

The poster features a grayscale photograph of a person's back being massaged by two hands. A circular inset shows a 3D anatomical model of a shoulder joint. A decorative wavy line in shades of purple and pink runs across the middle. The text is in a clean, sans-serif font.

Osteopathie Kongress  
**Gelenke & Manipulation**  
International osteopathy conference on joints & manipulation  
09.-11.06.2023  
Holiday Inn Berlin Airport - Conference Centre  
[osteopathy-conference.com](http://osteopathy-conference.com)

 OsteopathieSchule  
Deutschland

# **Osteopathic Diagnosis and Treatment of Shoulder and Hip Problems**

...”An Osteopathic Approach” –William H Devine, DO





# Or... An Osteopathic Approach to Shoulder and Hip Prc



- **William H. Devine, DO**

- Clinical Professor, Midwestern University- Arizona Campus, USA
- Director of Postgraduate Osteopathic Medical Education
- C- Neuromusculoskeletal Medicine and Osteopathic Manipulative Medicine
- C- Family Medicine and Osteopathic Manipulative Treatment





# Objectives

- The goal of this lecture is to briefly share some useful clinical Osteopathic concepts and insights in the Diagnosis and Treatment of common extremity problems that have been helpful over the years...
- Much more will be presented at my Workshops. I will “put it all together” at the workshops with some of these presented concepts.
- Some concepts presented are based on years of clinical experience in medicine and surgery, with practical and rapid evaluation, diagnosis and treatments that may be useful. Many of you use them in your practice. But for others this may provide different ideas of practice.
- The other speakers may cover similar ideas.

“History and Physical Is Important”

...For All Extremity Problems-

- If Injury, Arthritis, Fracture, Repetitive Use, Referred or Local Pain, connective tissue disorder??
- For Diagnosis- history and physical exam are important part of the evaluation.
- For Treatment: Important Before making the decision as to selection the type of OMT and management plan.





# Part of the Evaluation and Management-

---

The “Five Osteopathic Health Care MODELS” should be considered for evaluation and treatment.

---

The 5 models are a basis for Osteopathic Care.....

Likely all of you have been doing them in your practice but not familiar with the “Models”

# 5 Models of patient assessment and treatment are necessary for extremity diagnosis and successful treatment:

According to Dr. AT Still, **“Life Essentials”** of Osteopathy include:

***“food, air, water, light, heat, exercise, protection and rest”- We need these in addition to environmental and psychological harmony with our evaluation and treatment selections..***

→ What do these translate to today to osteopaths?

These are the foundations of the osteopathic approach to patient health, and these create our models for patient assessment and treatment.



Biomechanical



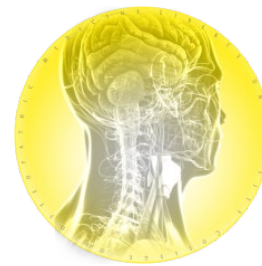
Behavioral



Metabolic - Energy



Respiratory -  
Circulatory



Neurological

# “FIVE MODELS OF OSTEOPATHY”

- **Biomechanical**
  - Optimize structure and function of the musculoskeletal system to affect the body’s homeostatic mechanisms
- **Respiratory/Circulatory**
  - Optimize respiratory and circulatory components of homeostatic responses
- **Metabolic/Energetic**
  - Optimizes the body’s biochemical processes, cellular functions, and energy consumption
- **Neurologic**
  - Normalizes nervous system function including somatic and autonomic nerves
- **Behavioral**
  - Utilizes mental, emotional, and spiritual influencers of health





# “Osteopathic” Considerations Include :

## Encompassing Approach- “5 Models of Osteopathy”

With.... “Tenants of Osteopathy” \*

- Body Unit
    - Conditioning and range of motion
    - Stretching, then strengthening
    - Preventative mechanisms
  - Structure and Function
    - Diet and nutrition
    - Ergonomics: ie workstation
    - Restoration towards “normal” – nudge the body hemostasis
      - resting tone, balance, circulation
  - Healing
    - Patient specific treatment
    - Realistic goals
- (\*Might be called a “Holistic Approach”-which most of us practice)







- Consider the onset of symptoms. Abrupt or Gradual?
  - Repetitive use injury, chronic or acute?
- 
- Ask the patient what he/she thinks caused the problem.
  - What makes it worse?
  - What makes it better?
  - Look at the cervical, thoracic and shoulder girdle for pain referral or restriction for **Shoulder Problems**. And Lumbosacral and pelvic regions for **Hip Problems**.
  - Imaging tests done? Are more indicated?
  - Laboratory tests done? Systemic problem or connective tissue disorder? Metabolic?

# Your Osteopathic Palpation Skills May Outperform Imaging!

Real Time Ultrasound and Xray may help, but just biomechanical ROM and palpation of the joints give immediate information and hint as to diagnosis and treatment.

MRI is expensive a gold standard for imaging diagnosis, but is a static picture of bone, joint and capsule status, but your own palpatory skills can rapidly give very valuable information.

Realtime Ultrasound of the Shoulder outperforms MRI, but your Osteopathic examination skills can be very accurate, and imaging will often just confirm what you have found.



# **Myofascial Pain Patterns, Myofascial Trigger Points and Counterstrain Tenderpoints have referred patterns that are Useful to Learn...**

- We briefly will give you some diagnostic tools today for diagnosis and treatment, but more in the Workshops.
- Learning myofascial pain patterns, Tenderpoints as part of your evaluation together with finding areas of greatest restriction will be useful in arriving to a working diagnosis.





## Keep in mind that “Pain is a Liar” ...

- May be from *Adaptation* from a distant chronic site.
- May be *Referred Pain* or other symptoms from the spine or viscera.
- May have systemic disease component.



# “Pain is Often a Liar” but needs recognized.

- The location of pain complaint may be just an Adaptation or Referred pain- Should be considered before action is taken to treat.
- The myofascial pain pattern may be a clue as to origin, and other findings including palpation.
- Patients can have **Both** Referred and Local symptoms. Multiple problems are common.
- Examples include Viscerosomatic reflex pain from the heart or lung causing shoulder pain. (AMI or PE)

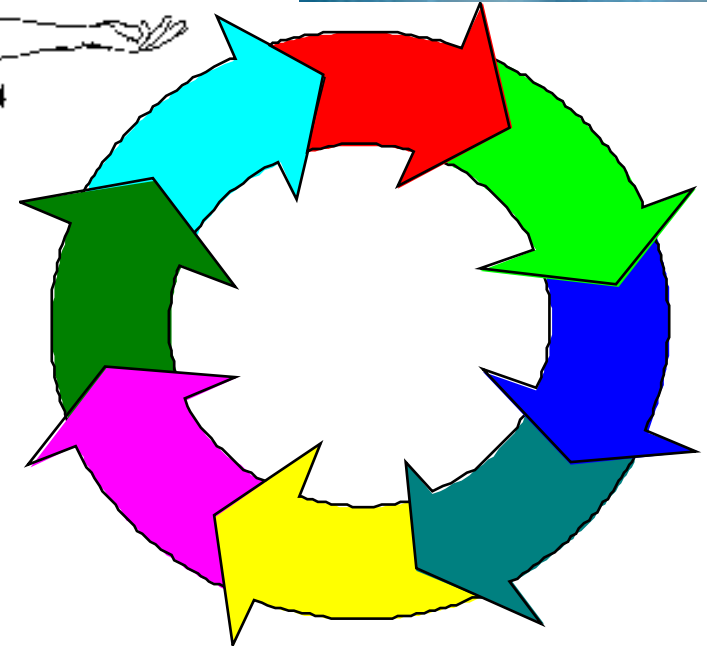
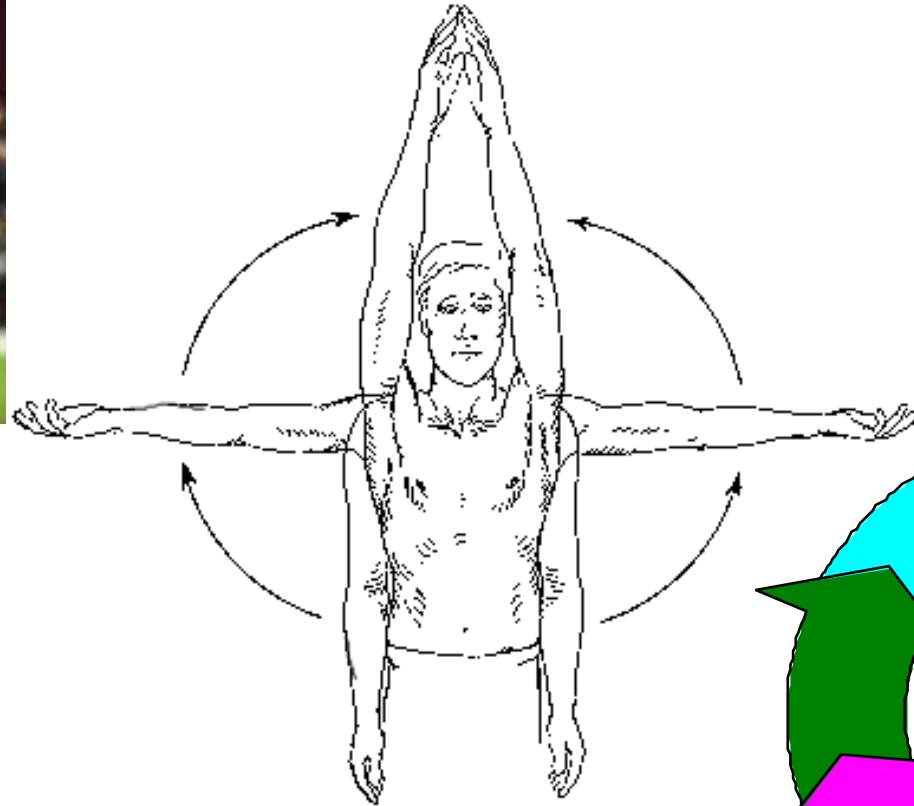


## Shoulder and Hip Problems:

- All are both often Related by History of injury, Connective tissue disease and/or Compensatory mechanisms.
- Knowledge of basic functional anatomy and physiology are needed for DX and Tx



# Basic Shoulder Principles for Consideration:





# Shoulder motion considerations:

- 3 Joints
  - Glenohumeral
  - Sternoclavicular
  - Acromioclavicular
- 1 Articulation
  - Scapulothoracic
- Shoulder movement is in multiple planes.
- **All sites are dense with mechanoreceptors-nociceptors and proprioceptors used for Dx and Tx.**
- **Must be continuously centered on a small dynamic point, or impingement symptoms appear.**



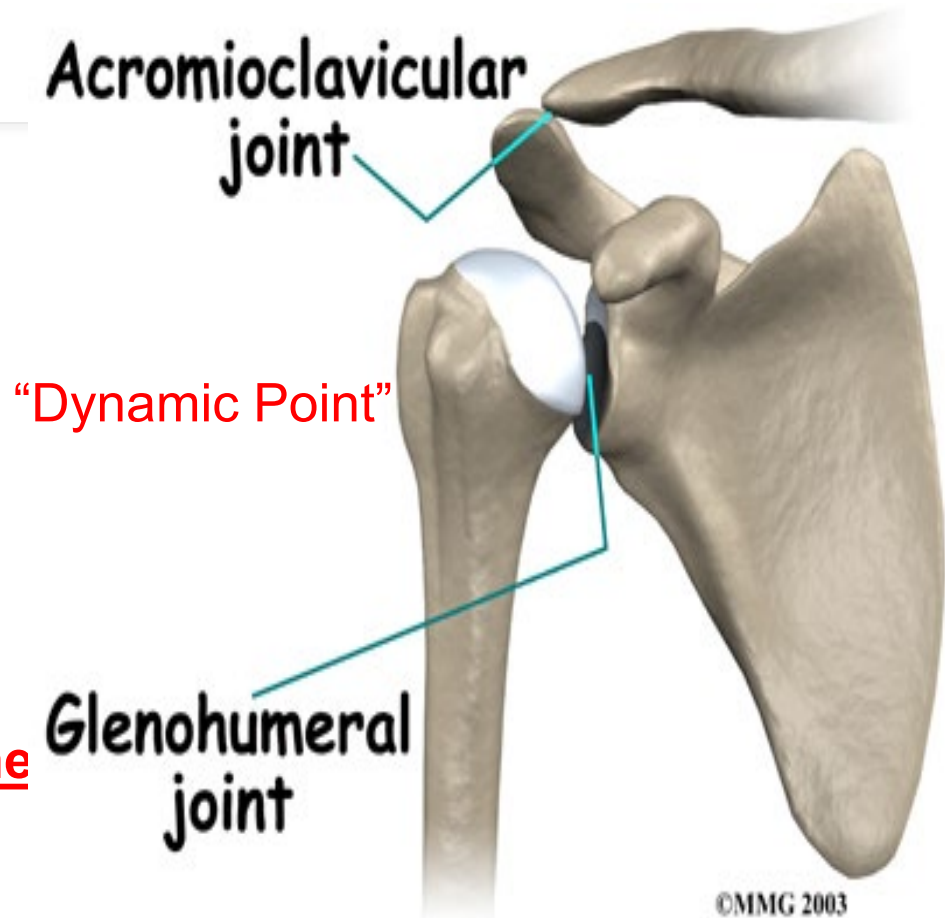
# Shoulder joint is muscle dependent

- The shoulder joint is a muscle-dependent joint as it lacks strong ligaments.
- It is a very loose “ball-and-socket” joint that requires all shoulder muscles to control the motion and power in **synergy**.
- Reciprocal action is required as all muscles must contract or relax in a sequence to maintain a Dynamic Point.
- All muscles and ligaments must be in balance as to function.



