

Neck Pain

Developed for OUCOM CORE
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Edited by ***Mindy Ford, DO*** and the
CORE Osteopathic Principles and Practices Committee

Series B – Session # 8: Cervical



- A 67 year old Caucasian right handed male presents to your office c/o of progressively worsening neck pain for the past few weeks. It is now 6/10. Pain radiates from the base of his neck to his left elbow accompanied with numbness and tingling sensation. He denies any recent trauma and OTC meds do not seem to help.

Structural examination:

C6-7 ERSI. There is a tender point located below the left clavicle lateral the manubrium. Cervical extension and sidebending reproduce the pain in the left arm.

Neuro exam:

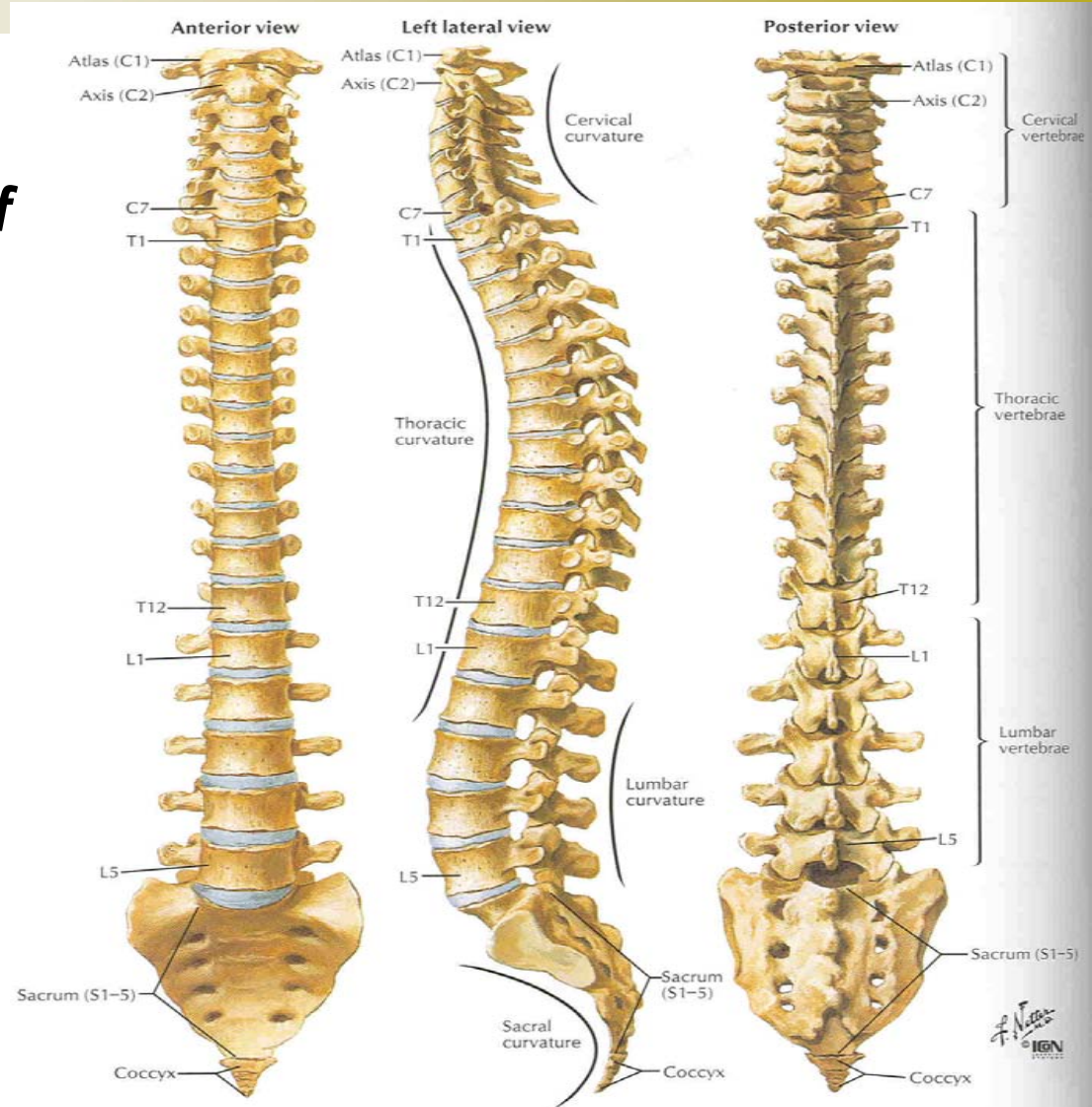
Left arm with diminished biceps reflex, and paresthesias over the thumb without evidence of muscle weakness.



