



Tech Neck

The Causes and Implications of Tech Neck

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What is Tech Neck?



- Basic Anatomical Structures
- How does it present itself?
- Who does it effect you?
- How can you prevent and treat symptoms?



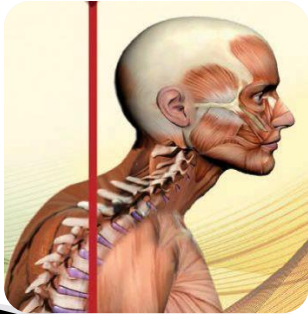
What is Tech Neck?



Neck pain caused from forward head posture and spending too much time in a flexed cervical spine position



Tech neck often becomes symptomatic in individuals who display poor posture while using the computer or smartphones



As a result, premature aging of the neck can occur

What is Tech Neck?

- ▶ Tech Neck is a relatively new condition
- ▶ The prevalence of tech neck is increasing dramatically due to new technology





Tech Neck Can Effect Everyone

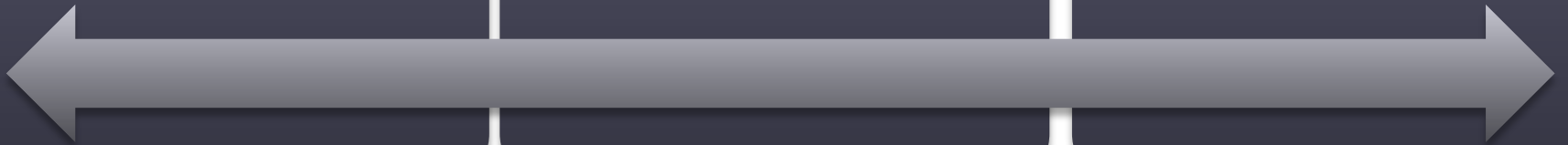


Tech Neck is beginning at a young age due to the advancements in technology

It is effecting those who primarily work at a desktop computer



If not addressed it will effect individuals for the rest of their lives



Problems From Tech Neck

- Strained neck muscles
- weak neck muscles



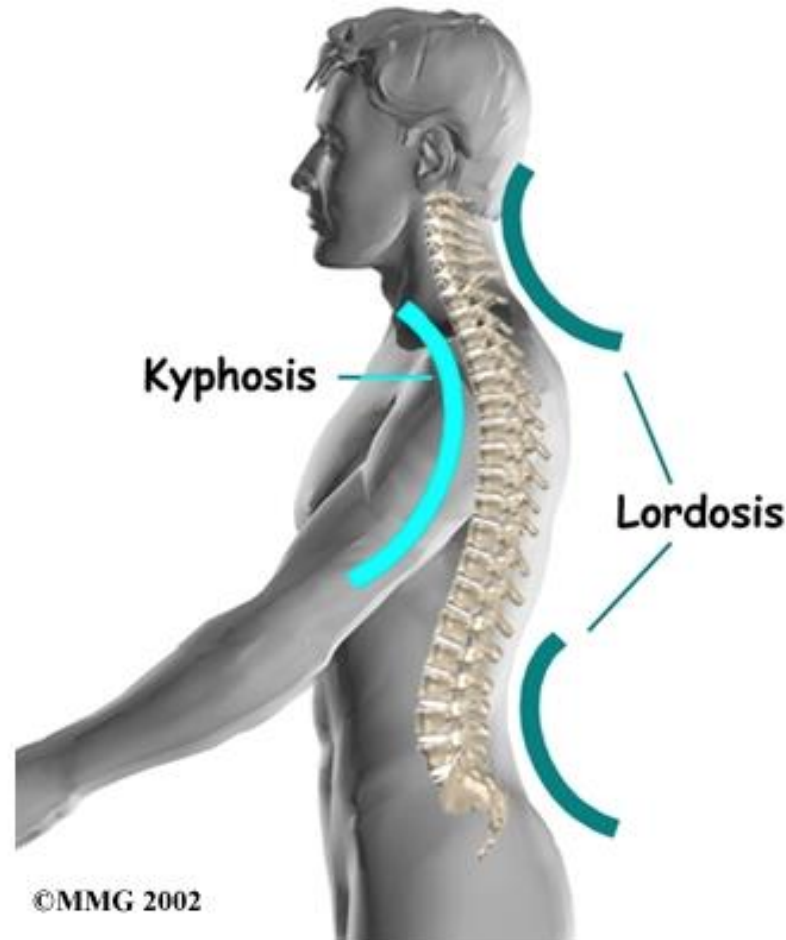
- Chronic neck pain
- Inability to hold neck in the proper posture