# Glenohumeral Joint

- Ball-and-Socket Joint
  - Glenoid Fossa covers 1/3 humeral head
- Stability
  - Mostly soft tissue
  - Some from acromion process and clavicle
- Motion
  - Primary: Rotation around 1 cm zone
  - Minor Motions: Rolling and translation
    - Increases with injury





# The 4 “SITS” Muscles of the Rotator Cuff:

---

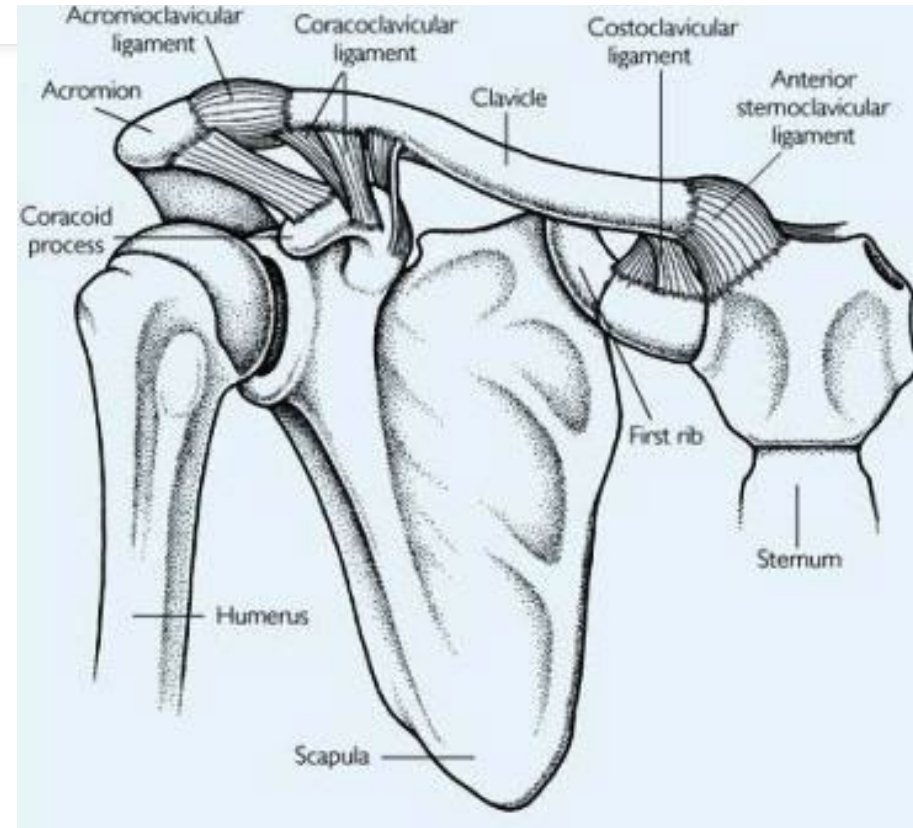
## Review

- S – Supraspinatus – Abduction of the arm
  - I – Infraspinatus – External rotation of the arm
  - T – Teres minor – External rotation of the arm
  - S – Subscapularis – Internal rotation of the arm
- 
- THESE ROTATOR CUFF MUSCLES ARE ALL TO BE IN BALANCE for **Function**



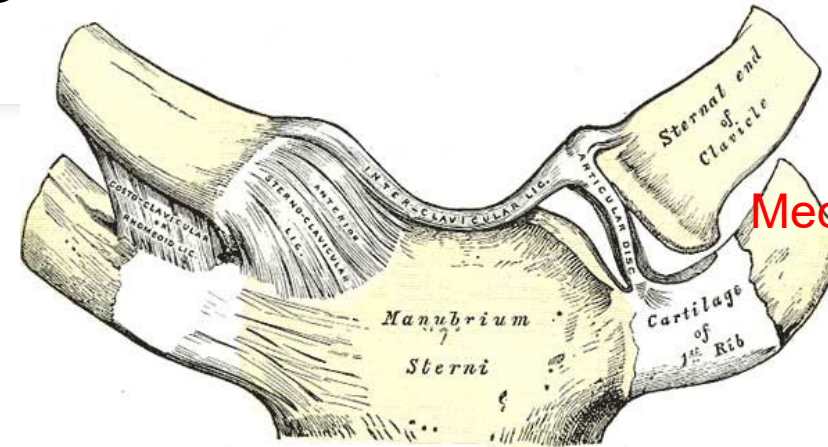
# Acromioclavicular Joint Mechanoreceptors

- Fibrocartilaginous
  - Acromion process to clavicle
- Injury
  - Common with certain activities –court injuries, swimming, biking, horseback riding, football and soccer.
- Motion
  - Remember the acromion is part of the scapula. Arthritis of the AC joint can cause restriction in motion and injury to the inflamed ligament.
  - Anterior or posterior localized pain with disruption of shoulder muscle sequence.

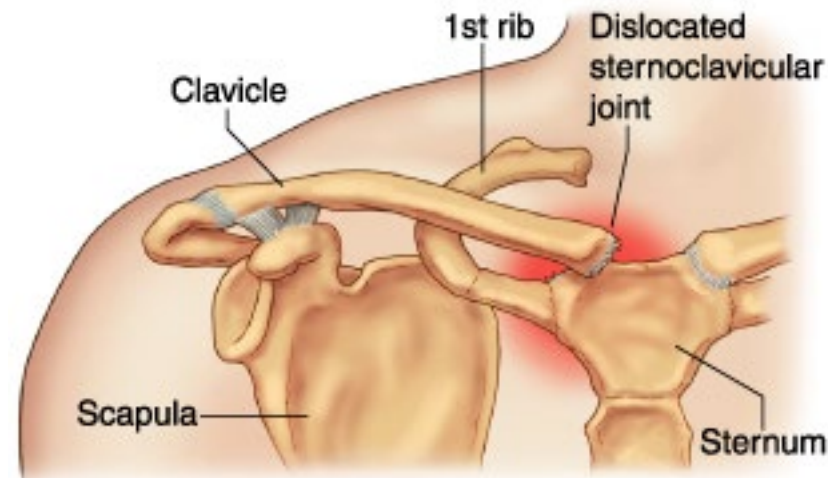


# Sternoclavicular Joint helps to provide information for shoulder function

- Synovial Saddle Joint
  - manubrium to medial clavicle
- Stability
  - Transfers motion from arm to axial skeleton
    - Only joint that does this
  - Rarely dislocated, may be subluxed
- Motion
  - 4 degrees of clavicular elevation per 10 degrees of arm elevation (up to 90)
  - Reciprocal to AC joint
    - Lateral clavicle elevates, medial clavicle depresses
    - Lateral clavicle protracts, medial clavicle retracts
    - Subclavius and Clavicular fibers of the Pectoralis Major are affected



Mechanoreceptors



# ANTERIOR SHOULDER PAIN

---

- Biceps brachii (long and Short heads)
- Pectoralis Major ( Clavicular fibers)
- Pectoralis Minor
- Subclavius
- Infraspinatus
- Supraspinatus
- Deltoid
- Anterior and middle scalenes
- Trapezius





# POSTERIOR SHOULDER PAIN:

- Supraspinatus
- Levator Scapula
- Serratus Posterior Superior
- Teres Minor
- Trapezius
- Teres Major
- Subscapularis

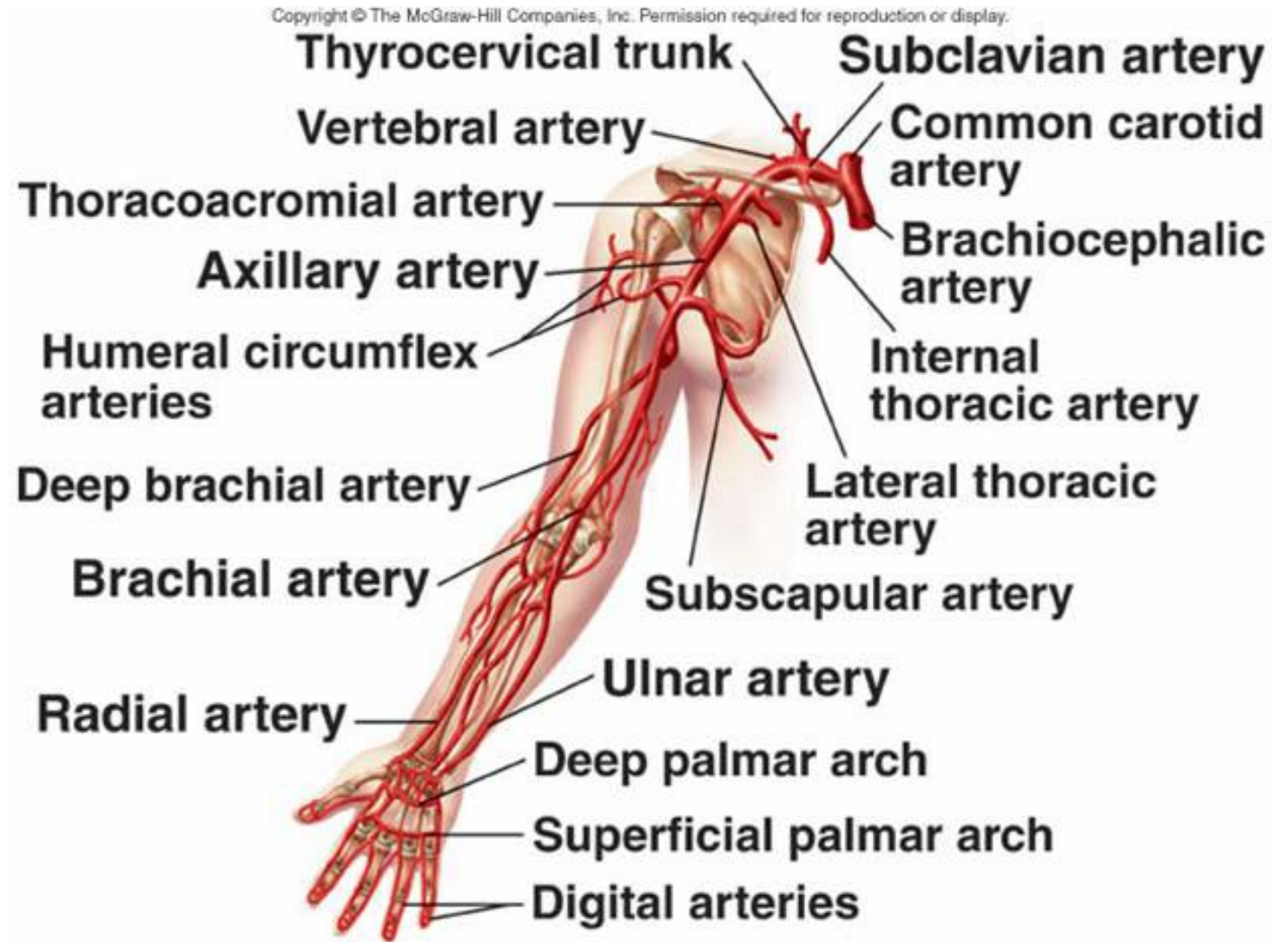


## Blood supply\*

- Subclavian to Axillary to Brachial to Radial/Ulnar artery
- Subclavian artery passes between the anterior and middle scalenes.

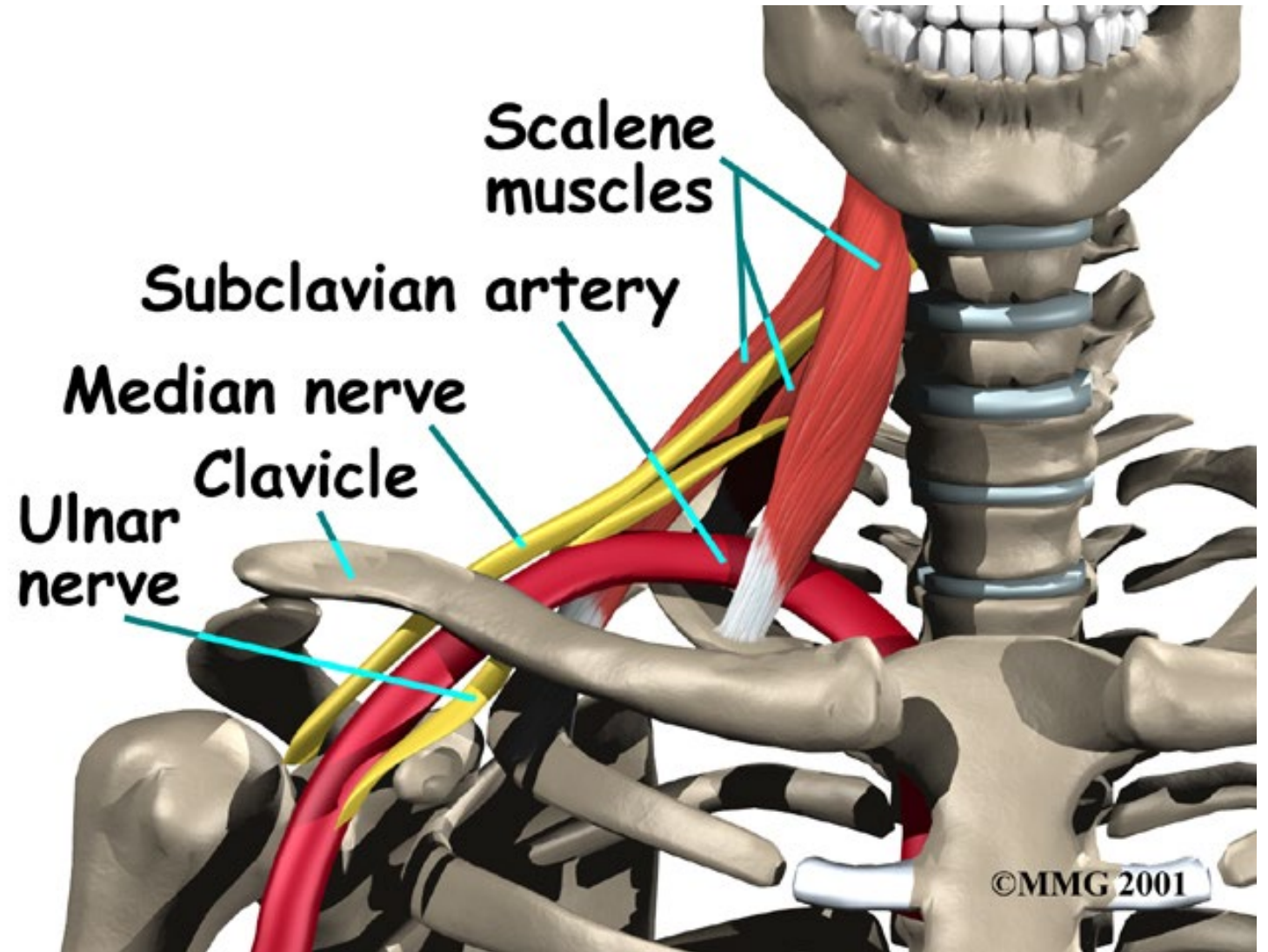
**\*Consider TOS** (thoracic outlet syndrome)....