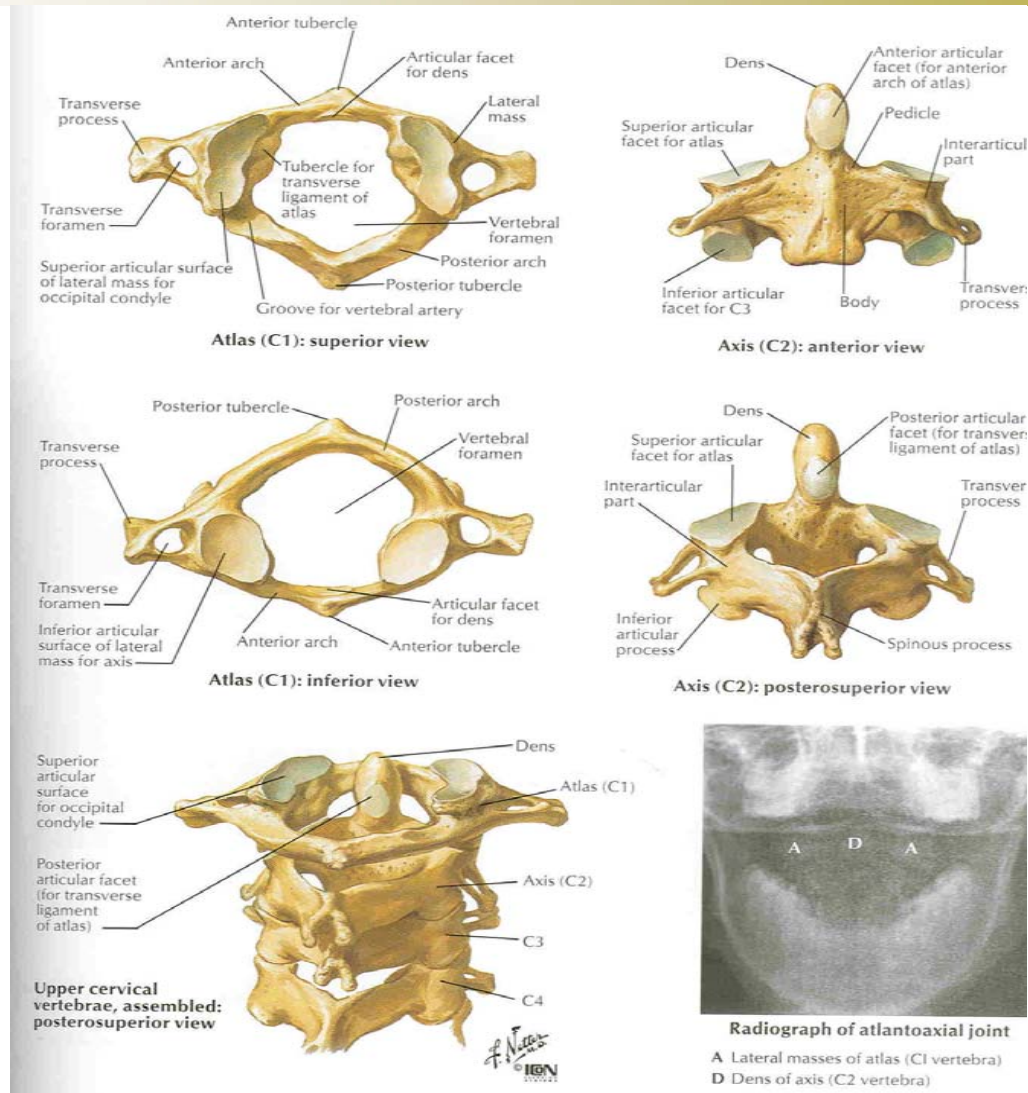
- Which cervical structure is most likely to cause the patient's decrease ROM?
- What is the most likely etiology of the patient's referred pain?

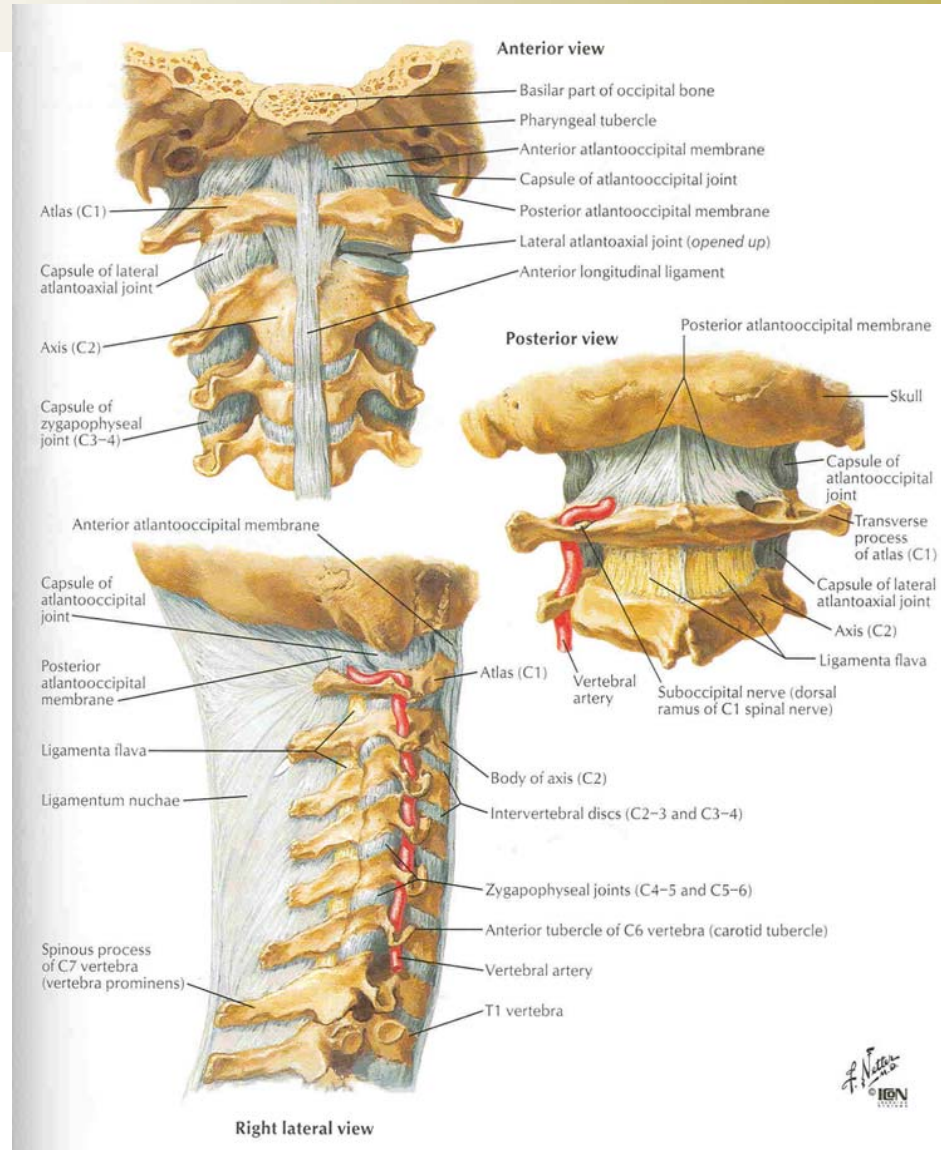


Look at the anatomy of the spine, particularly the cervical spine and its network -