- HNP (Herniated nucleus pulposus) or bulging discs

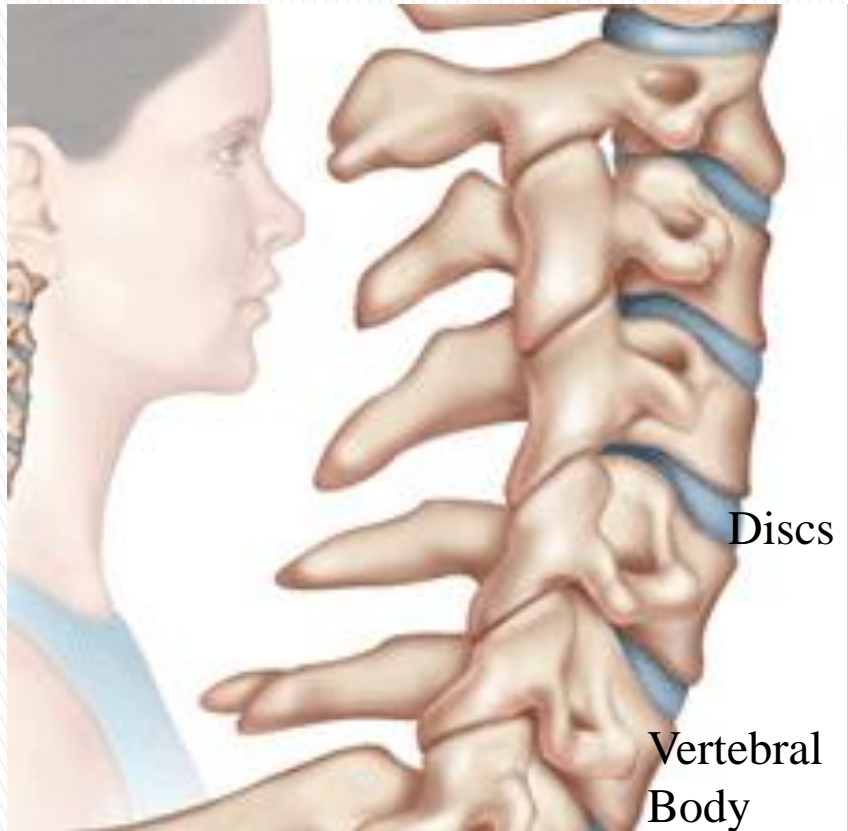


- Nerve problems
- Radiating pain
- Numbness and Tingling
- Radicular symptoms in cervical spine along with arms and hands

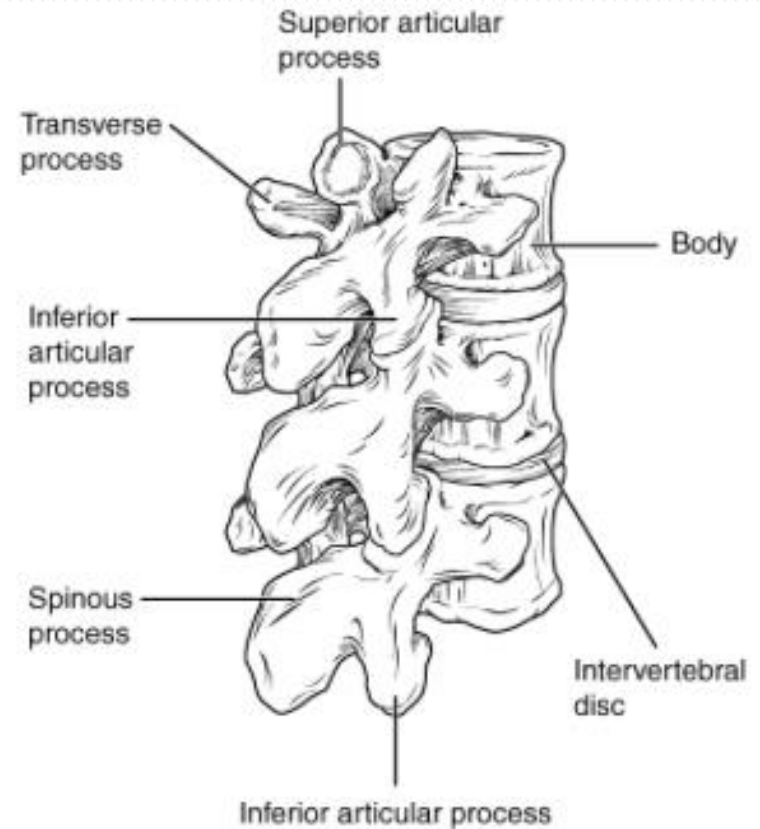
The cervical spine is meant to have a slight lordotic curve