- Contracture or spasm could compromise arterial but not venous supply to the arm.
  - Subclavian Vein is spared because it falls anterior to the anterior scalene



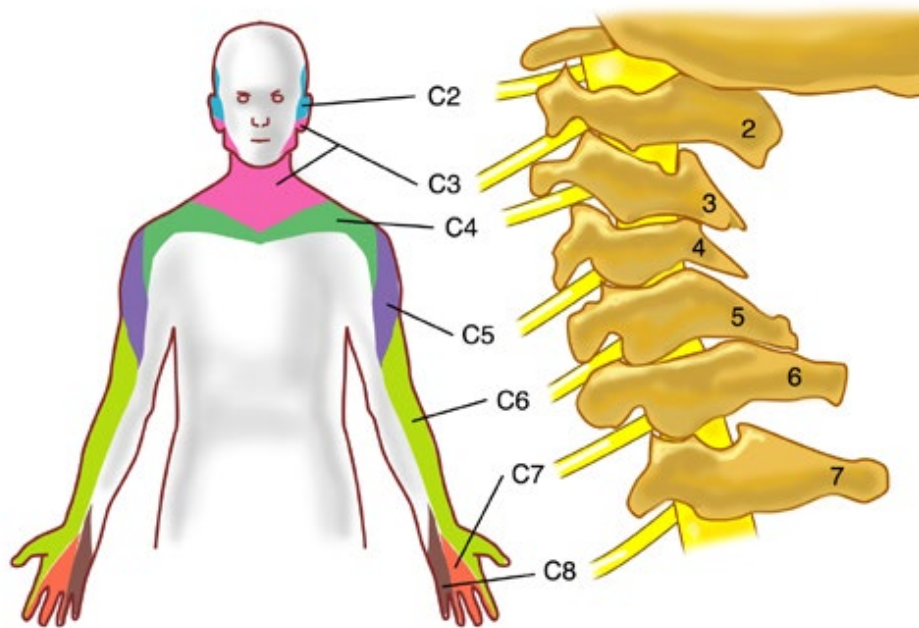
## Scalenes and subclavian artery with TOS

- Typical Orthopedic Thoracic Outlet Tests:
- Adson Test for TOS
- Also--
  - Roos
  - Allen
  - Wright's



## Note Shoulder Innervations from cervical spine as part of your evaluation

- Motor nerve innervations
- Sensory nerve innervations





# Clinical: Common Diagnoses\* with different causes...

- Inflammation
  - Bursitis
  - Tendonitis
- Restriction
  - Adhesive Capsulitis – older patients
- Tissue Damage
  - Rotator Cuff Tear – middle/older age
- Trauma
  - AC Joint Separation - young
  - Shoulder Dislocations – young

\*SOMATIC DYSFUNCTIONS ARE SECONDARY TO THE ABOVE

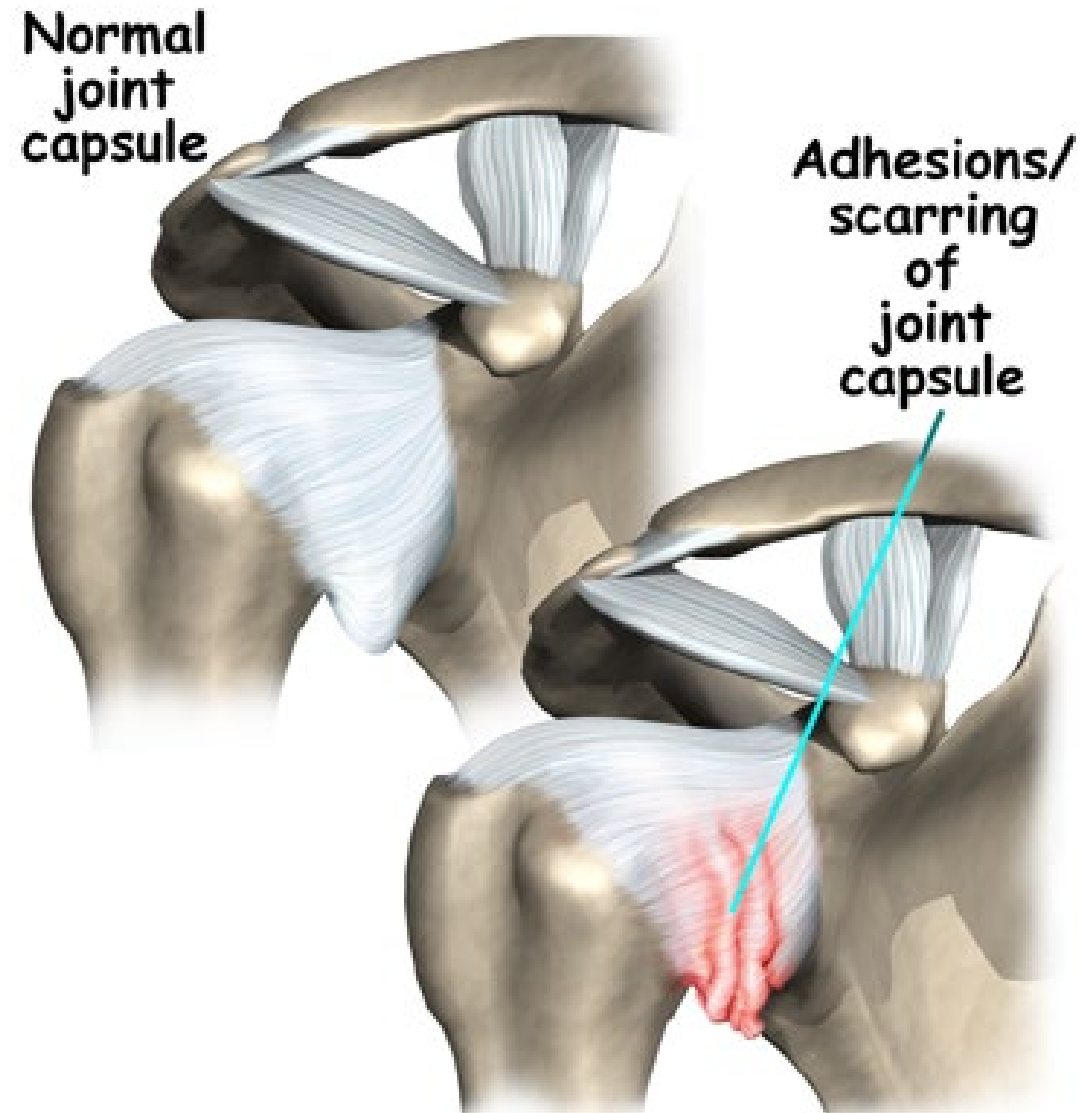
(All may be treated with OMT)



# ADHESIVE CAPSULITIS

- **"Frozen Shoulder"-Not in Arizona...**

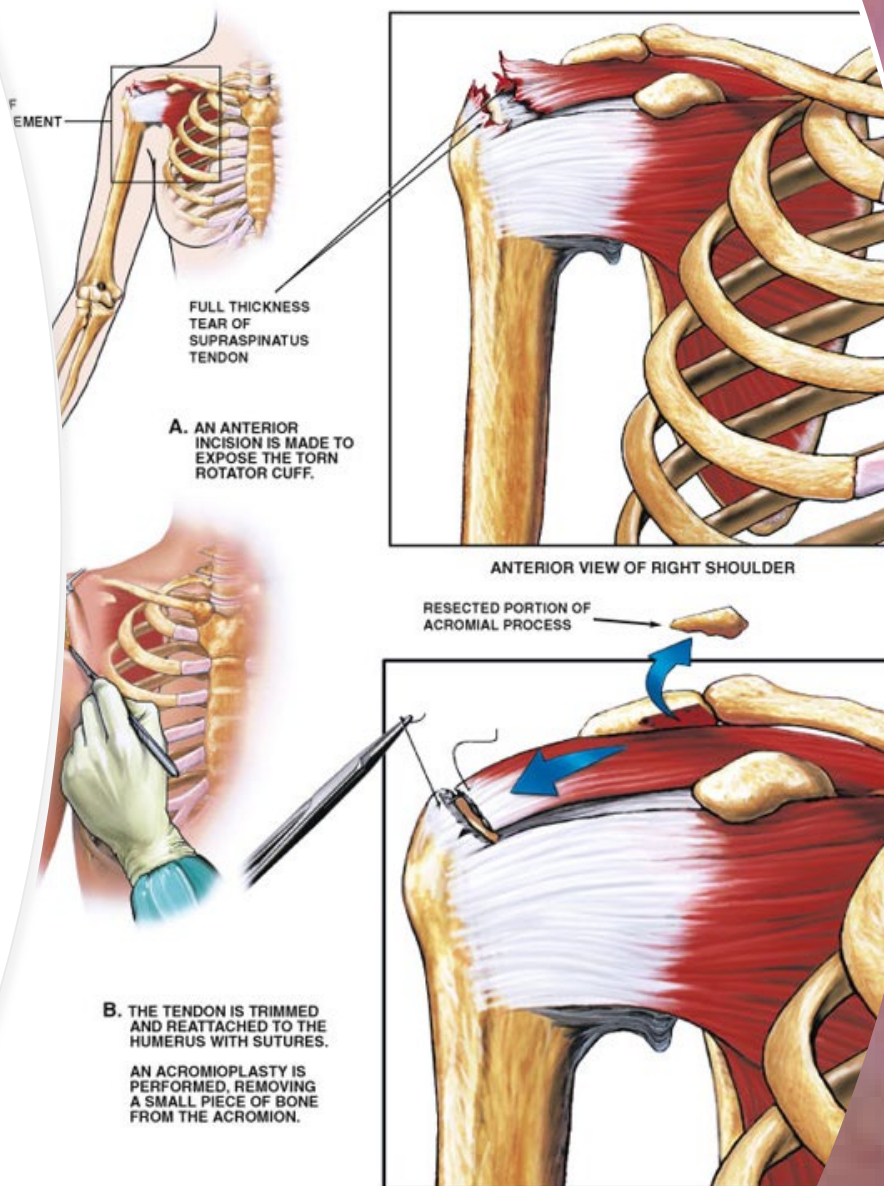
- Inflammation of the rotator cuff
- Causes:
  - Prolonged shoulder immobility
  - Repetitive overuse
  - Trauma followed by disuse
- SSX
  - Decreased ROM, stiffness, pain
  - Gradual onset
  - Gradual relief over years
- Diagnosis: Positive Hawkin's or Neer's Test
- Treatment
  - Physical: OMT, stretching, ROM exercises (Spencer's)\*\*\*\*\*
  - Medical: Steroid injections, anti-inflammatory
  - Surgery: Rarely useful



## Postsurgical OMT:

- ...OMT can be used **After** Surgery...
- Counterstrain & Indirect Myofascial Release OMT as examples

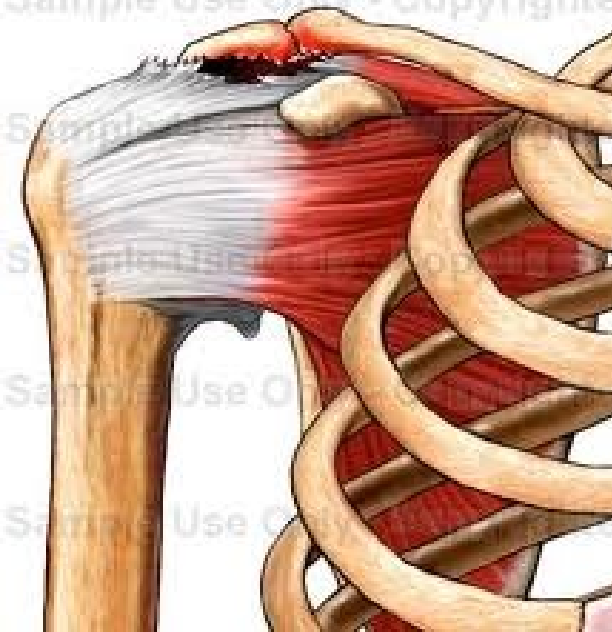
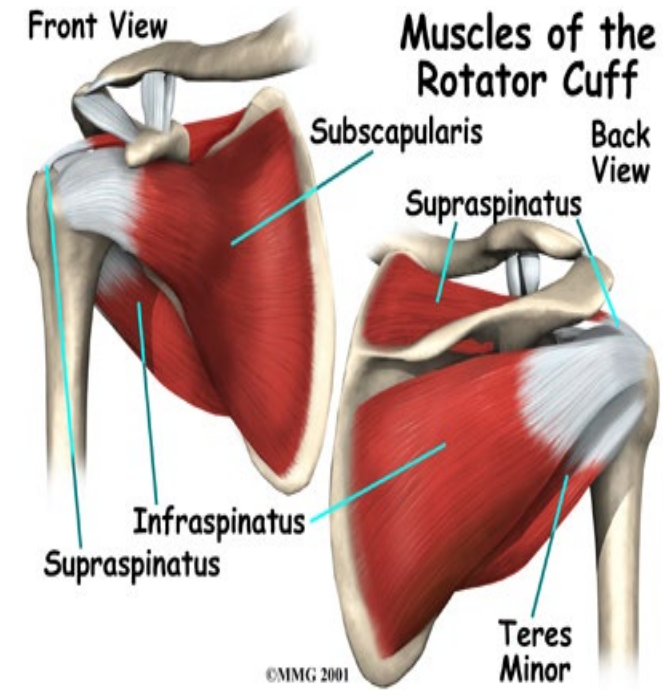
### FULL THICKNESS ROTATOR CUFF TEAR WITH SUBSEQUENT SURGICAL REPAIR