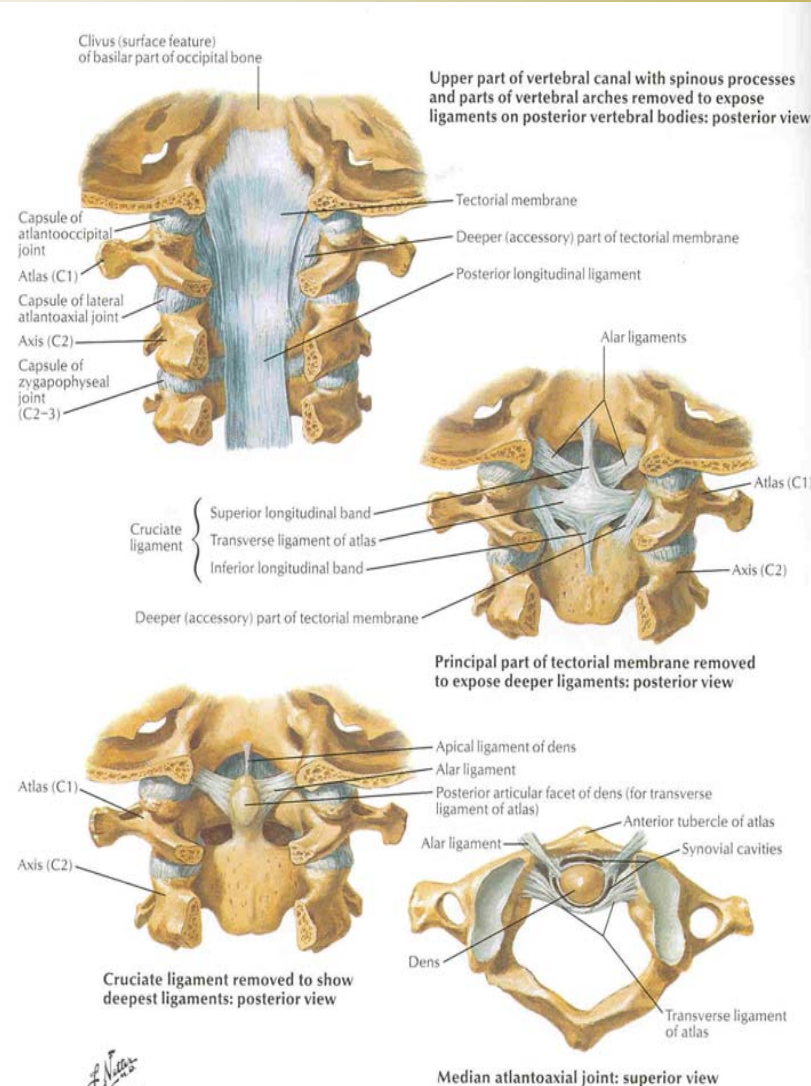
Cervical Vertebra





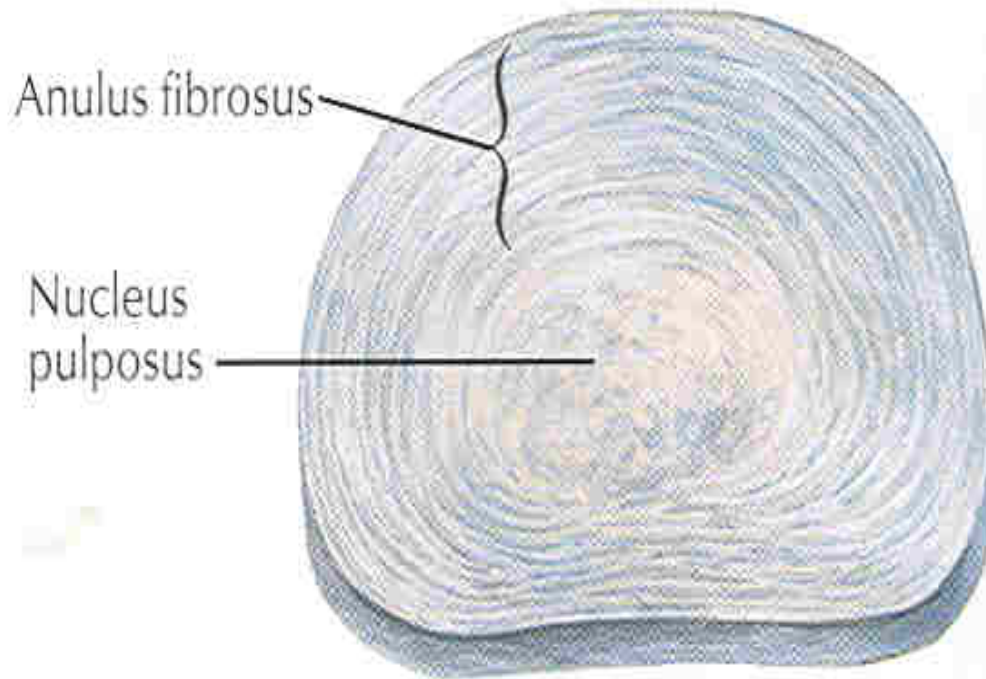
F. Netter M.D. © IGM 2002





F. Netter M.D.
© 1904





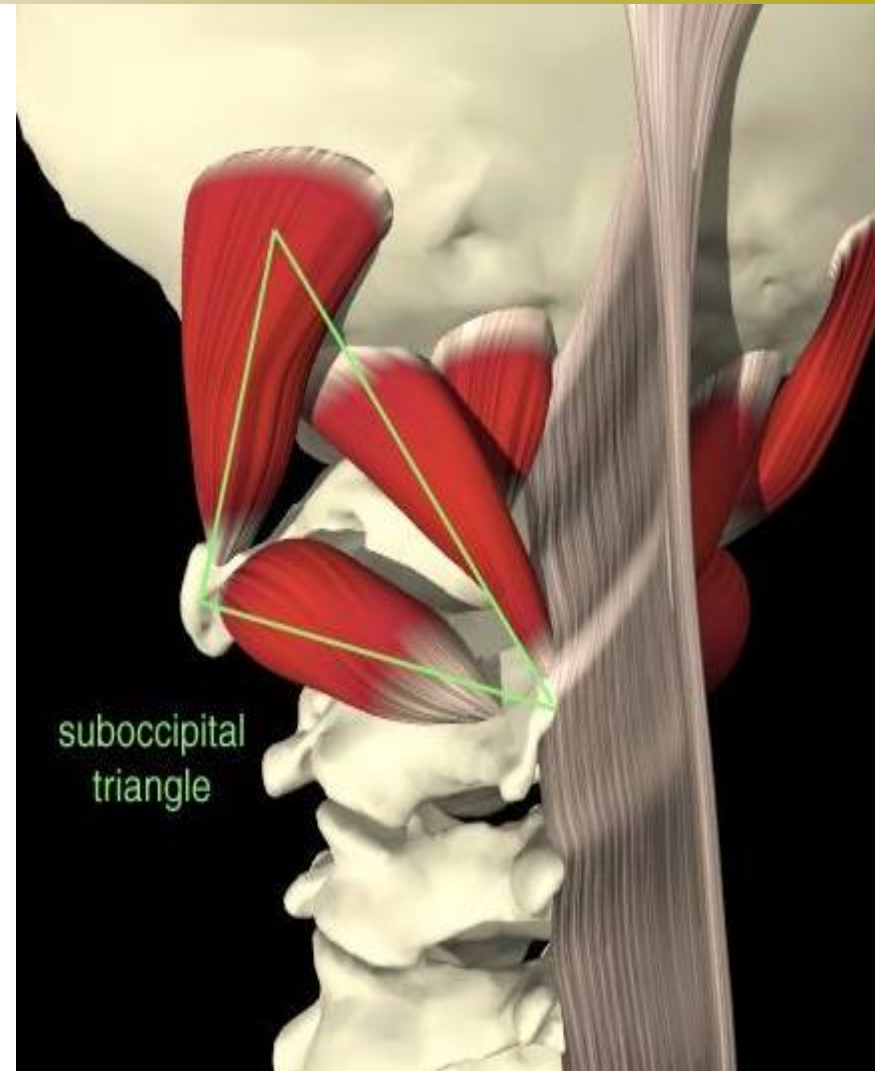
Intervertebral disc