Anatomy of the Spine



Cervical Spine

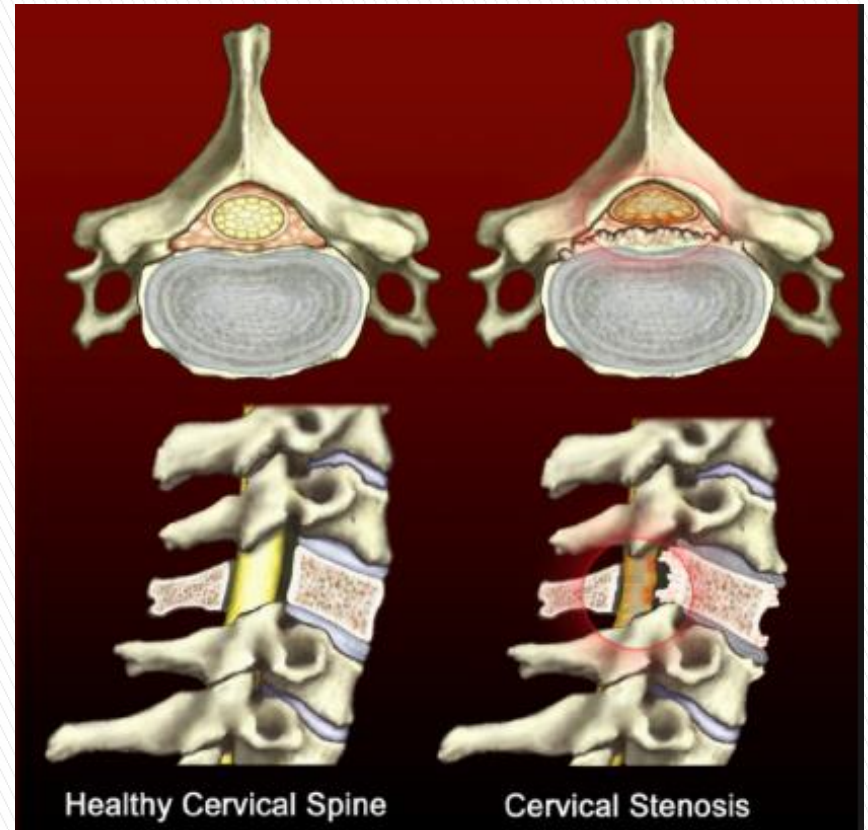
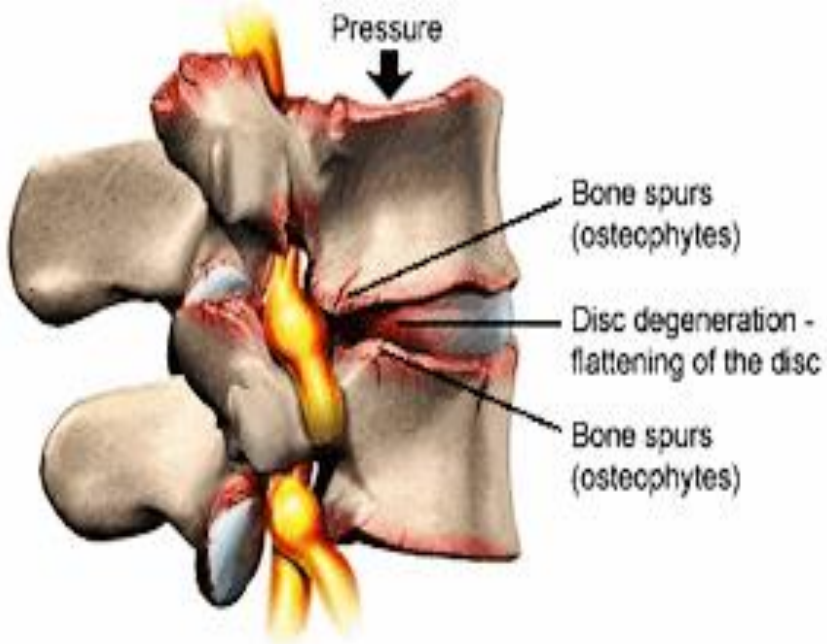