# Rotator Cuff Tear

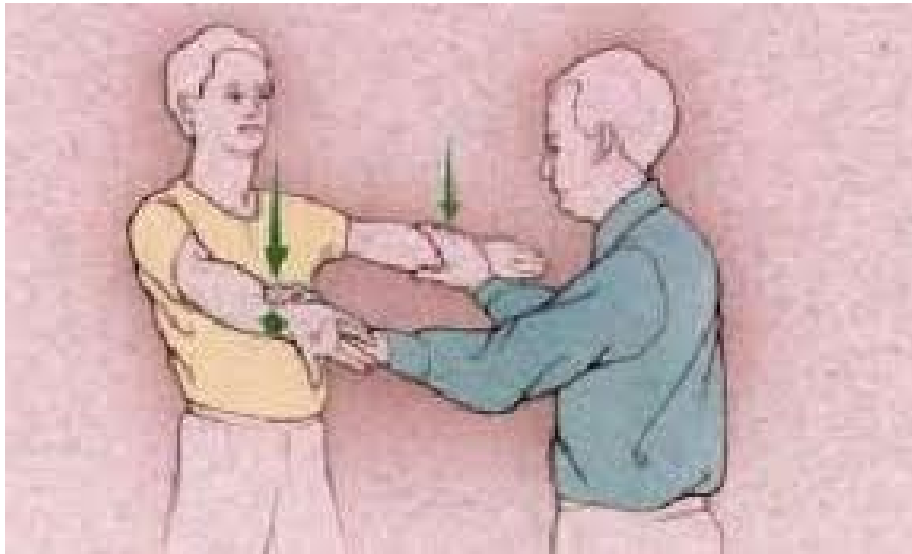
- ▣ Tear
  - Tendon separates from bone
- ▣ Causes
  - Overuse
  - Instability
  - Microtrauma
- ▣ SSX
  - Pain into deltoid
  - Often at night
  - Weakness
- ▣ Diagnosis: ie: Positive Jobe's Test, drop arm, but will have **Supraspinatus Tenderpoint** positive as diagnostic clue
- ▣ TX
  - Recommend OMT (Counterstrain)
    - PT, NSAID, Steroid injection, surgery
    - Tears requiring surgery are less common



# Jobe's test ("empty beer can")

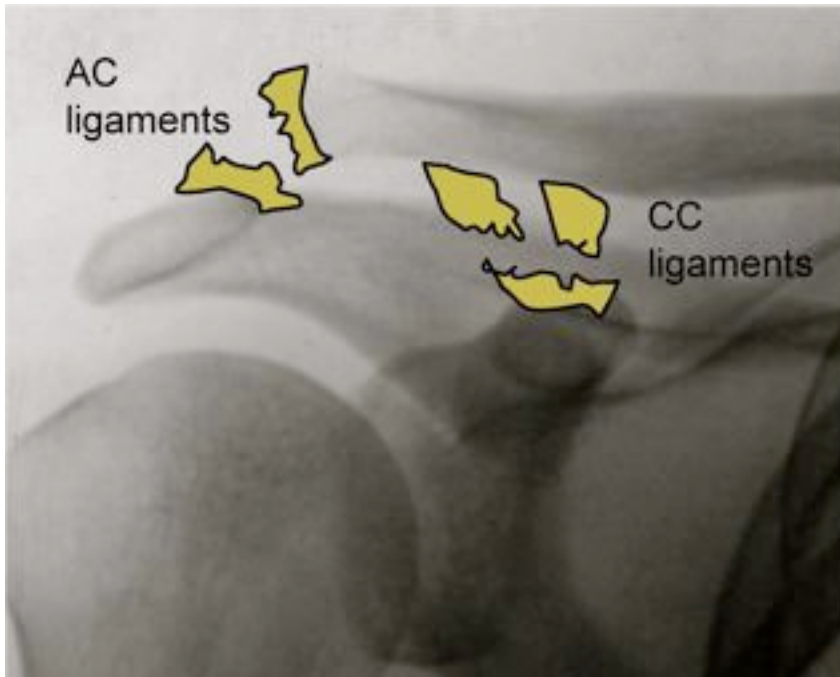
▣ Tests for supraspinatus tear/pathology

- Most common test for **rotator cuff tear**, but Supraspinatus TP or TrP can screen also...



JOBE'S TEST

# Shoulder Separation



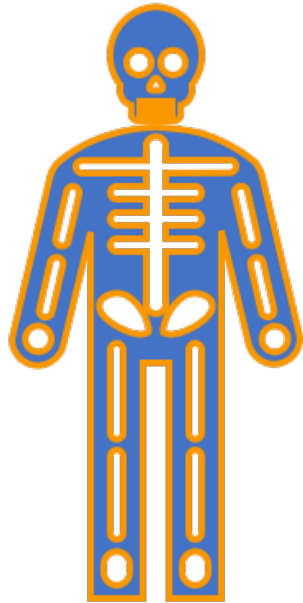
DO YOU NEED A TEST?



## ALWAYS CONSIDER WITH SHOULDER PROBLEMS :

- Cervical Radiculopathy
- AC3 or C4 Tenderpoints or MF Trigger Points
- Scapular Dysfunction
- Postural Imbalance
- Orthopedic Pathology
  - Joint dysfunction
  - **And** Other Somatic Dysfunctions- the “Liars”





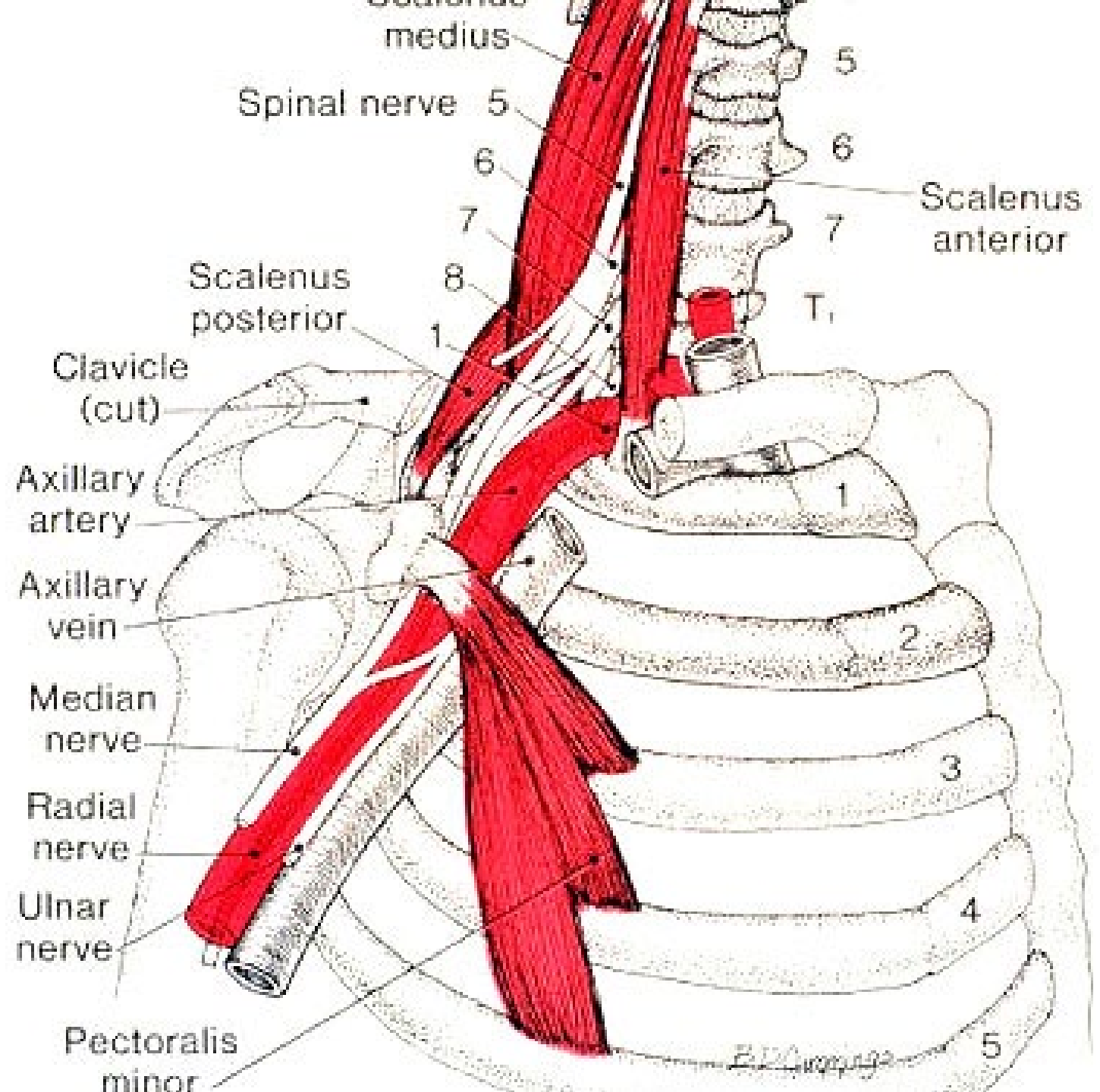
# Anterior Shoulder Pain Patterns

The following are be **briefly** presented as Typical MFP patterns matched to muscles and myofascial pain patterns. The treatments are included with our workshop....

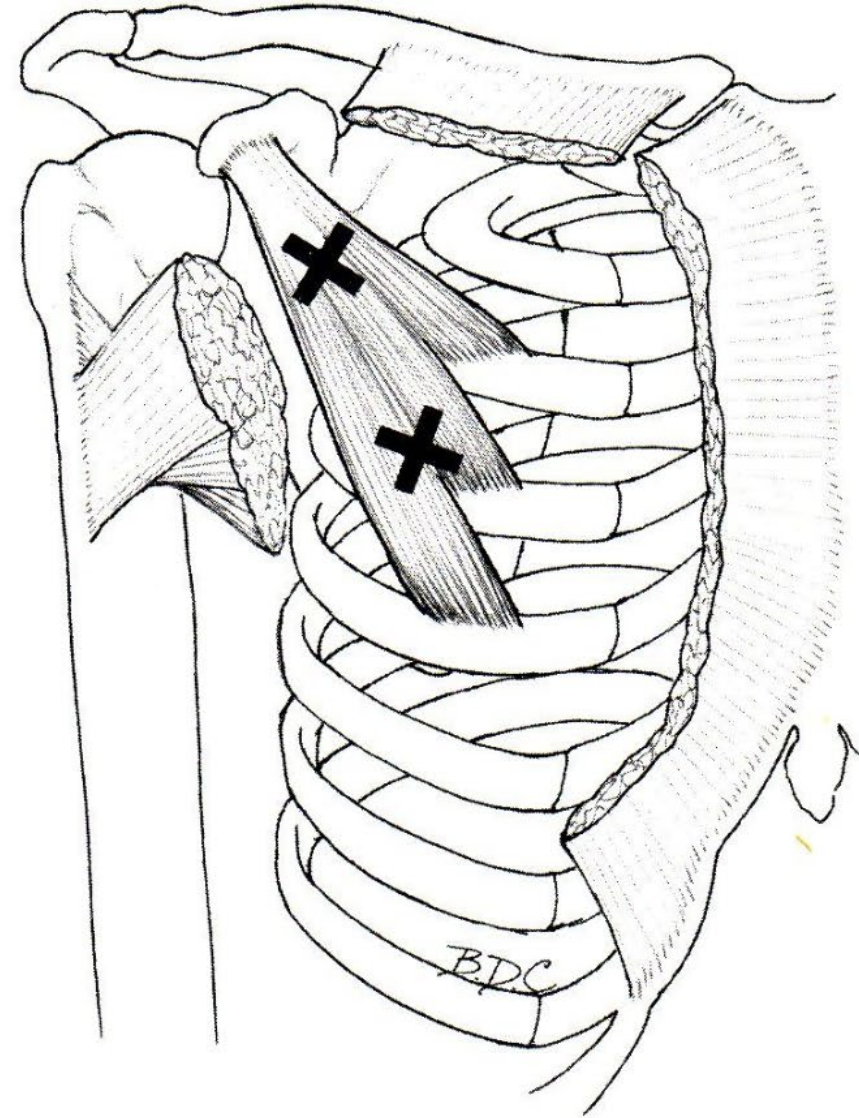
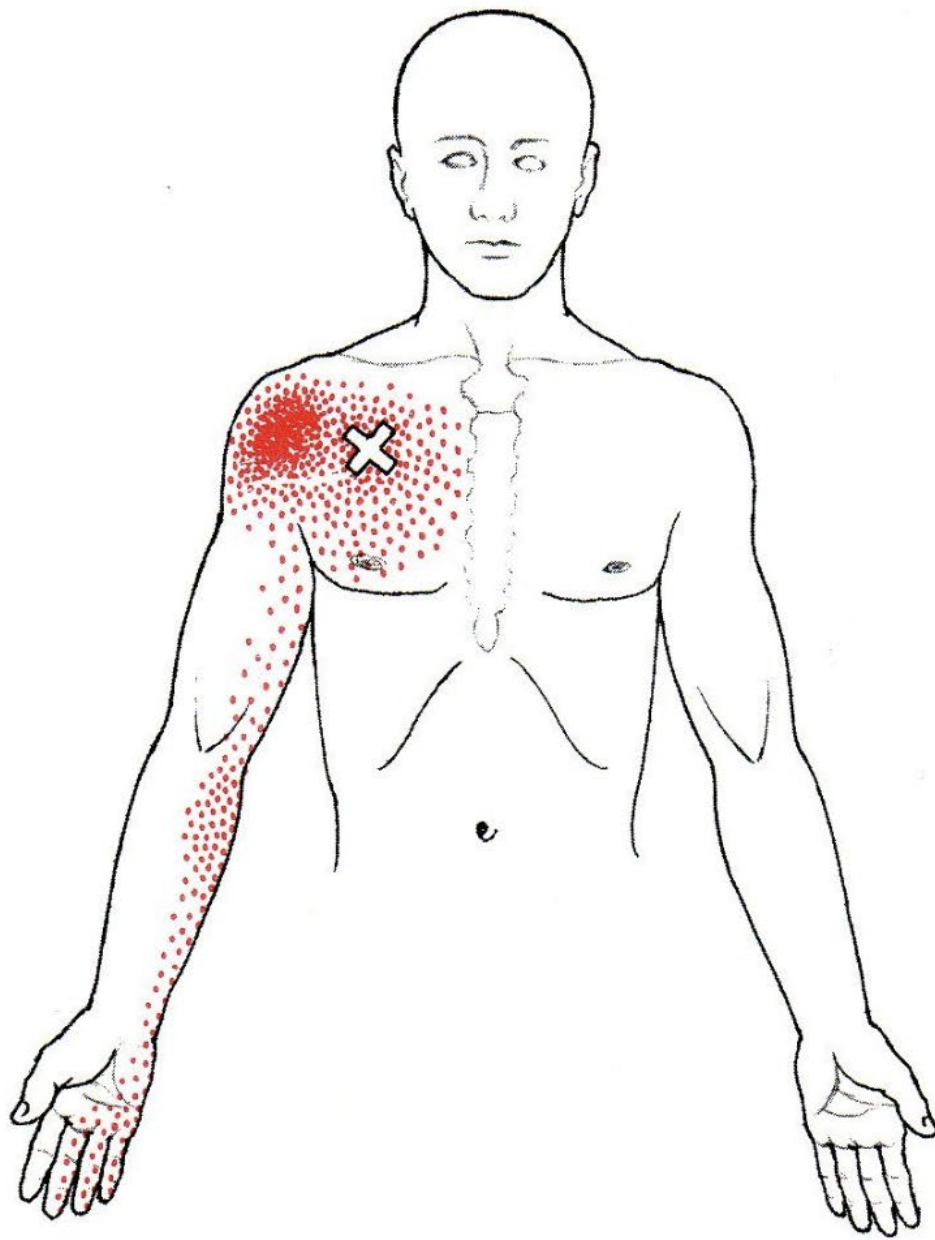
# Important!