Netter FH. Atlas of Human Anatomy. 3rd ed. 2003. Icon Learning Systems



Suboccipital muscles:

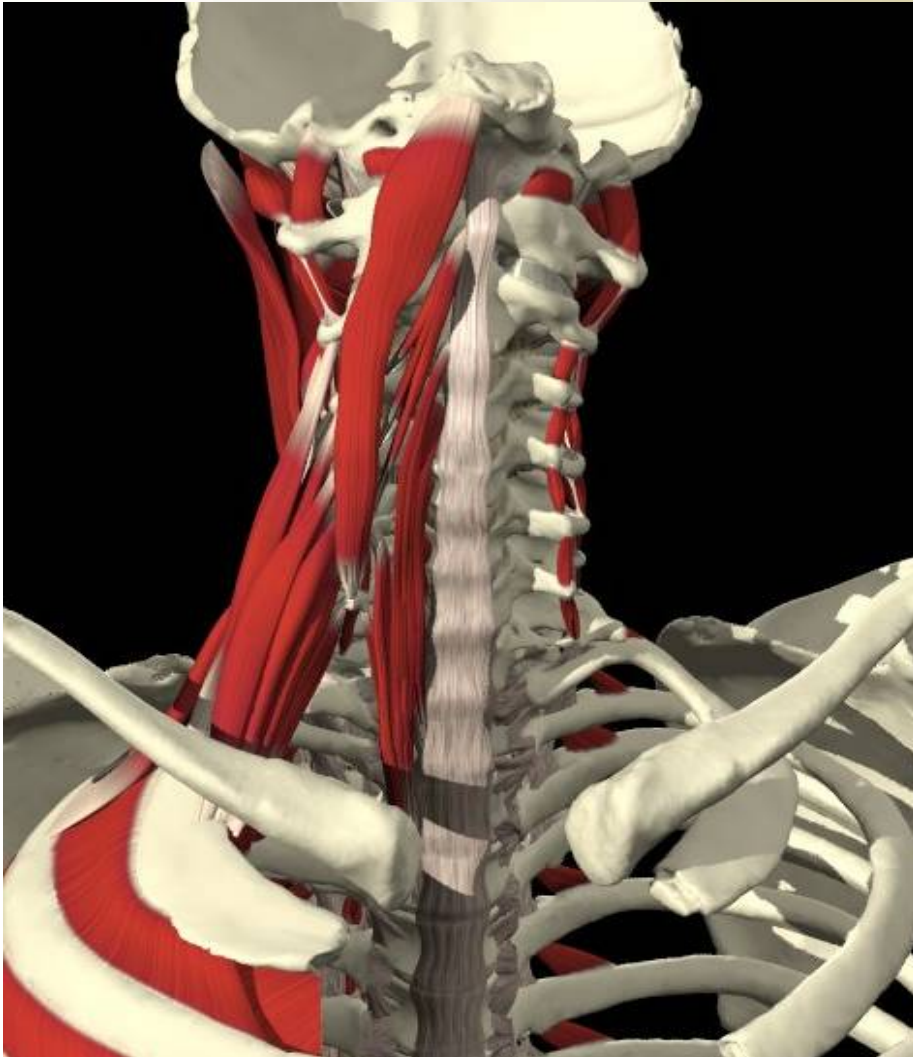
- Obliquus capitus superior
- Obliquus capitus inferior
- Rectus capitus posterior major