Lumbar Spine

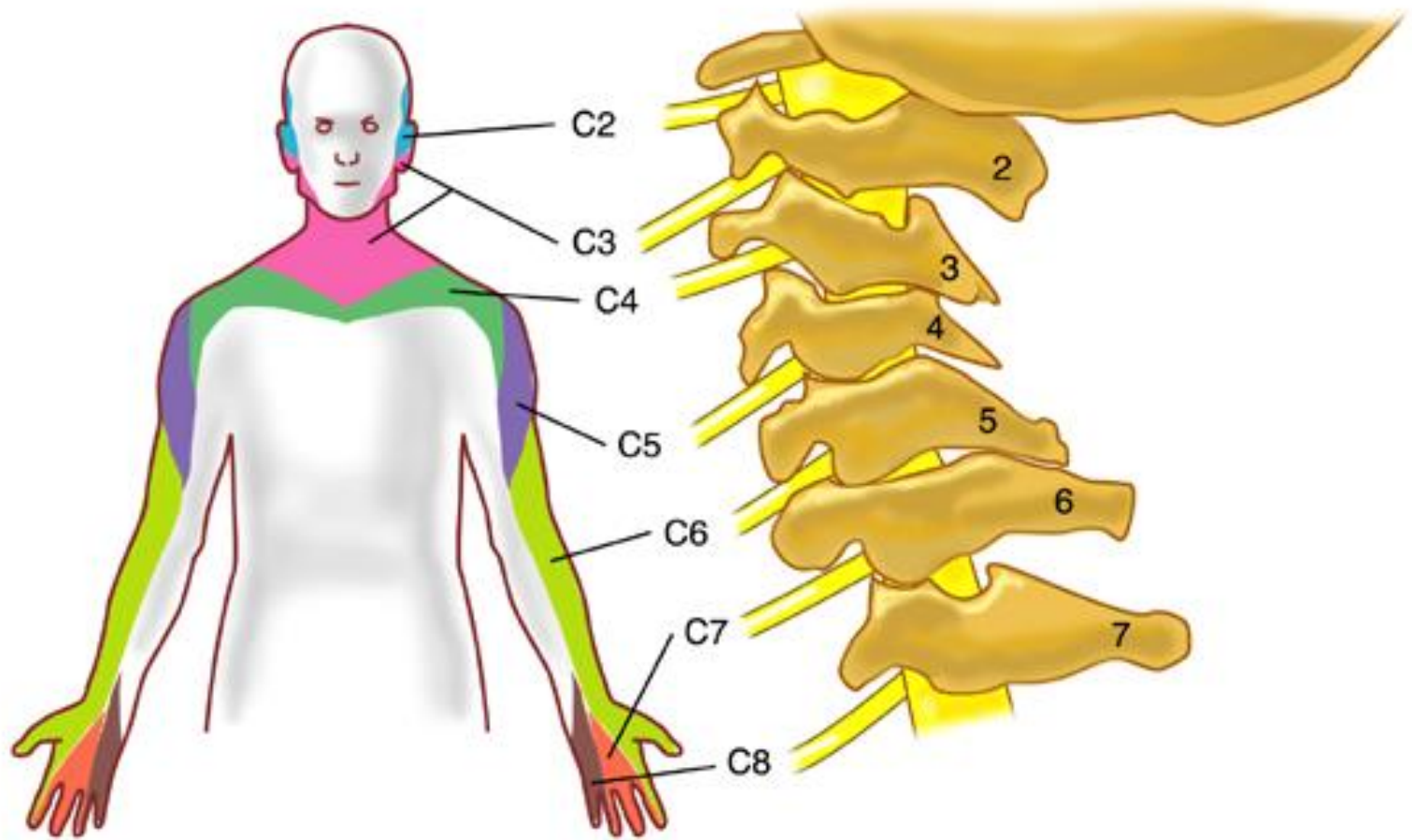


The Cervical Spine is not made to carry heavy loads >>>
For every 5 degrees of flexion the weight on the head increases by a factor of 3

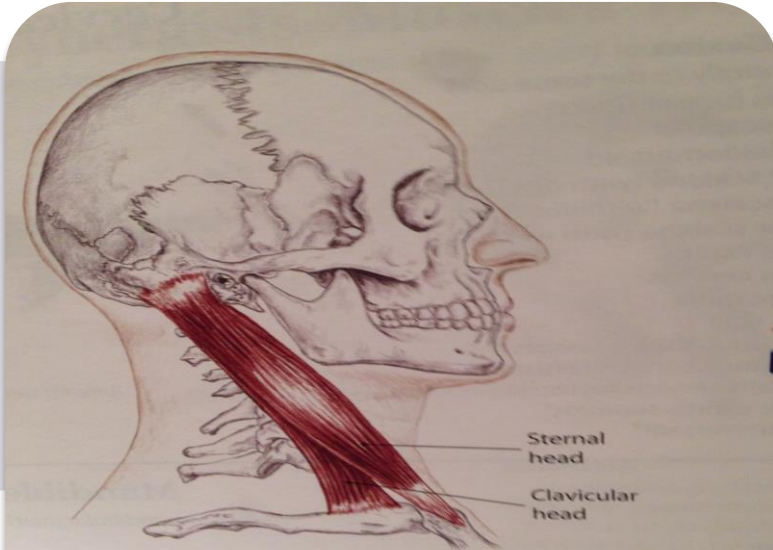
Degenerative Disc Disease and Spinal Stenosis