## PECTORALIS MINOR

Most commonly associated  
with Anterior Shoulder Pain



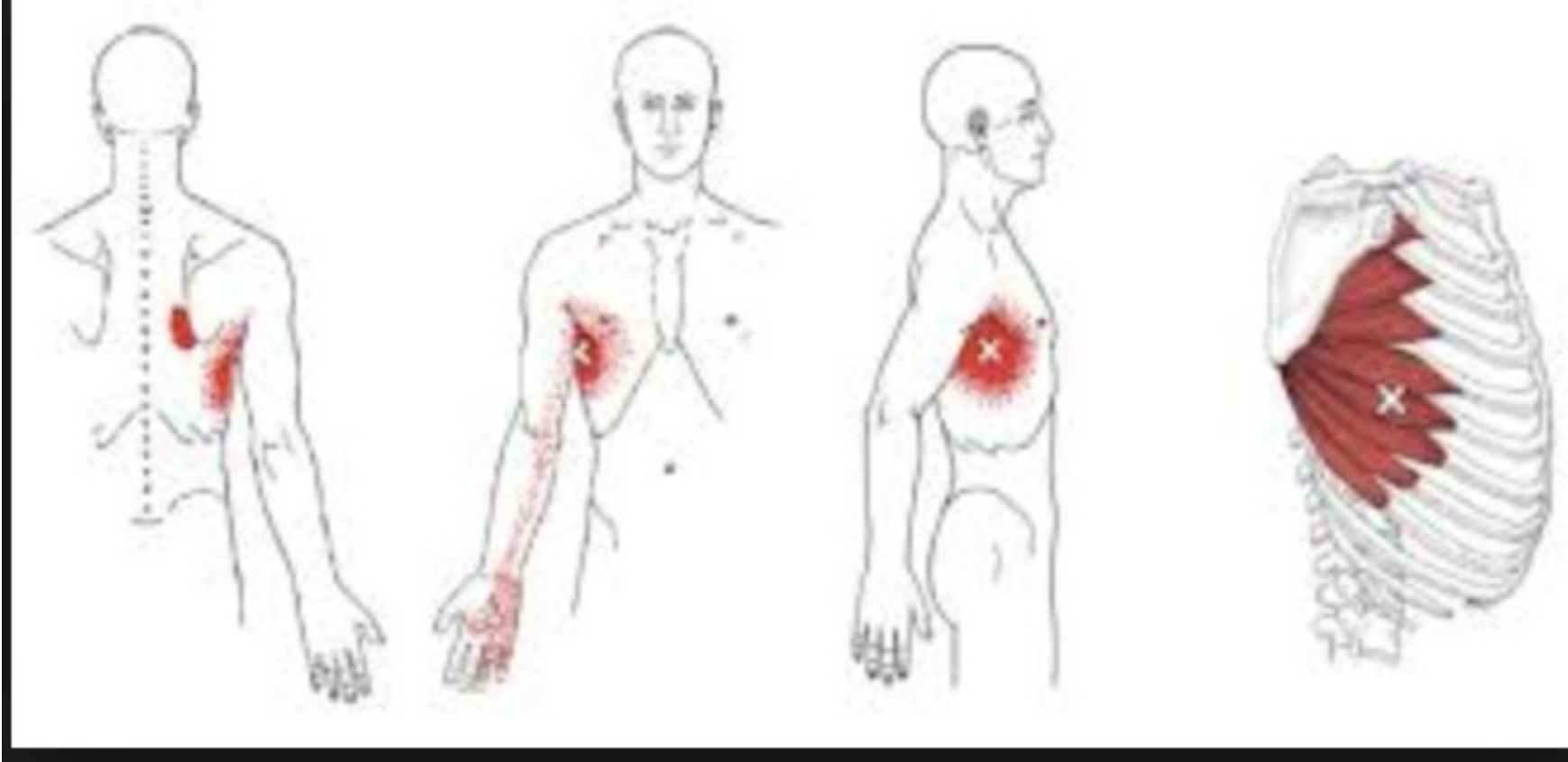




Pectoralis minor pain pattern



# Serratus Anterior



Serratus Anterior Pain can be referred to the hand and the ribs,  
but also - axillary pain and shoulder ache and weakness

## ANTERIOR

### MEDIAL CORACOID (Subclavius Muscle)

## SUBCLAVIUS TP

**Location of Tender Point:** Just medial to the coracoid process, or in the belly of the subclavius muscle.

**Anatomical Correlation(s):** Subclavius muscle.

**Direction to Press on Tender Point:** Press anterior to posterior just medial to the coracoid process. When pressing on the subclavius muscle itself, press anterior to posterior and, holding that pressure, press from inferior to superior against the muscle.

**Treatment Position(s):** With patient seated, rotate the affected arm internally enough for the dorsum of the wrist to rest on the crest of the ilium at the lateral midline (hammer-lock position). Push the elbow forward to achieve adduction of the shoulder and marked internal rotation to the desired mobile point.

**Frequency of Occurrence:** Uncommon to rare.

**Clinical Correlation(s):** Anterior shoulder pain and subclavicular pain in the upper chest.

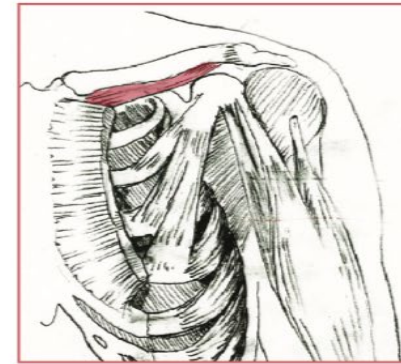
**Associated Pain Referral Pattern:** Anterior upper arm pain and pain in the lateral forearm and hand. Associated paresthesias may be present in the same areas.

**Alternate Names/Nomenclatures:** None.

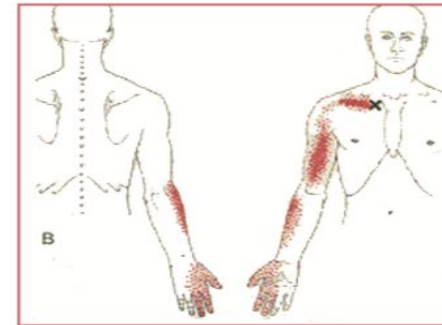
**Explanatory Notes:** None.

### ANTERIOR SHOULDER

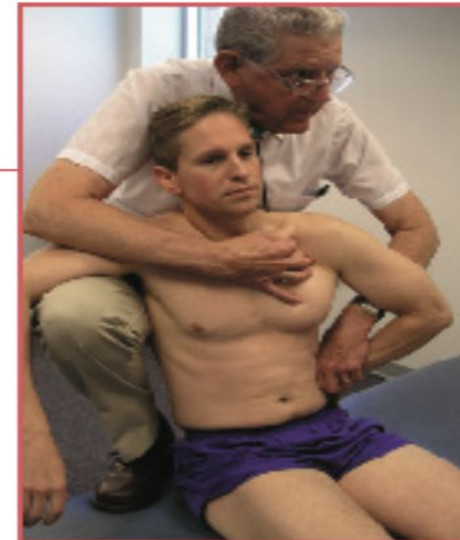
A frequent complaint is anterior or anterior-lateral shoulder pain in the upper shoulder and often is misdiagnosed as bursitis. Look first at the following muscles that have a shoulder referral pattern; infraspinatus, supraspinatus, clavicular portion of the pectoralis major, deltoid and biceps brachii are the "usual suspects" that need to be ruled out or in.



Subclavius muscle



Subclavius pain pattern

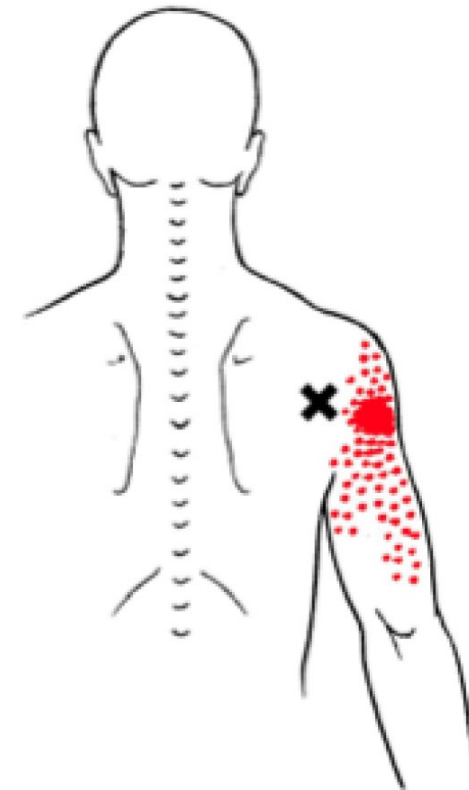
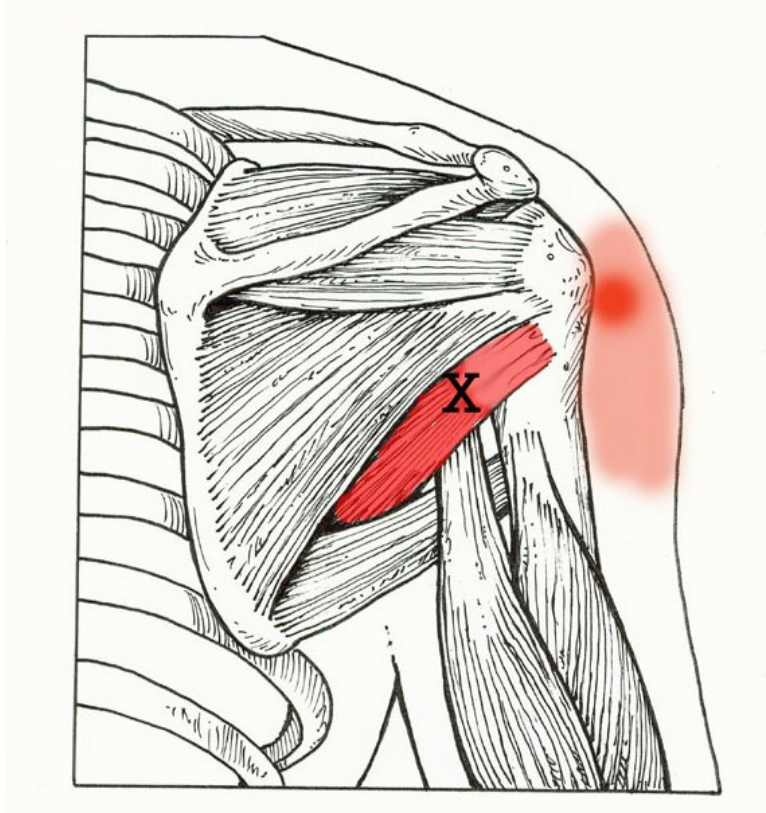