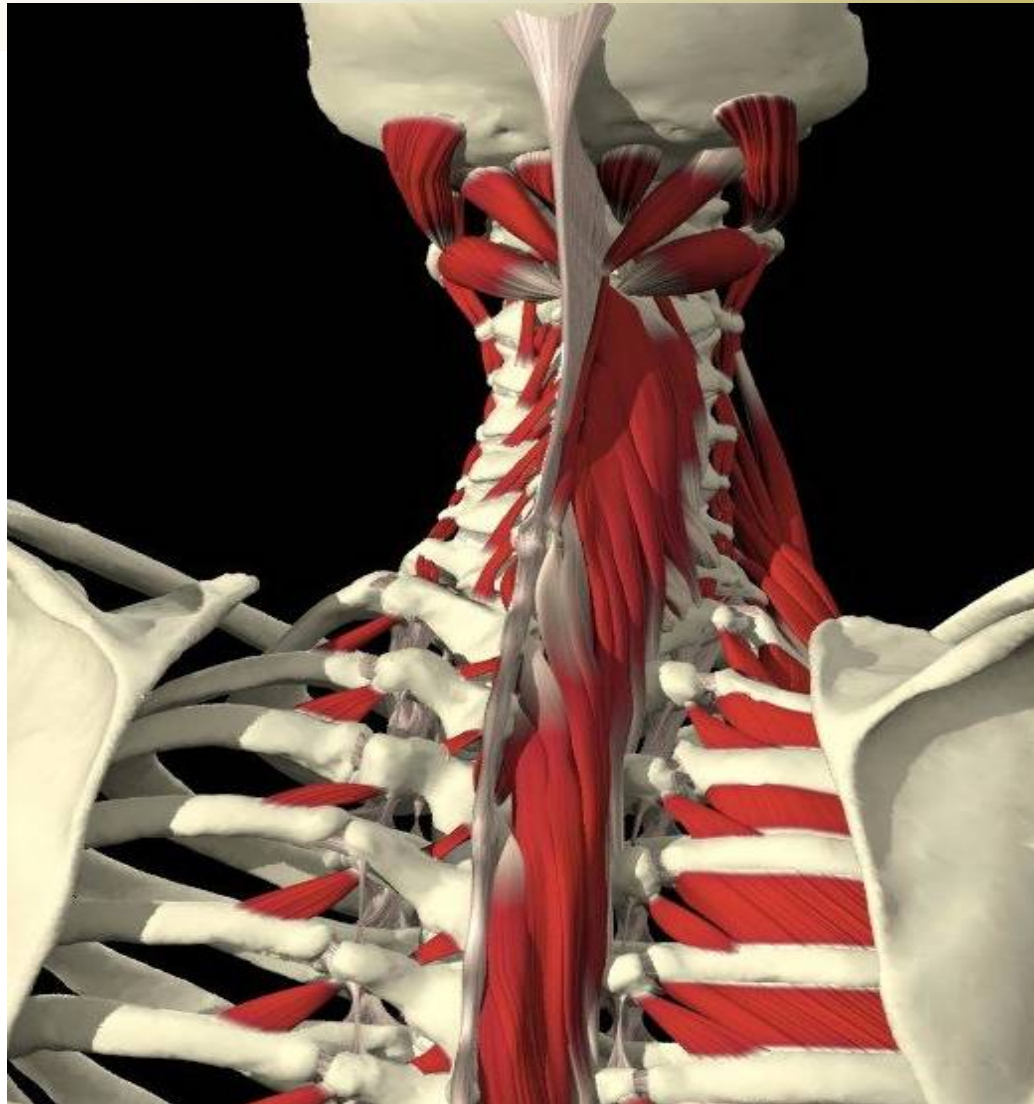
Primal Pictures Interactive Spine CD



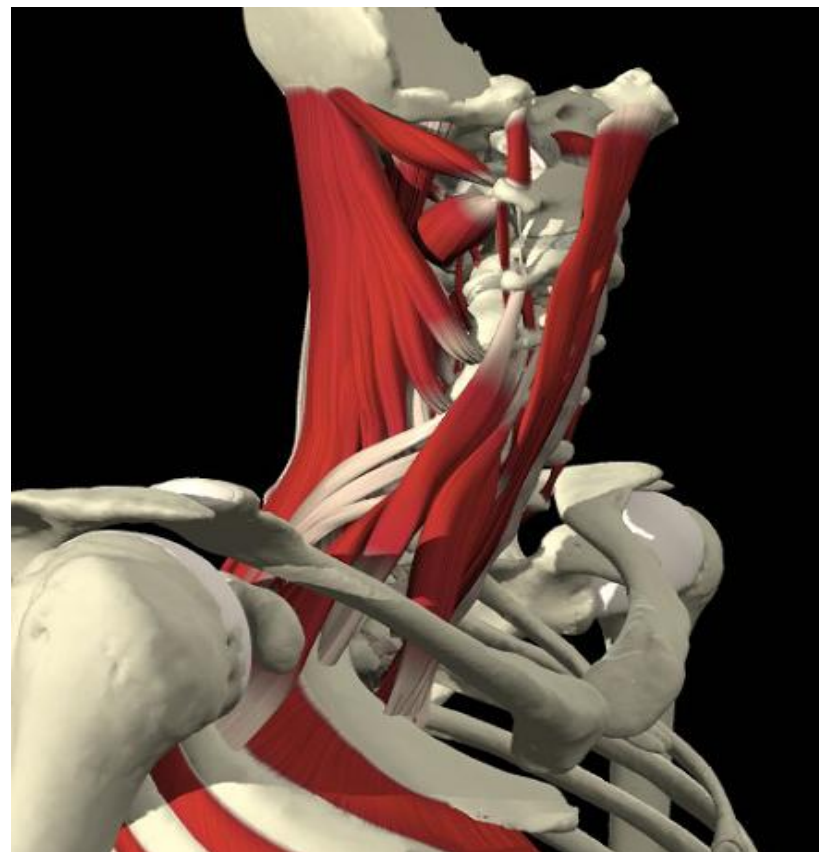
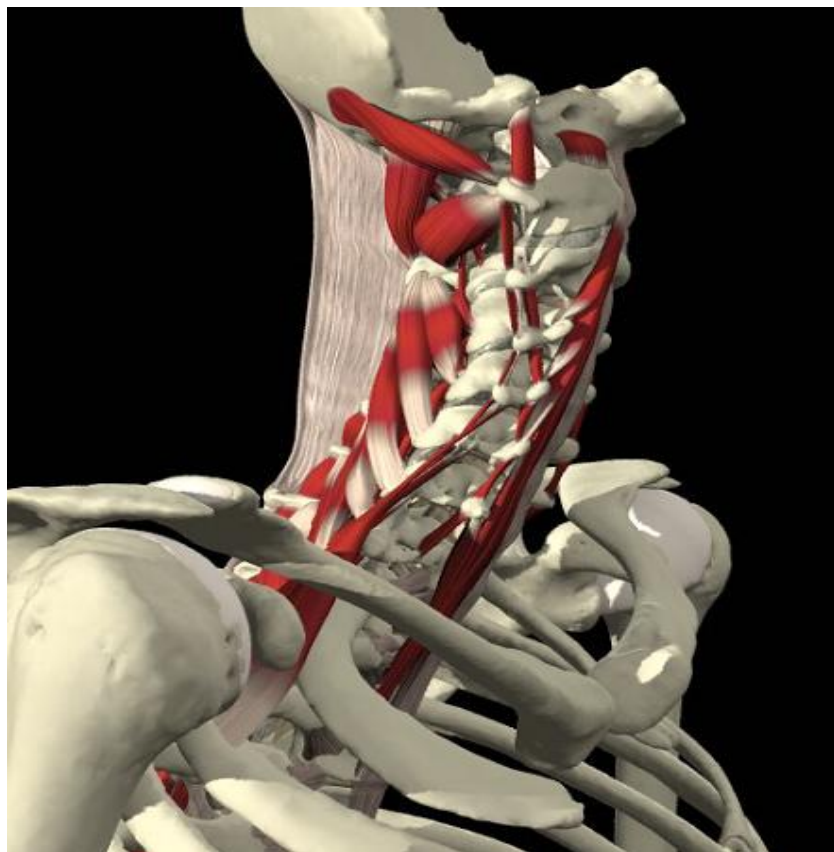
Deep Anterior Muscles