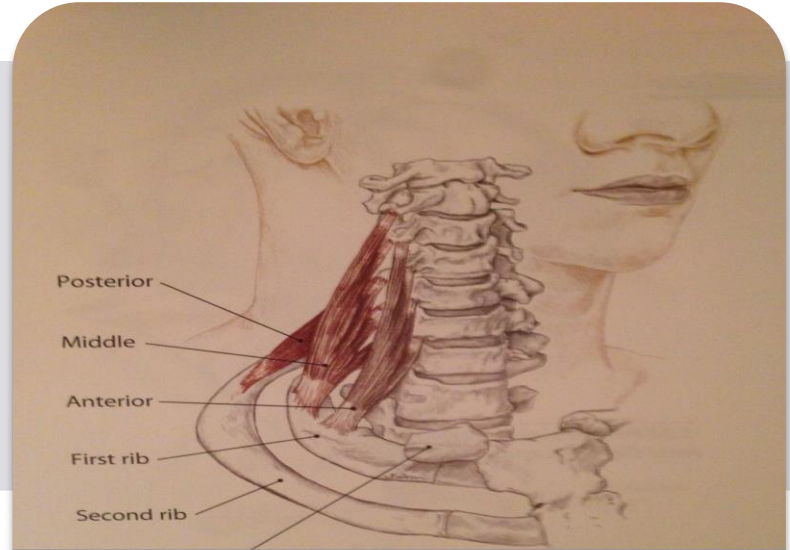
Anatomy



Muscles of the Cervical Spine

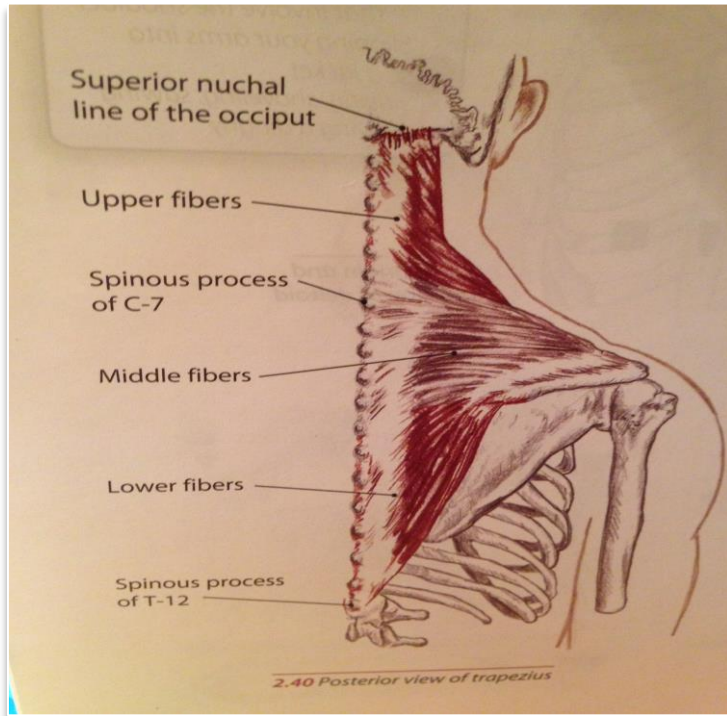


The SCM laterally flexes the head to the same side, rotates to the opposite, and bilaterally flexes the head forward



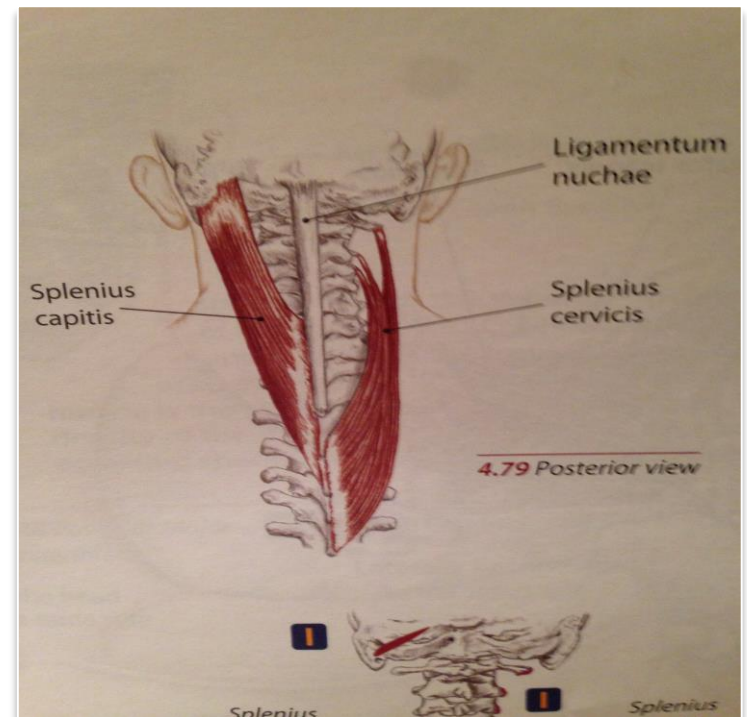
The Scalenes laterally flex the head to the same side, bilaterally cause forward flexion and rotate the head and neck to the contralateral side