Treatment position

Anterior Shoulder Pain

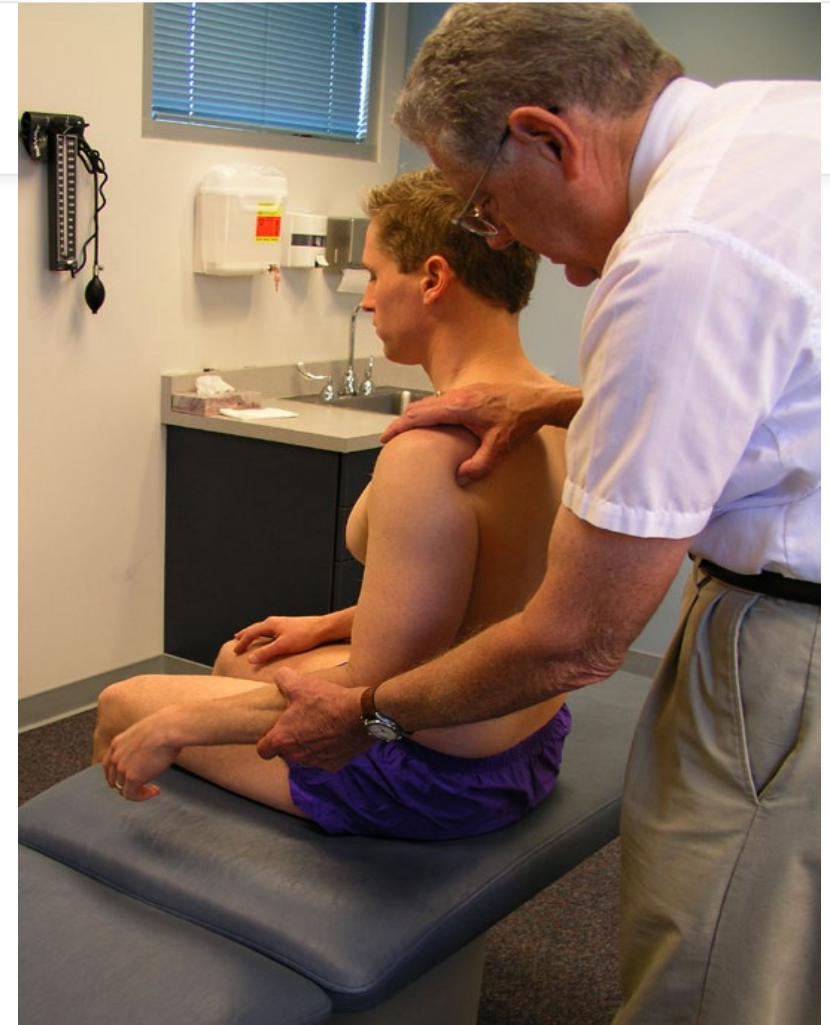
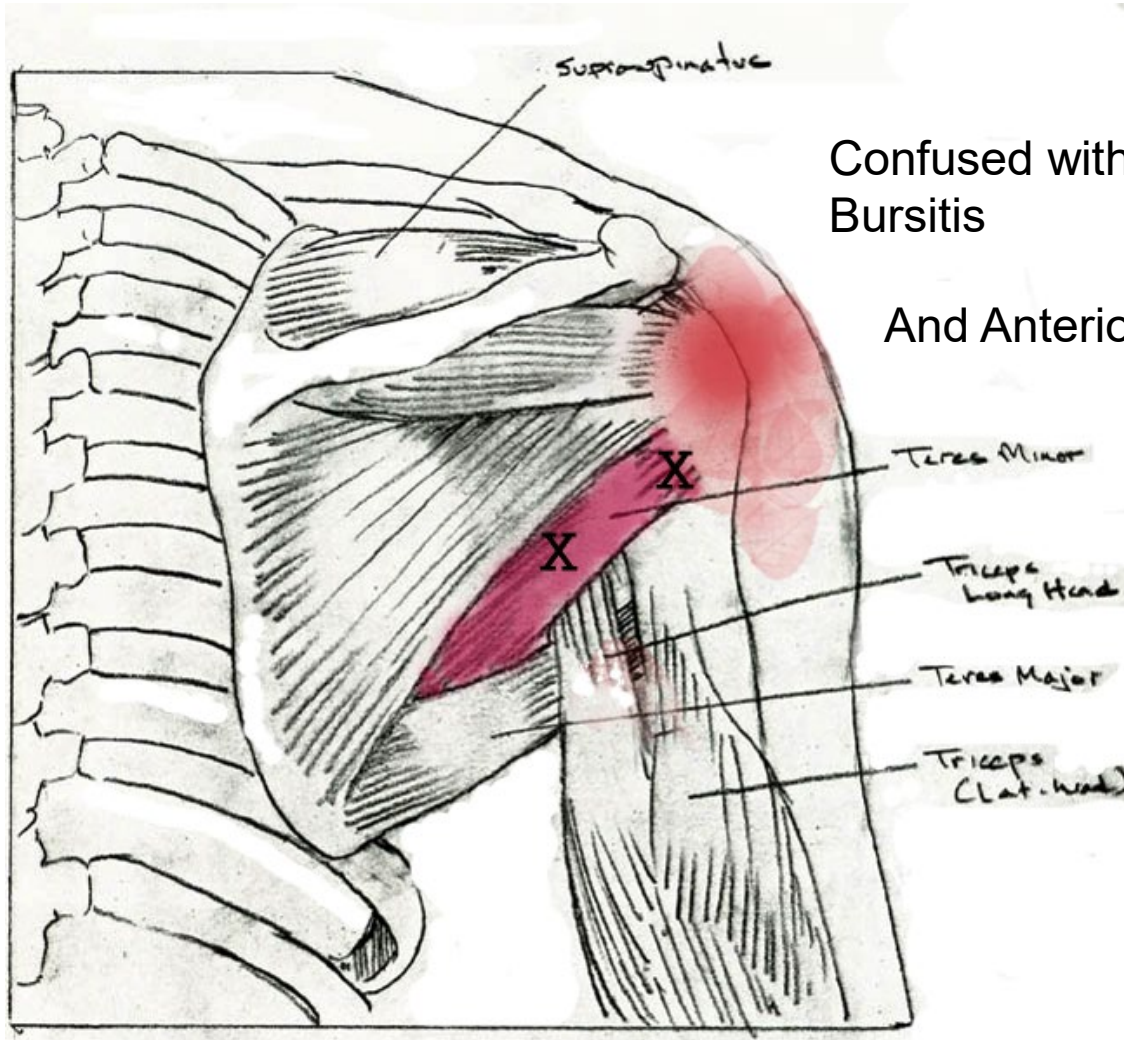
# POSTERIOR SHOULDER PATTERNS:

## Teres Minor MFP Pattern 1<sup>st</sup> Example...





# Teres Minor TP & Tx



## POSTERIOR

### SERRATUS POSTERIOR SUPERIOR (Posterior 2nd – 5th Ribs Elevated)

**Location of Tender Point:** Posteriorly, on the angle of the involved rib on the superior surface where the serratus posterior superior muscle attaches to the rib.

**Anatomical Correlation:** Serratus posterior superior muscle.

**Direction to Press on Tender Point:** Press from posterior superior to anterior inferior.

**Treatment Position(s):** Stand behind seated patient with your foot on the table beside the patient with the axilla on the side of the Tender Point over the your thigh. The patient has one or both feet on the table on the side opposite the Tender Point. This allows sidebending away, which will elevate the angles of the involved ribs and shorten the serratus posterior superior muscle. Suspend patient's arm opposite the side of the Tender Point off the back of the table to enhance rotation.

Extend the cervical and upper thoracic spine to the level of the involved Tender Point to achieve an extension mobile point at this level. Sidebend away. Rotate thorax away to bring the origin of the serratus posterior superior muscle – the bases of C 6-7 and T 1-2 spinous processes – toward the angles of the involved ribs.

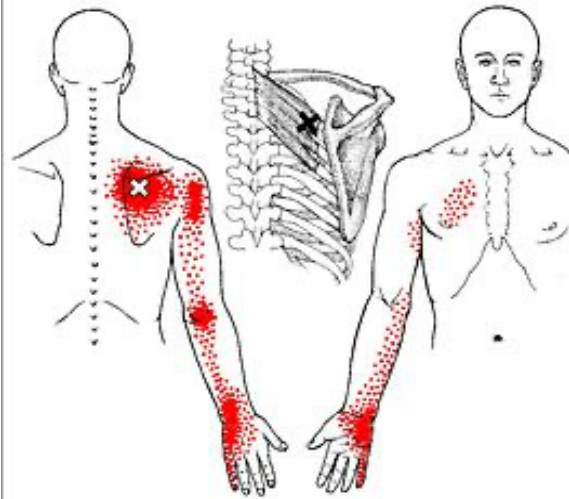
**Frequency of Occurrence:** Very common.

**Clinical Correlation(s):** Pain in the upper thorax at the level of the Tender Point actually located under the scapula.

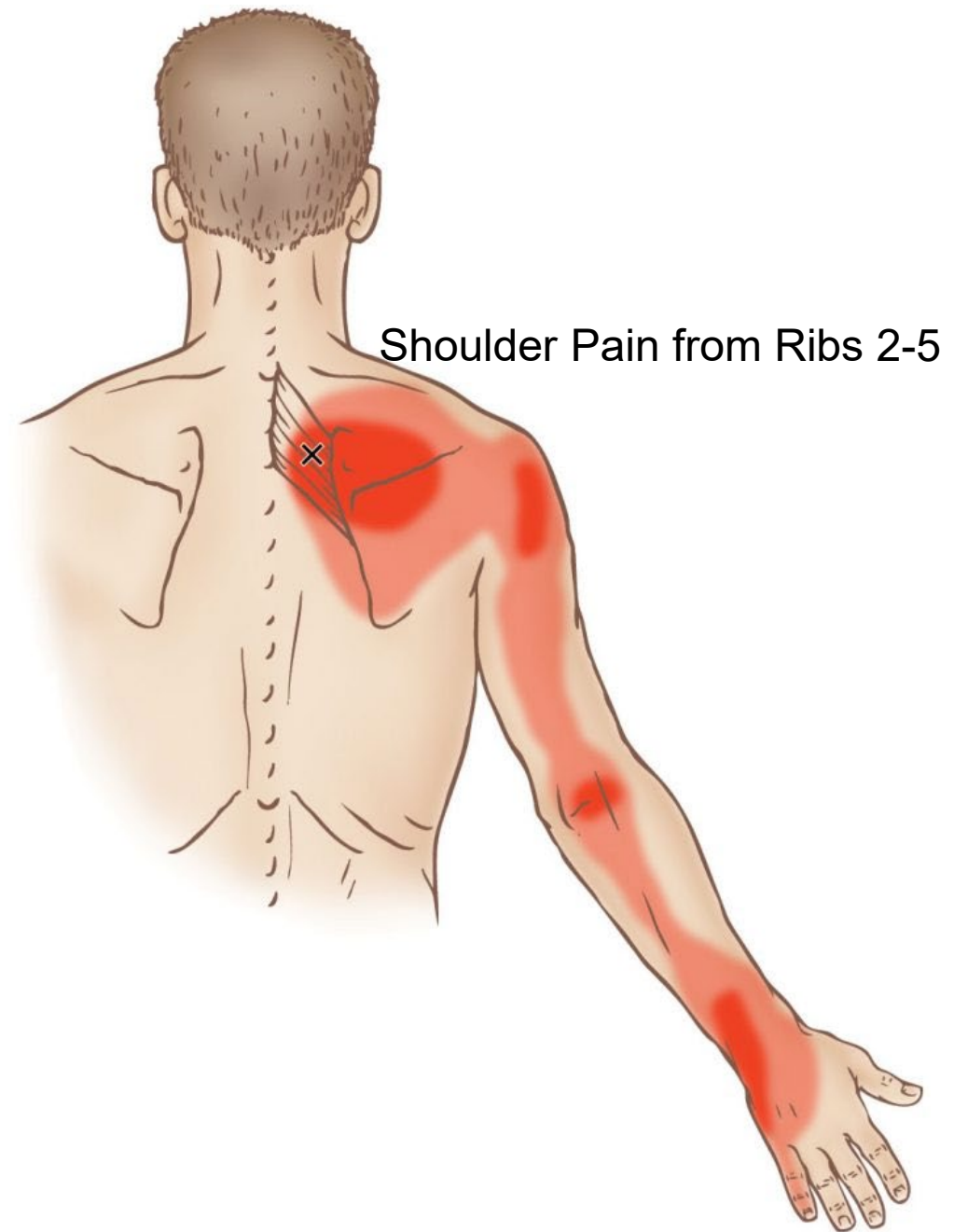
**Associated Pain Referral Pattern:** Pain and/or paresthesias in the shoulder, arm, and hand.

**Alternate Names/Nomenclatures:** None.

**Explanatory Notes:** While this is not a true anatomical shoulder Point, it is included here due to the shoulder-arm pain pattern it causes. It needs to be a primary diagnostic consideration.



MediClip image ©2009 Wolters Kluwer  
Serratus posterior superior  
pain pattern



Treatment position





# Now Hip Problems:

- One would think that there is no connection of Shoulder and Hip...
- Very common to have acute injury or repetitive use injury to both regions.
- Osteoarthritis. Rheumatoid Arthritis or other connective tissue disorders occur with both upper and lower extremities.
- Embryologically , they develop differently and have different mechanoreceptors for function.
- But a problem in one extremity often will affect the other by somatic-somatic reflex, compensatory adaptation, and fascial strain patterns.
- In Contrast to the Shoulder joint, the Hip is a much more stable “Ball and Socket “ joint but still is dependent on balanced muscle activity in a dense capsule of mechanoreceptors.

