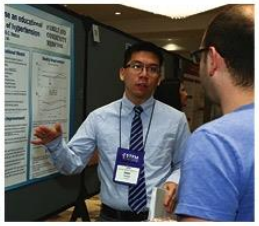
STFM Conference on
Medical Student Education



Enhancing Musculoskeletal Teaching During Clerkships

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Disclosures

- None

Objectives

On completion of this session, participants will be able to

- Describe two approaches that can be used on a clerkship to improve musculoskeletal learning.
- Describe two resources which can be used to improve musculoskeletal teaching.
- Describe the impact these approaches can have on student exam scores.

Musculoskeletal Content Important

- Large part of the practice of family medicine
- Part of what distinguishes us from General Internal Medicine
- Included in STFM's National Clerkship Curriculum (10% of acute presentations are MSK)
- Included on exams such as fmCases (4 of 33 cases) and NBME Family Medicine Subject Exam ("shelf")

Teaching MSK can be challenging

- Variable access to faculty members with enough expertise to be comfortable teaching it
- High variability between clinical sites
  - Student MSK experience ranges from minimal to extensive
- a

Our approach – 4 pronged

- Two hands on workshops
  - Knee injuries
  - Ankle and shoulder injuries
- Lectures on other topics
  - Common sports medicine issues
  - Osteoporosis
  - Low back pain
- 1 – 2 afternoons with Physical Therapists
- Sports Medicine clinic as a Family Medicine Continuity Clinic option

Testing

- Two end of clerkship exams
  - NBME Family Medicine Subject Exam - Our students take the Core + Chronic + MSK version
  - In-house exam
    - ½ standardized patient (1/9 stations is MSK)
    - ½ MCQ (about 10% of questions MSK)

Powerpoints Available

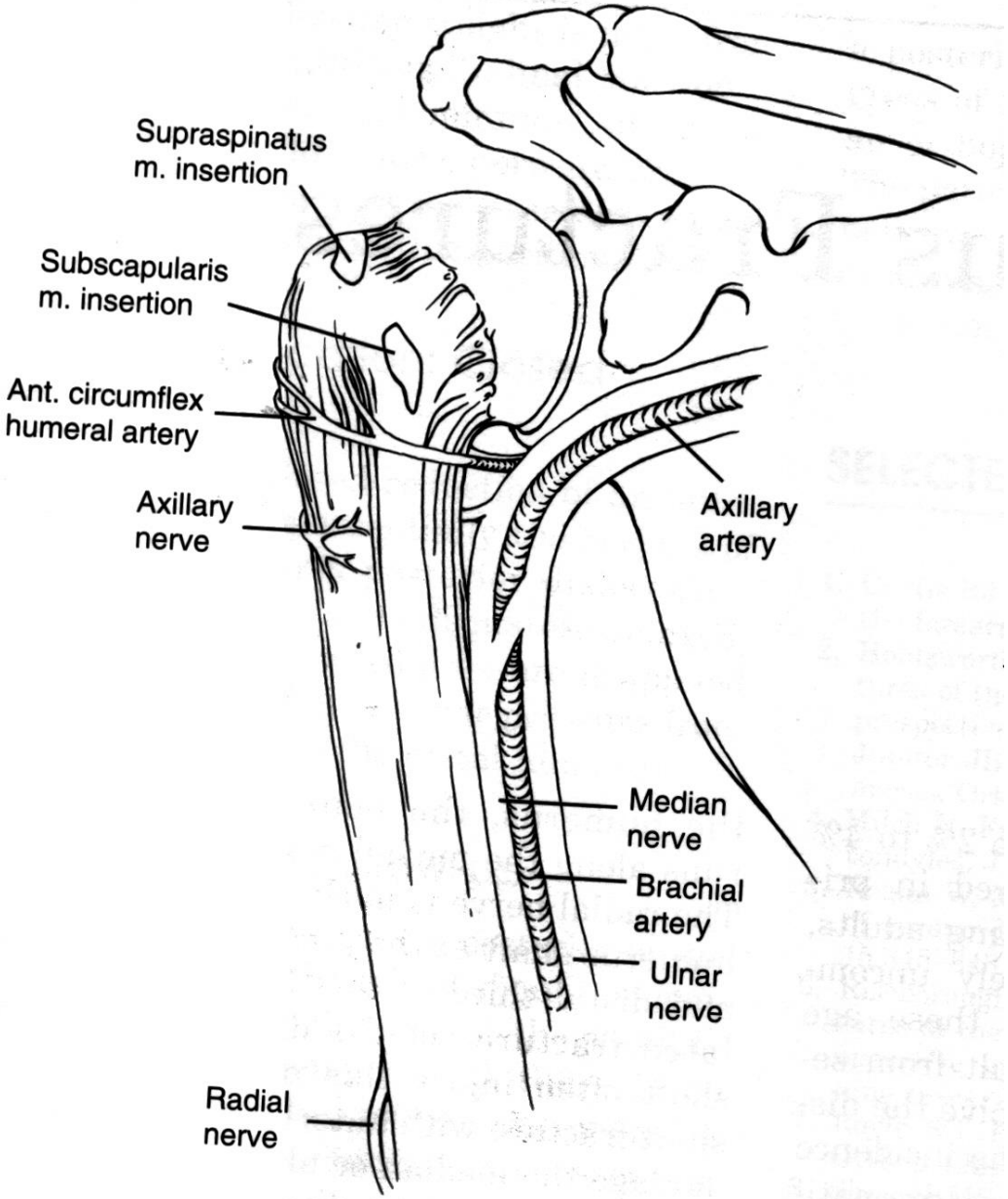
- Ankle injuries
- Shoulder injuries
- Knee injuries?
- Sports med?