Muscles of the Cervical Spine

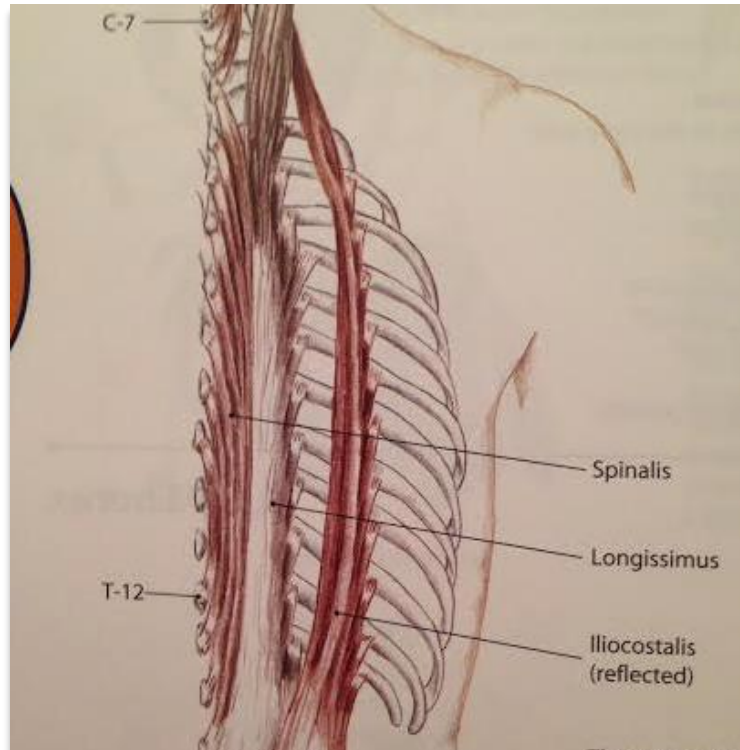


The Paraspinal muscles bilaterally extend the neck and head

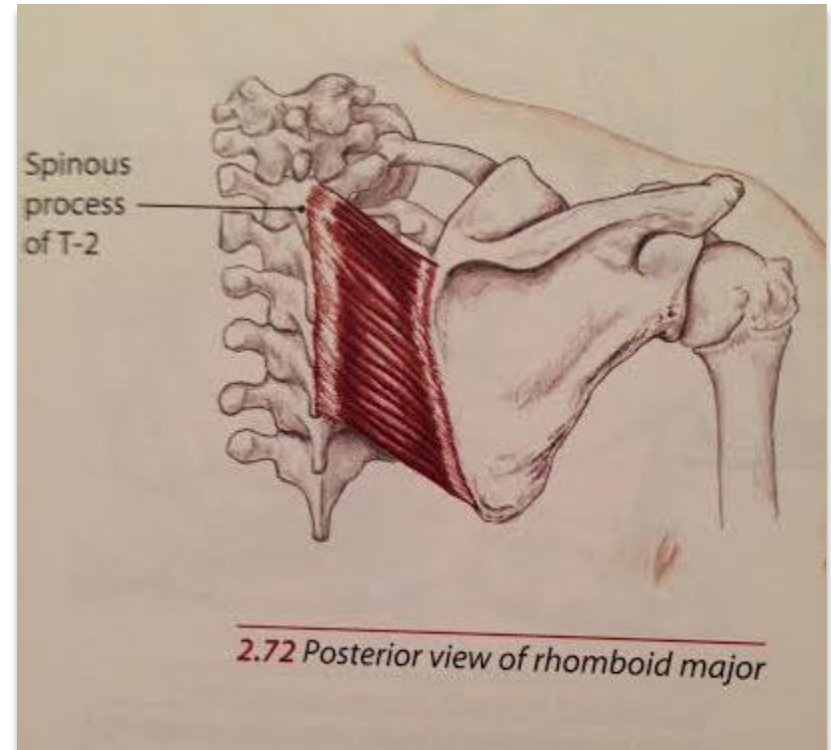
The upper traps when fired bilaterally, extend the neck and head



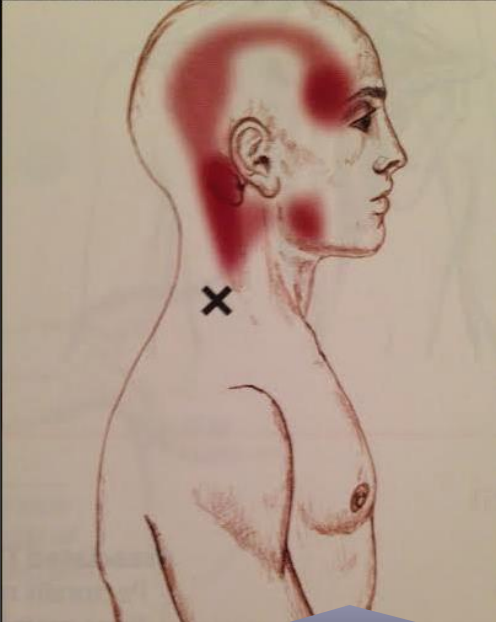
Thoracic Muscles



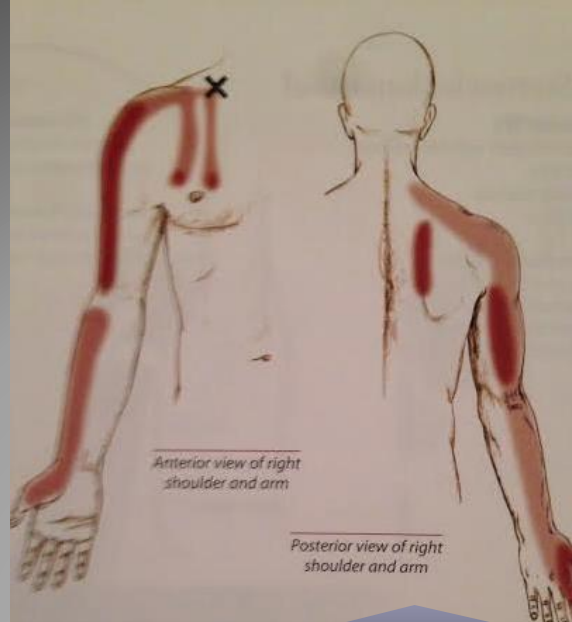
Erector Spinae Group is responsible for extension of the vertebral column