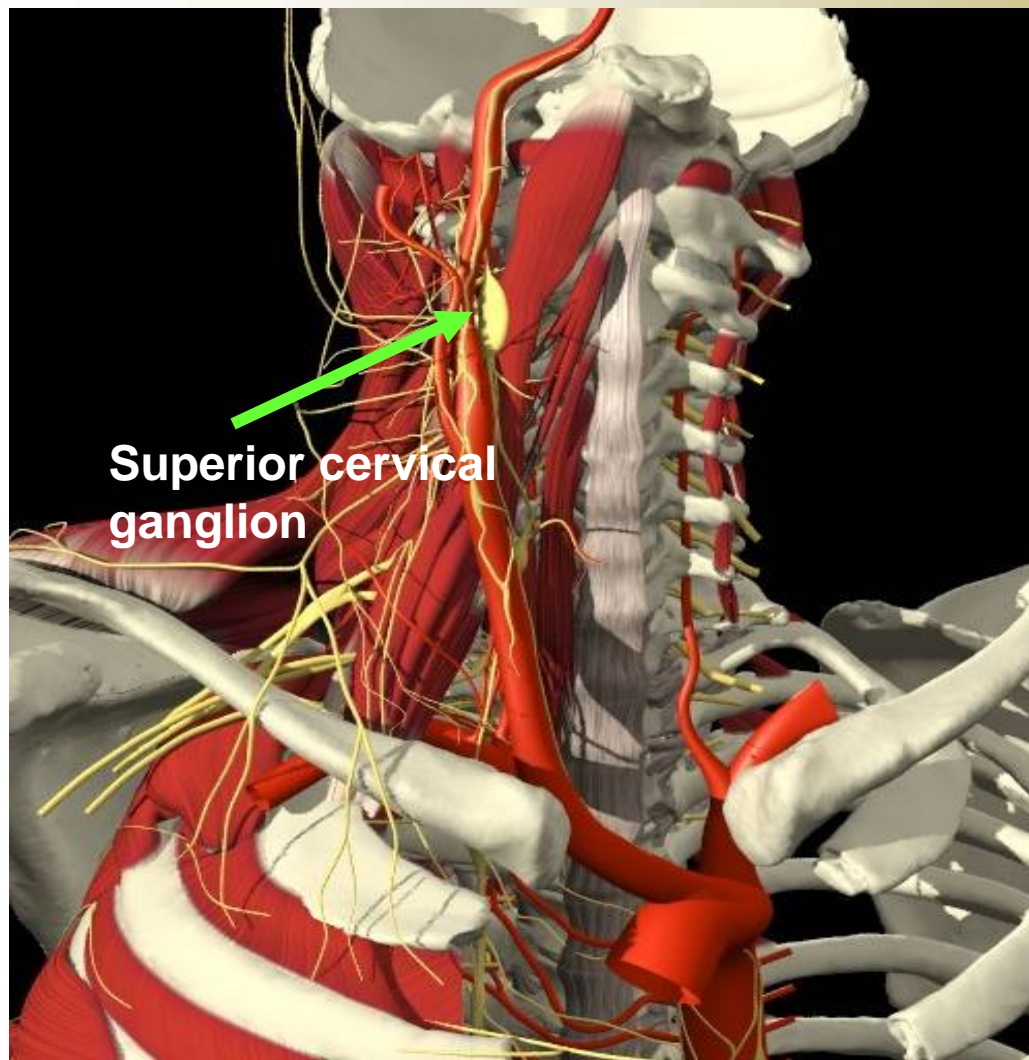
Deep Posterior Muscles



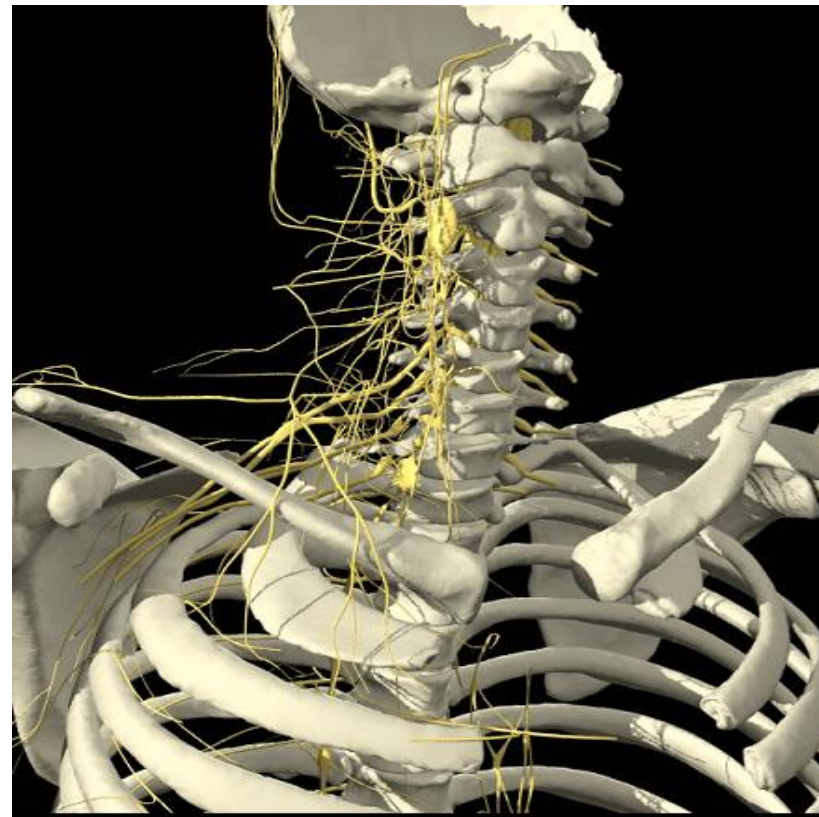
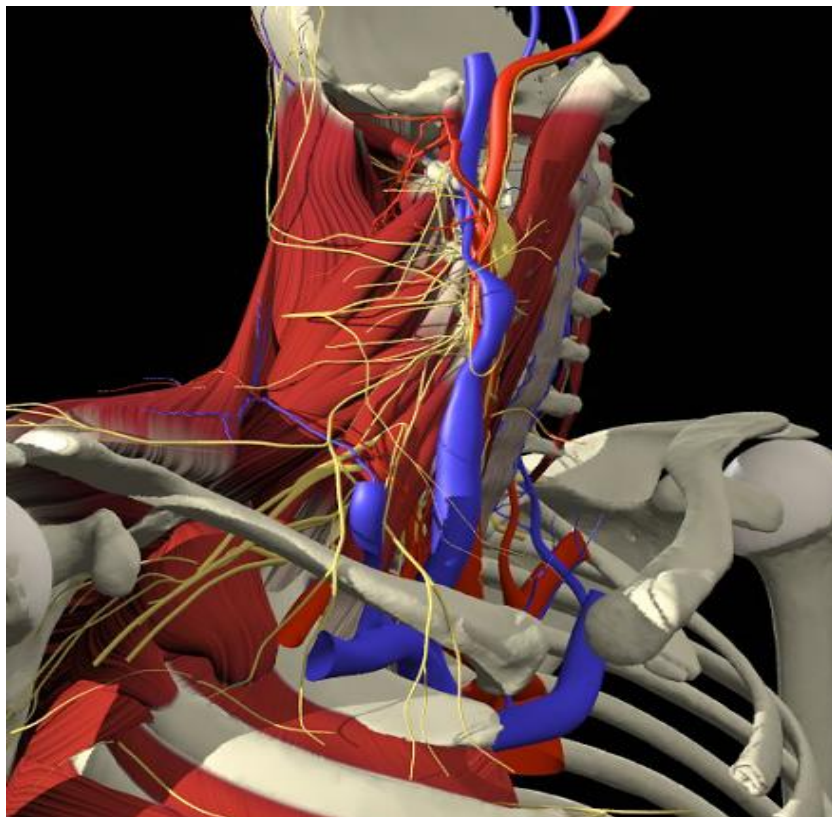
Cervical & upper rib functional relationship, each affects the other via these scalene muscles



Sympathetic Relationships in the Cervical Region



**Dysfunction in cervical, rib & upper extremity regions
can influence neural & vascular elements**