# HIP PAIN: Pelvis, Lower Extremity and Lumbar Tx with Counterstrain and other OMT

- **Iliacus TPs** –unilateral or bilateral are very useful for treatment of many conditions.
  - Often the postural muscle, Iliopsoas is part of the somatic dysfunction pain or function problem, and both treated at same time if unilateral or bilateral.
  - Bilateral “Frog Leg” positions for: lumbar stenosis, post lumbar laminectomy syndrome, lumbar spondylolisthesis, OB pre and post partum LBP, lumbar lordosis with MFP. Prostatitis, Interstitial cystitis,
  - Treating the Iliacus first often reduces hip pain and inflammation.

# ILIACUS

**Location of Tender Point:** Anterior, and deep in the iliac fossa.

**Anatomical Correlation:** Iliacus muscle.

**Direction to Press on Tender Point:** Press anterior to posterior.

**Treatment Position(s):** With patient supine, stand at the side of the table and support the patient's ankles on your thigh. Provide extreme flexion of the hips and knees and marked external rotation of the femurs of both legs. To fine-tune use slight rotation of the pelvis toward the Tender Point.

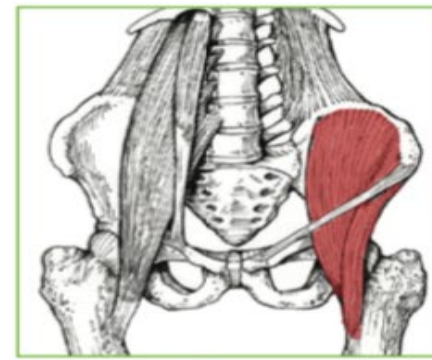
**Frequency of Occurrence:** Common to uncommon.

**Clinical Correlation(s):** May be present with gut problems.

**Associated Pain Referral Pattern:** Pain in the lumbar area and sometimes in the anterior groin and anterior thigh.

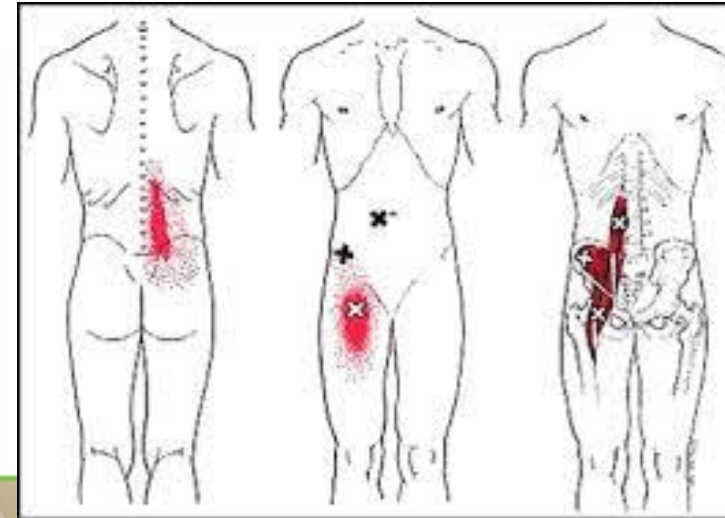
**Alternate Names/Nomenclatures:** None.

**Explanatory Notes:** None.



Iliacus muscle

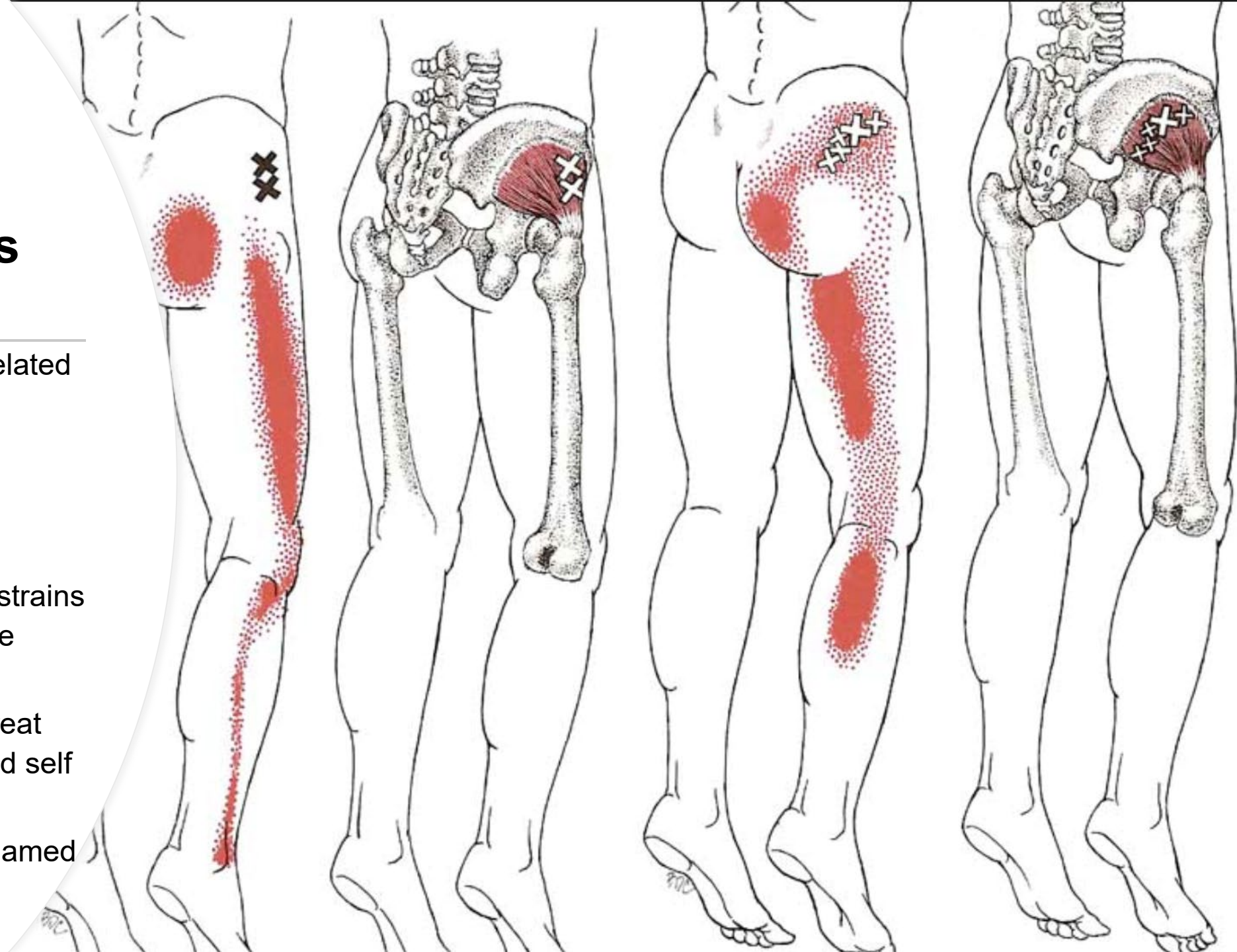
ILIACUS



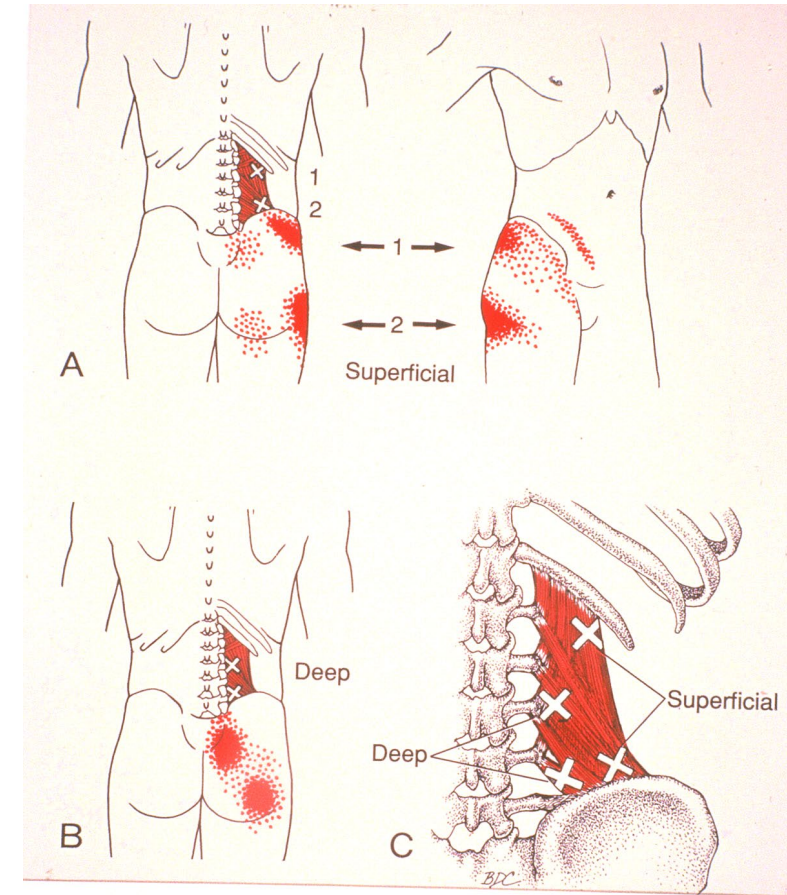
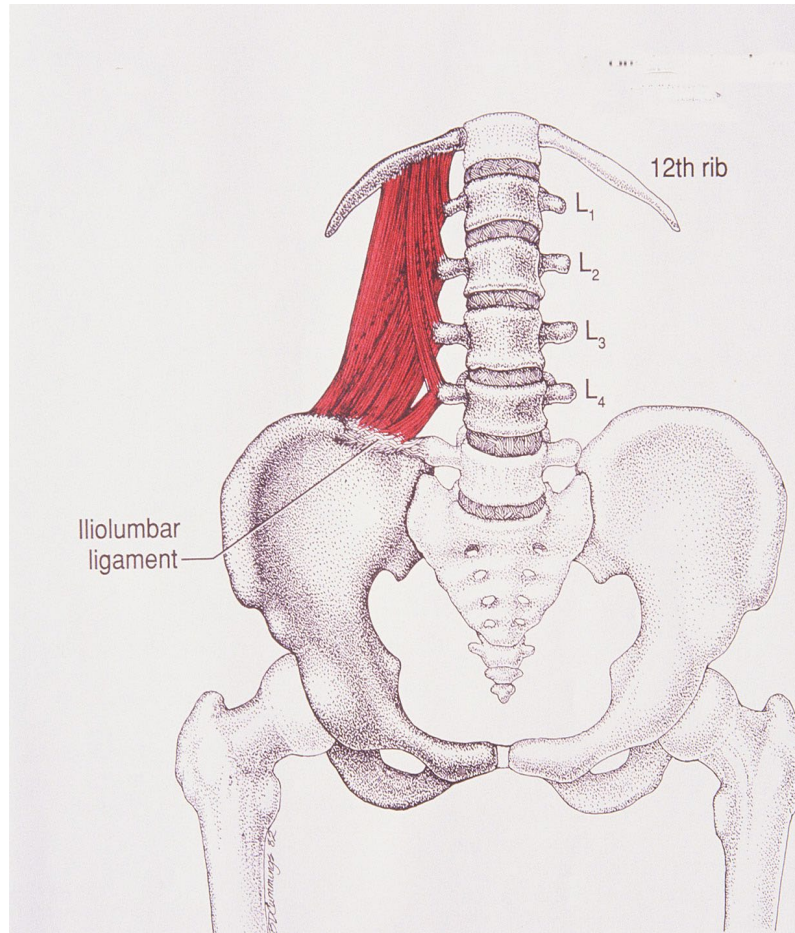


# Gluteus Minimus

- “Pain in the Hip”- is often related to acetabular or hip joint inflammation:
  - Mimics Sciatica
  - Osteoarthritis of hip
  - Deep hip sprains and strains or contusions from side impacts
  - Hard to find, easy to treat and can be chronic and self treatment is easy
  - Piriformis often gets blamed and treated



# QUADRATUS LUMBORUM MUSCLE

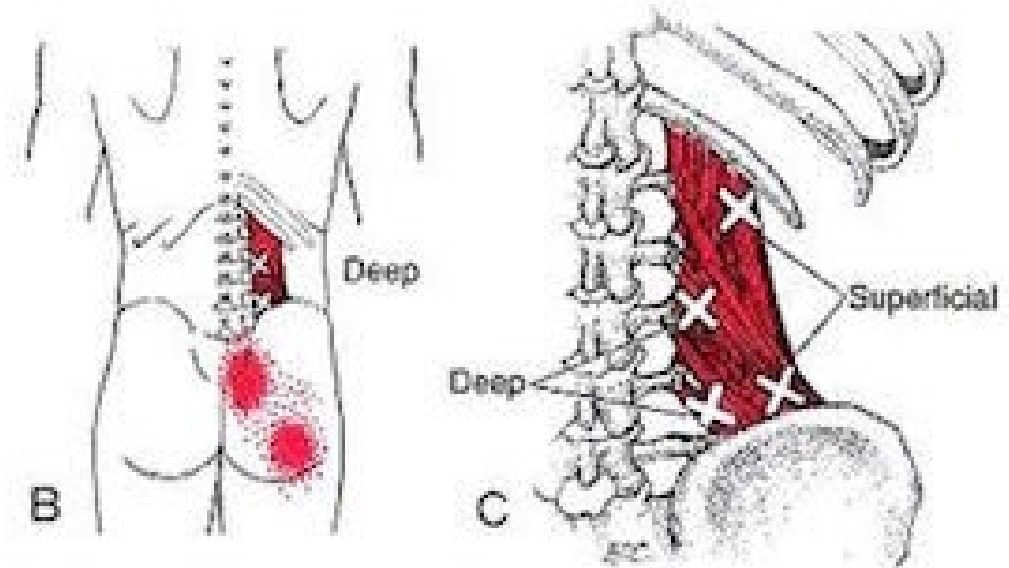
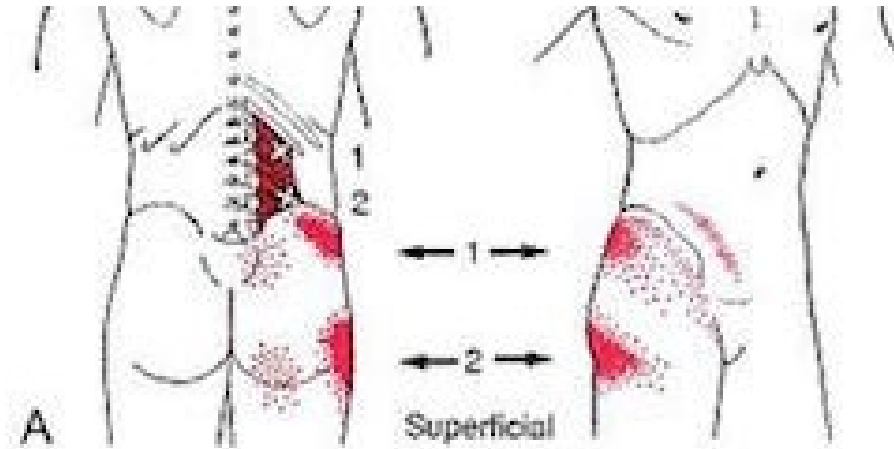