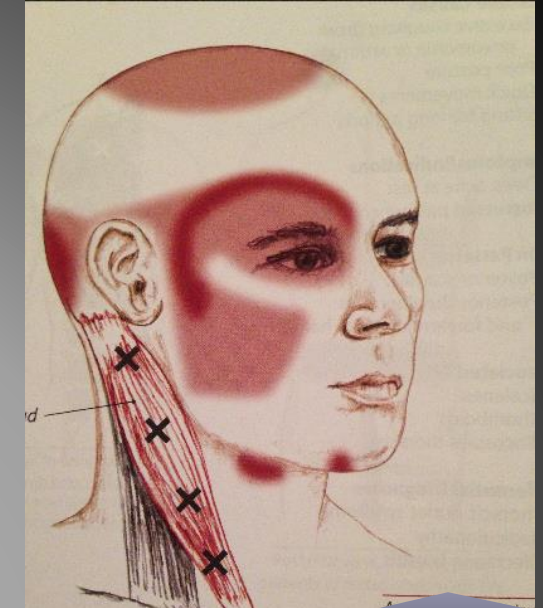
Rhomboids adduct the shoulder blade (scapula). Rhomboids also elevate and downwardly rotate the shoulder blade (scapula)



Upper Trapezius



Scalenes



Sternocleidomastoid



Rhomboid

Trigger Points »

“hyperirritable spots in skeletal muscles”
When compressed a referred pain is often elicited

Causes of Tech Neck



1. Poor posture
2. Excessive neck flexion, excessive kyphotic posture, scapular protraction
3. Texting, staring at a computer, gaming, general lack of movement
4. Looking at a computer for a significant part of the day
5. At work people have many opportunities to look down, moving into bad posture

Causes of Tech Neck – What the Research says



Sitting for more than 95% of the work day = 2x higher of risk for neck pain



Bad posture causes a continuous load on the neck causing pain and radicular symptoms

Good Posture:



- 1) Ears aligned with the shoulders
- 2) Shoulder blades (Scapulae) retracted by being pulled back and squeezed together

Bad Posture:



- 1) Ears are aligned in front of shoulders with neck looking down (flexed positioning)
- 2) Shoulders are slumped and/or rounded forward
- 3) Shoulder Blades (Scapulae) are not retracted

Prevention



Correct Postural Training



Correct Sitting Posture >>

Prevention



Keep Good Posture
Throughout The Day

Desk Stretches



1. Pull shoulders up and back for 5 seconds.



2. Move head slowly up to look at the ceiling. Hold for 5 seconds.



Roll head down, tucking chin to chest. Hold 5 seconds.



3. Grasp hand and hold fingers with other hand. Slowly bend your wrist down and then up for 5 seconds. Repeat several times.

Take Micro breaks and Stretch
at work

Prevention

- ▶ It is also important to remember every generation is at risk
- ▶ Promote good posture with children at a young age
- ▶ Prevention is key!



Prevention

- ▶ Are you sitting correctly at work?
- ▶ If you have symptoms of Tech Neck, visit the OHF for an evaluation
- ▶ Contact your safety officer for an ergonomic evaluation of your work space
- ▶ OHF Evaluation: 867-3346
- ▶ Self-Check
 - Matt Middlesworth-Ergonomics Plus
 - <http://ergo-plus.com/about/matt-middlesworth/>



Treatment

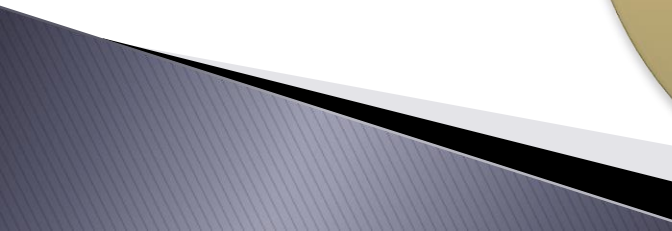
Modalities (Electrical stimulation, ice, heat)

Therapeutic
Massage

REHABWORKS
KENNEDY
SPACE
CENTER

Active
posture
awareness
and
correction
of postural
habit

Therapeutic
Exercises



Treatment



Following an exercise protocol, subjects demonstrated ability to maintain neutral cervical posture during prolonged sitting



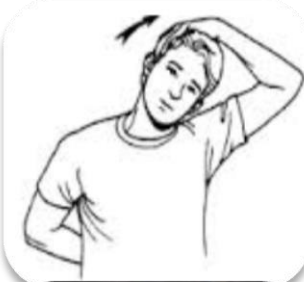
Therapeutic exercise is the best medicine! Get active!

Treatment

Stretching – apply overpressure with your hand



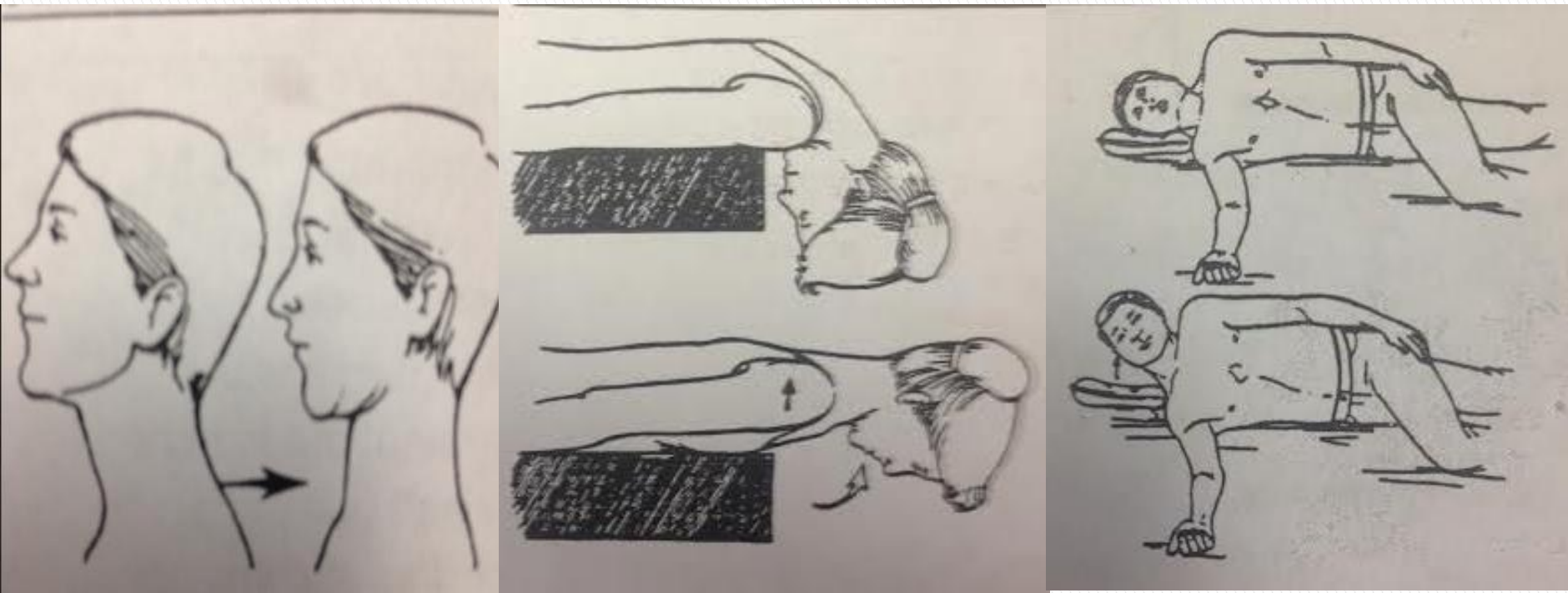
Neck extension



Neck side bending

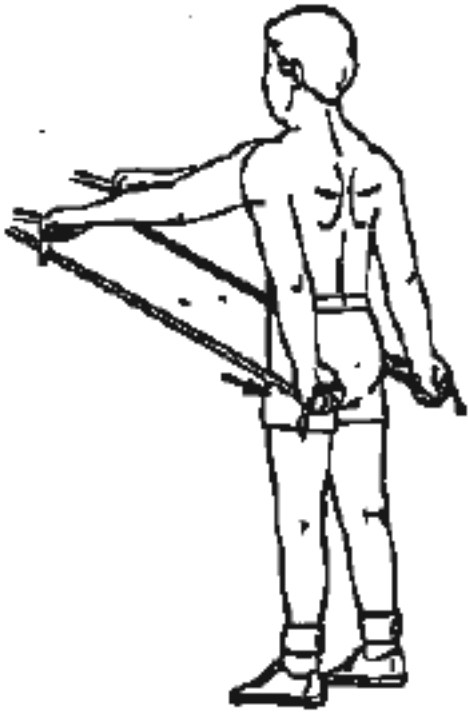


Neck rotation



Chin Tucks, Prone Hanging Extensions, Side Lateral Flexion

Therapeutic Exercise



Thoracic 3s
Therapeutic Exercise

Conclusion

Tech Neck is effecting
all age groups

It is important to take
an preventive
approach and be
proactive with signs
of tech neck

Practice good posture
daily, until it become
habit!

Help educate the
younger generation by
assisting them with
good posture habits

Thank you!

Questions?

Resources

- ▶ Ariens G, Bongers P, Douwes M, et al. Are neck flexion, neck rotation, and sitting at work risk factors for neck pain? Results of a prospective cohort study. *Occupational and Environmental Medicine*. 2001;58(3):200-207. doi:10.1136/oem.58.3.200.
- ▶ Falla, D., Jull, G., Russell, T., Vicenzino, B., & Hodges, P. (2007). Effect of Neck Exercise on Sitting Posture in Patients With Chronic Neck Pain. *Physical Therapy*, 408-417. Retrieved June 25, 2015, from PubMed.
- ▶ Hansraj, K. (n.d.). Assessment of stressing in the cervical spine caused by posture and position of the head. *Surgical Technology International*, XXV(593).
- ▶ Kim, H., & Kim, J. (2014). The relationship between smartphone use and subjective musculoskeletal symptoms and university students. *Journal of Physical Therapy Science J Phys Ther Sci*, 575-579.
- ▶ Wahlstrom, J. (2005). Ergonomics, musculoskeletal disorders and computer work. *Occupational Medicine*, 168-176. Retrieved June 25, 2015, from PubMed

Feel Like You are Suffering from Tech Neck?



Come see us at RehabWorks!

Schedule your free consult to be evaluated
and receive advice and strengthening recommendations
to prevent further symptoms.

Phone: 867-7497

Email: KSC-RehabWorks@mail.NASA.gov