Labs

Plain films

- AP, lateral, open mouth (peg view) if suspicious of trauma.
- Check for Alignment.
- Around 20% of serious injuries are missed with plain films.

CT

- If high suspicion of boney abnormality
- If plain film is non-diagnostic

MRI

- If suspecting a ligamentous or disc injury



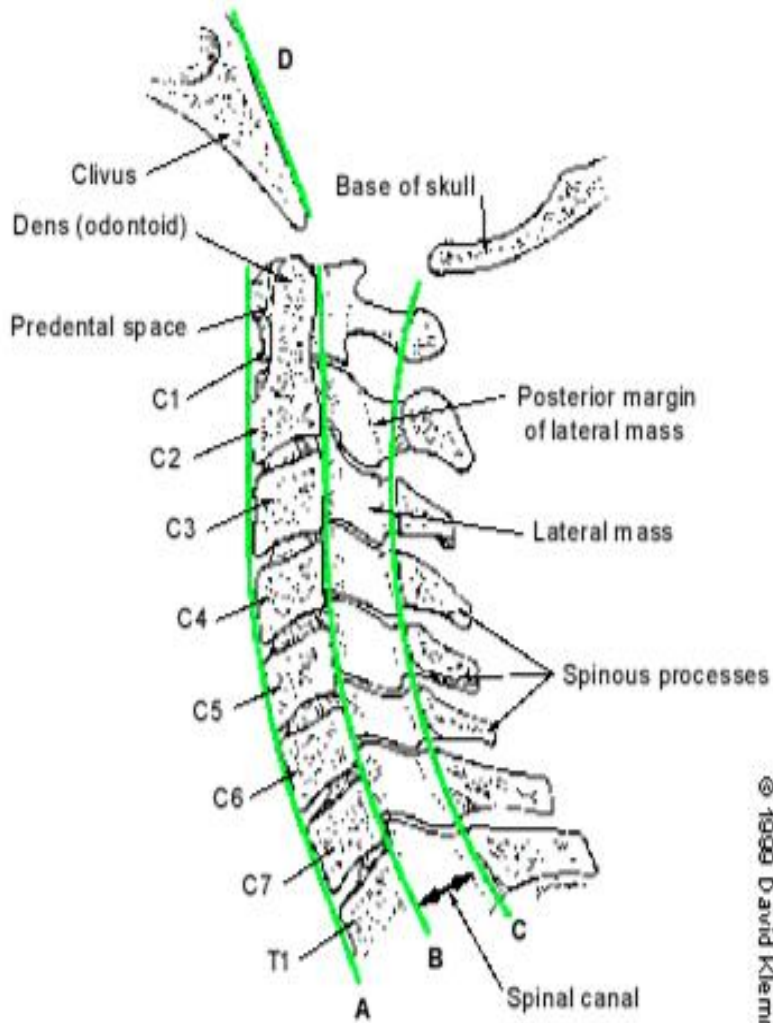


INTEGRATE:

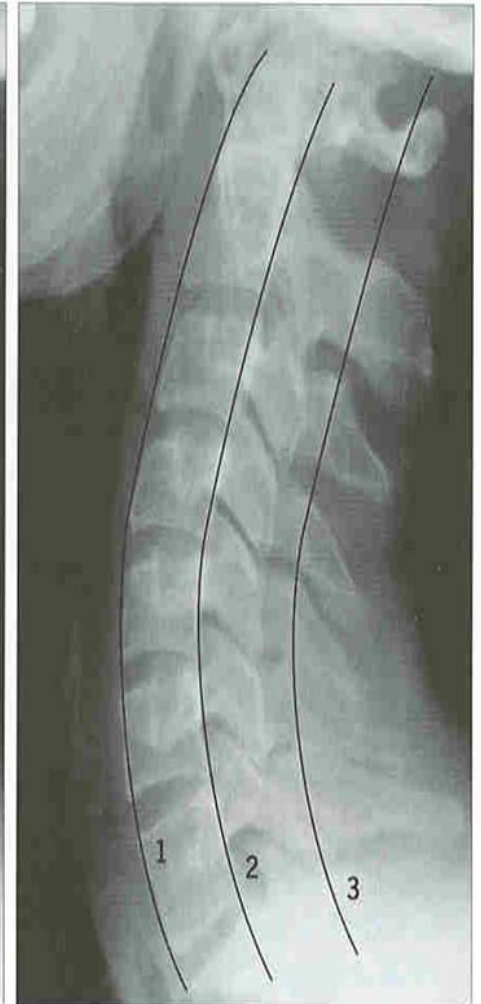
Orthopedic
Neurologic
&
Structural
EXAMS



Cervical Alignment



© 1999 David Klemm



- Facet joints support 1/3 weight of head
- Bodies articulate through intervertebral disc and synovial joints
- Sidebending and rotation to same side



Note: *Always* rule out trauma as an etiology in a pt c/o neck pain.

- Assuming that significant pathology is ruled out, there are a variety of treatment options you can choose, and they can be used either alone or in combination, when treating cervical somatic dysfunction.



- Lymphatic inlet/outlet opening techniques
- Myofascial release
- Counterstrain
- Balanced Ligamentous Tension
- Facilitated positional release
- Still technique
- Muscle energy
- HVLA
- Chapman reflex technique
- Rib raising---to normalize the sympathetics
- Occipital release---to normalize the parasympathetics



- HVLA for C4-7 typically uses a side-bending focus, whereas C2-3 uses a rotational emphasis.
- Since patient here has a lesion at C6 and C7 we will be reviewing side bending focus.
- Stand at the head of the bed, contact the articular pillars of C6 with the lateral sides of the index fingers.
- Lift the patient's head to flex the segments below C6, then rotate the head to the right until you reach the restrictive barrier.





- The head is then rotated to the left to lock out the third plane of motion.
- Remember that though this seems backwards, because the dysfunction is ESRI, the rotation component is only to stabilize and lock out the vertebra so that the thrust is localized and can address the side-bending component.
- Treating any one motion will effect the others.
- A directed thrust is then applied to the articular pillar.

Kimberly, PE; Outline of Osteopathic Manipulative Procedures. Millennium Edition. 2000. Walsworth Publishing Company. p79



Cervical HVLA Contraindications

In what situations would you **not** do HVLA to the neck?

- Cervical instability
- Down's Syndrome (Due to instability of the OA joint)
- Severe arthritis
- Patient request
- Inability of the patient to relax his/her neck



Counterstrain for the Lower C-spine



FIGURE 63.5. From Bennie CR, Glover JC, Gervelle L, et al. *Counterstrain and Exercise: An Integrated Approach*. Williston, VT: Benne/Actrix; 2001. With permission.

- Identify the tender point on the posterior elements of C6-7
- Position the patient in a SARA (side bent away, rotated away) position from the side of the tenderpoint
- Confirm that pain is decreased to a maximum of 3/10
- Hold for 90 seconds
- Slowly return to neutral and recheck

Ward, RC. Foundations for Osteopathic Medicine. 2nd ed. 2003. Lippincott, Williams and Wilkins. p1009

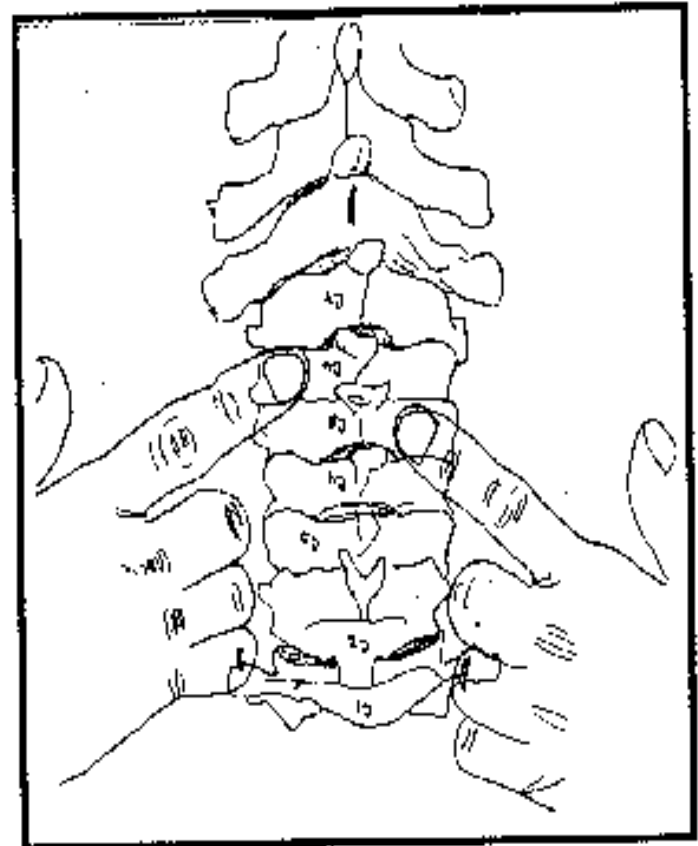


Balanced Ligamentous Tension

- The basis of this technique is simply to take the segment to the position of ease in all planes and to let the patient's breath be the activating force to release the area.
- Have the patient lay supine and contact the articular pillars of C6.
- Rotate the vertebra to the position of ease by putting gentle pressure on the lateral mass of the vertebra on the right to rotate the vertebra to the left.
- Translate the vertebra to the right to also induce left sidebending.
- Only move the vertebra far enough in each direction to get the point of ligamentous ease.



Balanced Ligamentous Tension – cont.



Ward, RC. Foundations for Osteopathic Medicine. 2nd ed. 2003. Lippincott, Williams and Wilkins. p929



Once you have the patient positioned in ease, you may wait for their normal respirations to release the dysfunction.

- However, for those of you in a hurry you can speed things up a bit:
 - Have the patient inhale and exhale deeply one or two times. Be careful to notice which phase of respiration made the dysfunctional segment even more at ease.
 - Have the patient then hold their breath in the phase that was determined to be the most ease.
 - Air hunger will soon kick in and the segment will release.



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