Quadratus Lumborum Referred Pain Patterns

- Notice that the significant pain referral pattern is located away from site of the muscle



# Quadratus lumborum Referred Pain Patterns



# Mr. PIRIFORMIS MUSCLE

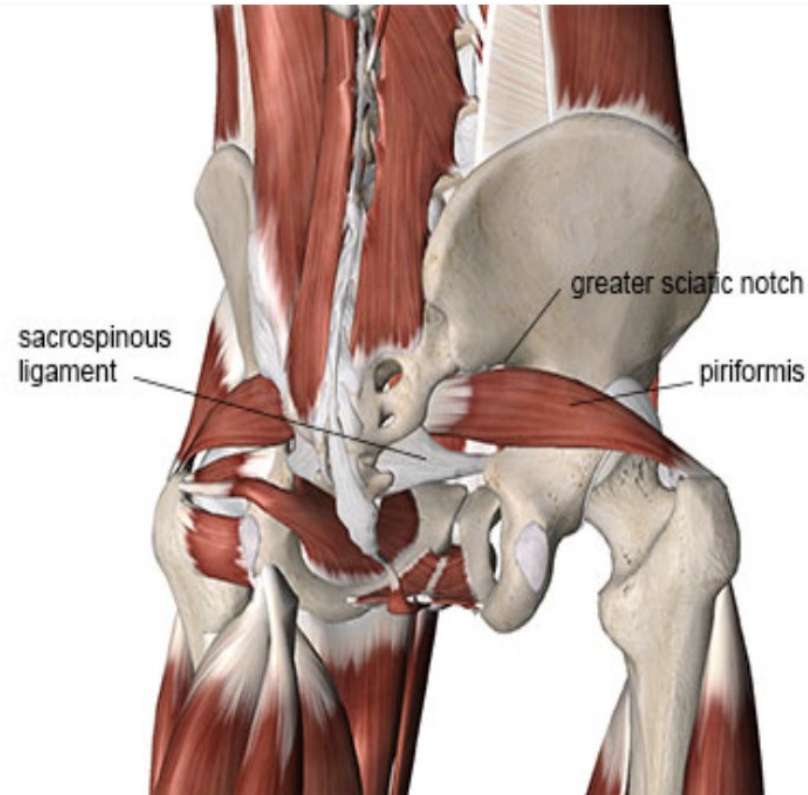
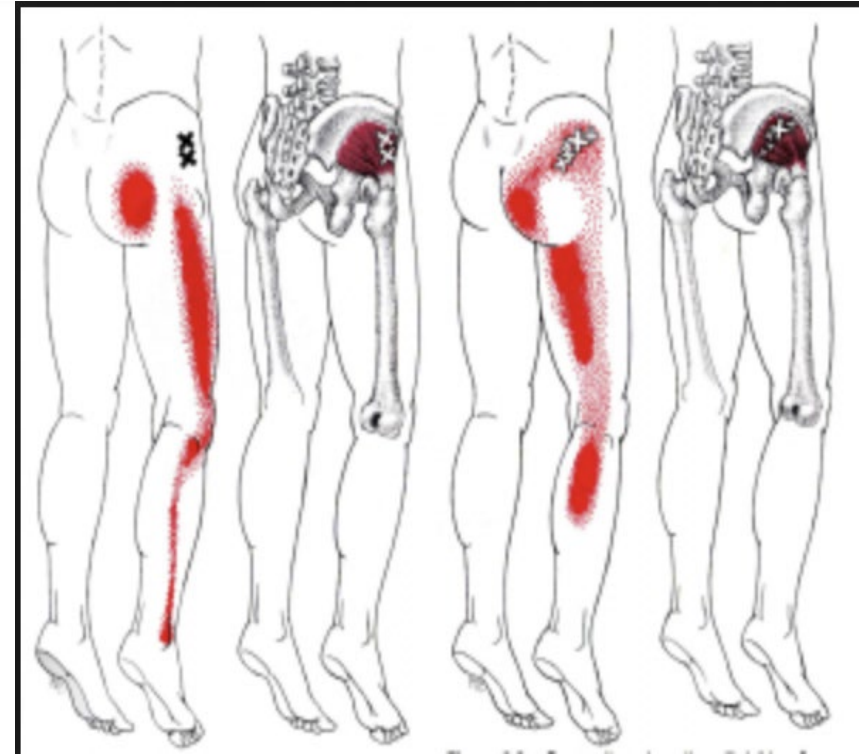
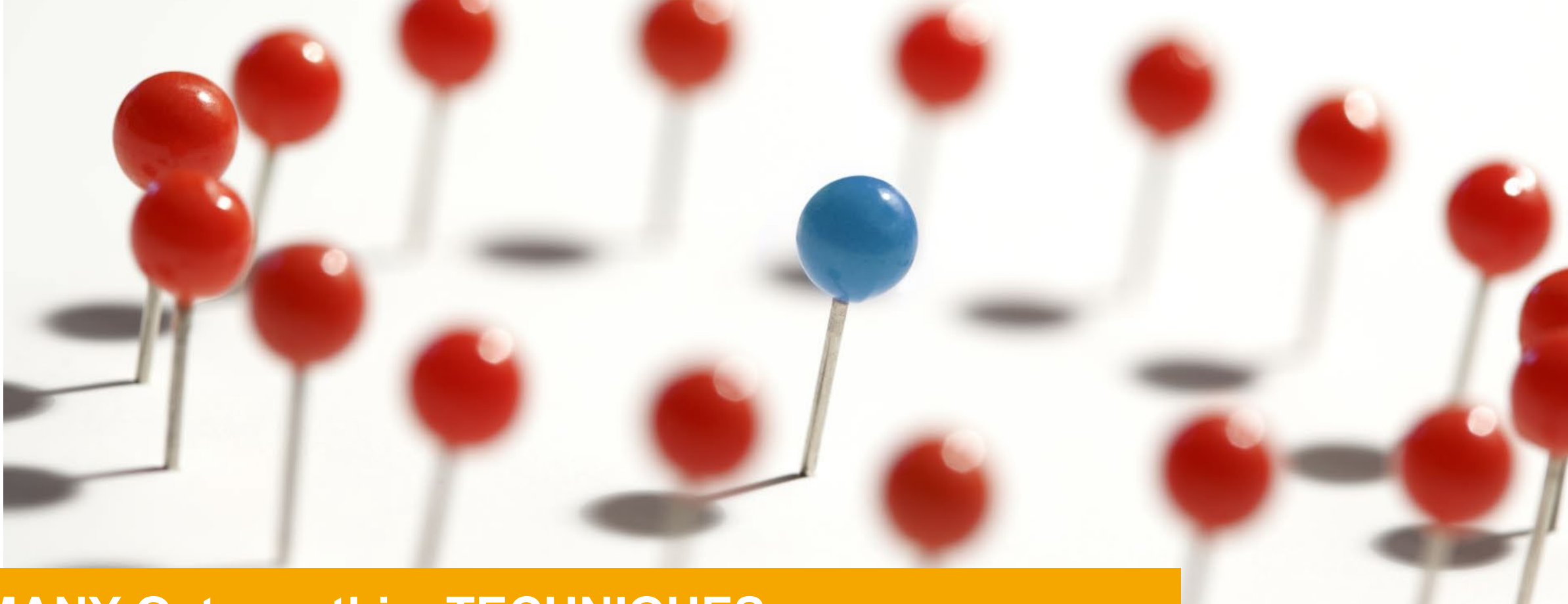


Image 1: Piriformis in relation to other nearby structures

Image is from 3D4Medical's Essential Anatomy 5 application



- Pain referral pattern is shown; this does not consider the pain of impingement on sciatic nerve if present.
- Blamed for most hip pain, common but not sometimes the major problem



## MANY Osteopathic TECHNIQUES

- We use many types of OMT according to acute or chronic, underlying pathology, and condition of patient.....
- We use OMT to treat Inflammation, rebalance facilitated segments, restore function and motion. Thereby improving healing and reducing pain.



## A.T. Still MD, DO Shoulder Techniques:

- “Counterstrain with an Attitude”
- Indirect then Direct Osteopathic Techniques
- Can start with a Counterstrain position, exaggerate then while keeping tensions at the segment, move the extremity to the barrier of motion.
- Can repeat several times if needed
- May be used on acute and chronic conditions and can be followed by Muscle Energy OMT
- **Will be covered in my OMT workshops**

# Muscle Energy OMT for Hip and Shoulder Problems

- May also be Diagnostic as well as Therapeutic
- Safe, analgesic and long lasting
- Often eliminates PT but exercise still need prescribed
- Simple to use: Patient gently pushes away from barrier of motion against the operator holding the position. Each time taking up the new barrier.
- Should push for 3-5 seconds, about 3 times, with NO PAIN on the counterforce





## Keep in mind for Extremities....

- **Imaging of extremities** is helpful but not often entirely diagnostic
  - Palpatory Osteopathic skills, functional testing such as standard Orthopedic testing maneuvers, myofascial pain patterns and use of Counterstrain positions can give a very accurate evaluation rapidly.
- SCS and MET are good choices for OMT, but also the Osteopathic exam and clinical response to the OMT often lends toward diagnosis.
- AT Still's OMT can be used in many cases as well as many other techniques..

# EXERCISE AND HOME THERAPY

- **\*\*Necessary Adjunct to OMT –is part of Osteopathy**
- Exercise and Supportive Therapy
  - Be specific in your treatment goals
- Stretch, Retrain and Strengthen
  - Simple at home treatments
  - Retraining is key to avoid reinforcing inhibitory reflexes
- Refer to who will individualize therapy based on kinesiology and muscle –tissue physiology.



# Keep in mind for Extremities....

- Imaging of extremities is helpful but not often diagnostic, use your Osteopathic skills
- Palpatory skills and functional testing such as standard Orthopedic testing maneuvers and use of Myofascial pain patterning , Counterstrain position response can help give a very accurate evaluation rapidly.
- Careful history and examination is important
- Pain is often a Liar, may be from other cause.
- Clinical Counterstrain and MET are very good choices for extremities, and *careful* articulatory OMT.
- Different OMT will be covered in my workshops.

See you there....



**Thank you!  
Any  
Questions?**



# Recommended Reading:





# Clinical References

- Myers, H., Devine, W., *Clinical Counterstrain, Compendium Edition*, 2012. pp 88-109 (Chapter 2 on Shoulder) and pp 149-160 (Chapter 6 on Lumbar, Pelvis and Hip).
- Hoppenfeld, S., *Examination of the Spine and Extremities*, 1976, Appleton. Lange.
- DiGiovanna and Schiowitz, *Osteopathic Approach to Diagnosis and Treatment*, Hip and Knee chapters.
- Ward, *Foundations for Osteopathic Medicine 2<sup>nd</sup> Edition*, pp. 623 - 627, 642 - 646.
- Greenman, *Principles of Manual Medicine*, Chapter 19: Lower Extremity, pp. 433-475.
- Seffinger, M., 2018. *Foundations of Osteopathic Medicine, 4th Edition*. Chapter 28G: Upper Extremity 664-673 Chapter 49: Osteopathic Consideration in Sports Medicine 1488-1496





## CLINICAL REFERENCES (continued)

- [Liu, Y., & Wang, J. \(2019\). The effect of the COVID-19 pandemic on the global economy. \*Journal of International Trade and Finance\*, 1\(1\), 1-10.](#)
- [Wang, J., & Liu, Y. \(2019\). The effect of the COVID-19 pandemic on the global economy. \*Journal of International Trade and Finance\*, 1\(1\), 1-10.](#)
- [Liu, Y., & Wang, J. \(2019\). The effect of the COVID-19 pandemic on the global economy. \*Journal of International Trade and Finance\*, 1\(1\), 1-10.](#)
- [Wang, J., & Liu, Y. \(2019\). The effect of the COVID-19 pandemic on the global economy. \*Journal of International Trade and Finance\*, 1\(1\), 1-10.](#)
- [Liu, Y., & Wang, J. \(2019\). The effect of the COVID-19 pandemic on the global economy. \*Journal of International Trade and Finance\*, 1\(1\), 1-10.](#)
- [Wang, J., & Liu, Y. \(2019\). The effect of the COVID-19 pandemic on the global economy. \*Journal of International Trade and Finance\*, 1\(1\), 1-10.](#)

# Recommended reading for extremities:

