

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Grievance Policy

All grievances should be in writing and should specify the nature of the grievance. Initially, all grievances should be directed to MAOPS Executive Director, who will then forward said grievance to the Education & Convention Committee. All grievances will receive an initial response in writing within 30 days of receipt. If the participant does not receive a satisfactory response, then they can then submit a complaint in writing to the Bureau of Osteopathic Education of the AOA at 142 East Ontario Street, Chicago, IL 60611.