Example: Shoulder Injuries powerpoint

Objectives

- Discuss epidemiology of shoulder injuries
- Review shoulder anatomy
- Discuss radiographic assessment of the shoulder
- Discuss diagnosis and treatment of selected common shoulder injuries
- Demonstrate a shoulder exam

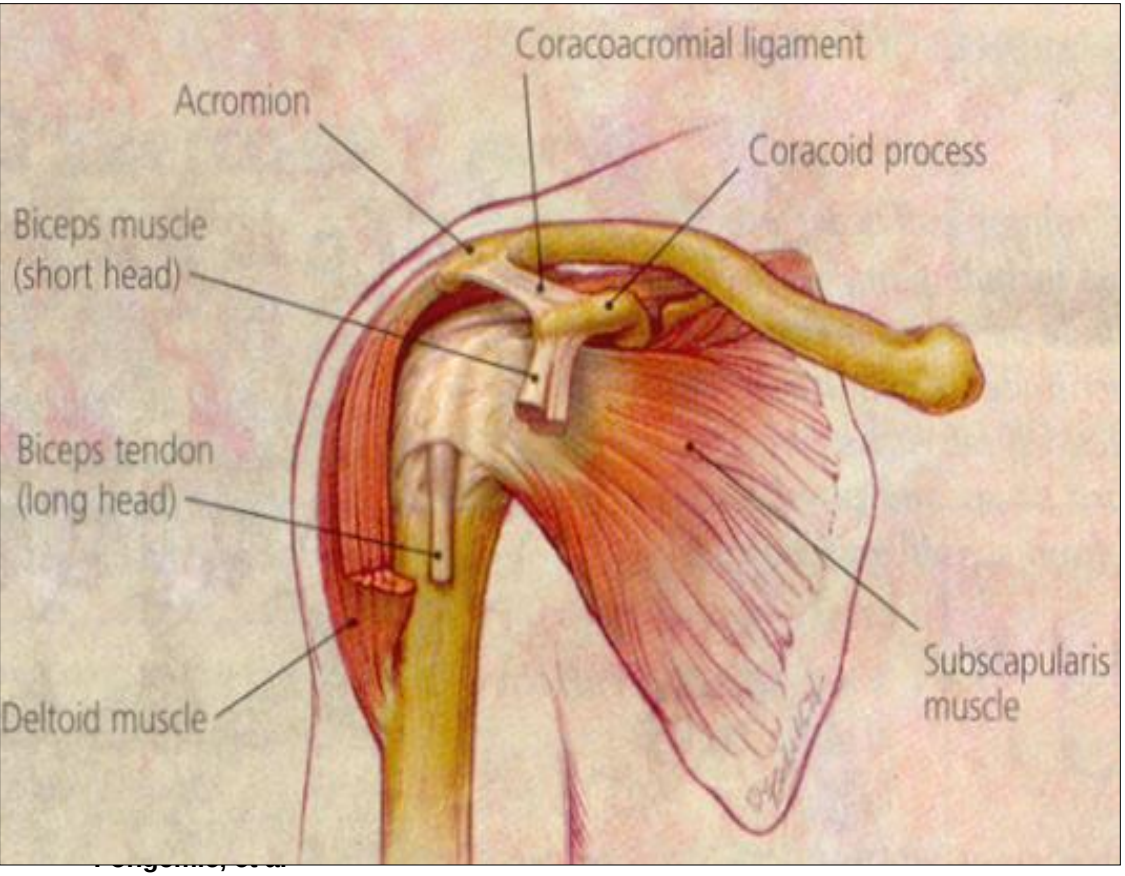
Anatomy



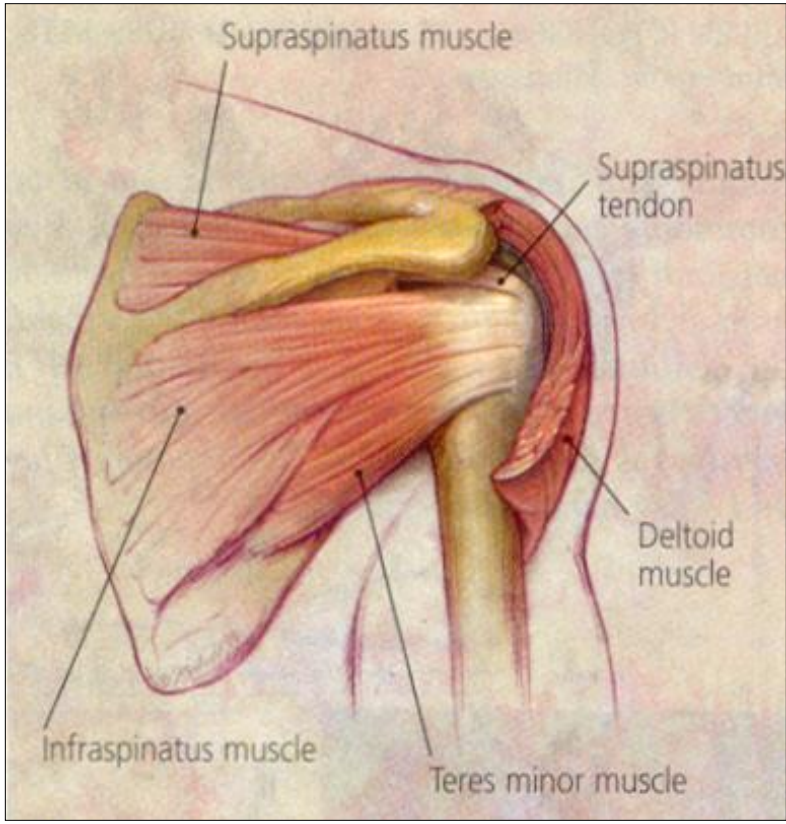
Eiff, et al

Anatomy of Rotator Cuff

Anterior View



Posterior View

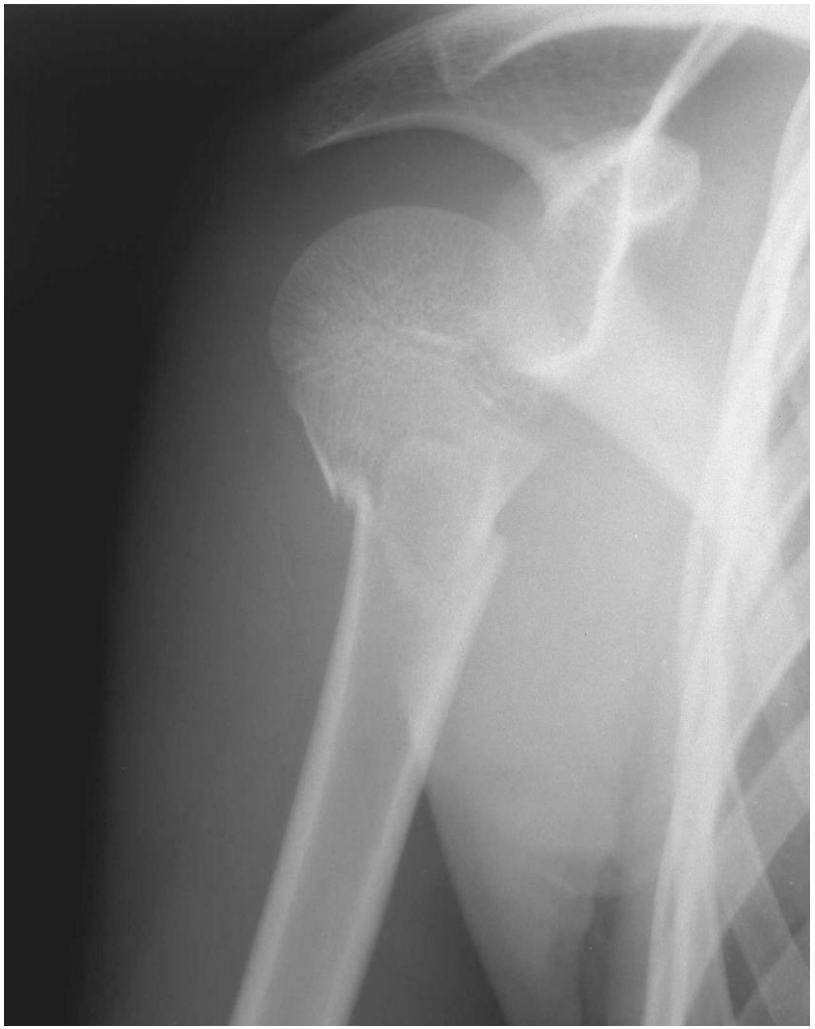


Shoulder Examination: Brief But Reasonably Thorough

- Inspection
- Neurovascular (in all acute injuries and whenever suspect neurological or vascular problem)
- ROM (abduction, internal rotation)
- Palpation of commonly injured structures
- Rotator cuff function
- Impingement
  - In forward flexion
  - In internal rotation
- Long head of biceps Woodward and Best
- Nerve root impingement
  - Spurlings test

10 year old who fell off bike

- How would you describe the fracture?



- Oblique fracture of proximal humerus with about 15 degrees of angulation and 0.5 cm of displacement

- Note that the patient has an open physis (growth plate) and the fracture line does NOT extend into the physis

Impingement/Bursitis/Rotator Cuff Tendinitis

- Symptoms
  - Shoulder pain - often not well localized, may radiate down arm (but NOT below elbow - that suggests nerve root source)
  - Pain worse if lift arm above horizontal
  - Pain often worse at night (especially if lie on that side)
  - Decreased function (can't do certain job tasks, chores, hook bra, etc)

If history isn't classic or it doesn't respond as expected to treatment, consider Other Causes of Shoulder Pain

- Cervical nerve root compression
- DJD (much less common; can affect glenohumeral or AC joint)
- Septic Joint
  - Marked pain with almost any passive ROM
  - Fever, etc
- Tumor/Mets
- Referred pain (e.g. gallbladder, lung CA)

Impingement/Bursitis/Rotator Cuff Tendinitis

- Examination
  - Decreased ROM, with pain starting around 90 degrees abduction and with internal rotation near hip
  - Often tender in subacromial area
  - Often positive impingement sign
  - Intact rotator cuff function

Injection of Subacromial Bursa

- Not a see one/do one/teach one
- It's an understand one/do one/teach one!
- Use steroid plus local anesthetic

Contraindications to Local Corticosteroid Therapy

Absolute
Infectious arthritis
Bacteremia
Periarticular cellulitis/ulceration
Hypersensitivity to steroid or vehicle
Osteochondral fracture
Adjacent osteomyelitis
Bacterial endocarditis
Uncontrolled bleeding disorder
Achilles and patellar tendons

Relative*
Anticoagulant therapy
Joint instability
Poorly controlled diabetes
Adjacent abraded skin
Internal joint derangement
Hemarthrosis
Joint prosthesis
Decubitus ulcers
Chronic foci of infection
Achilles and patellar tendons
Sickle cell anemia

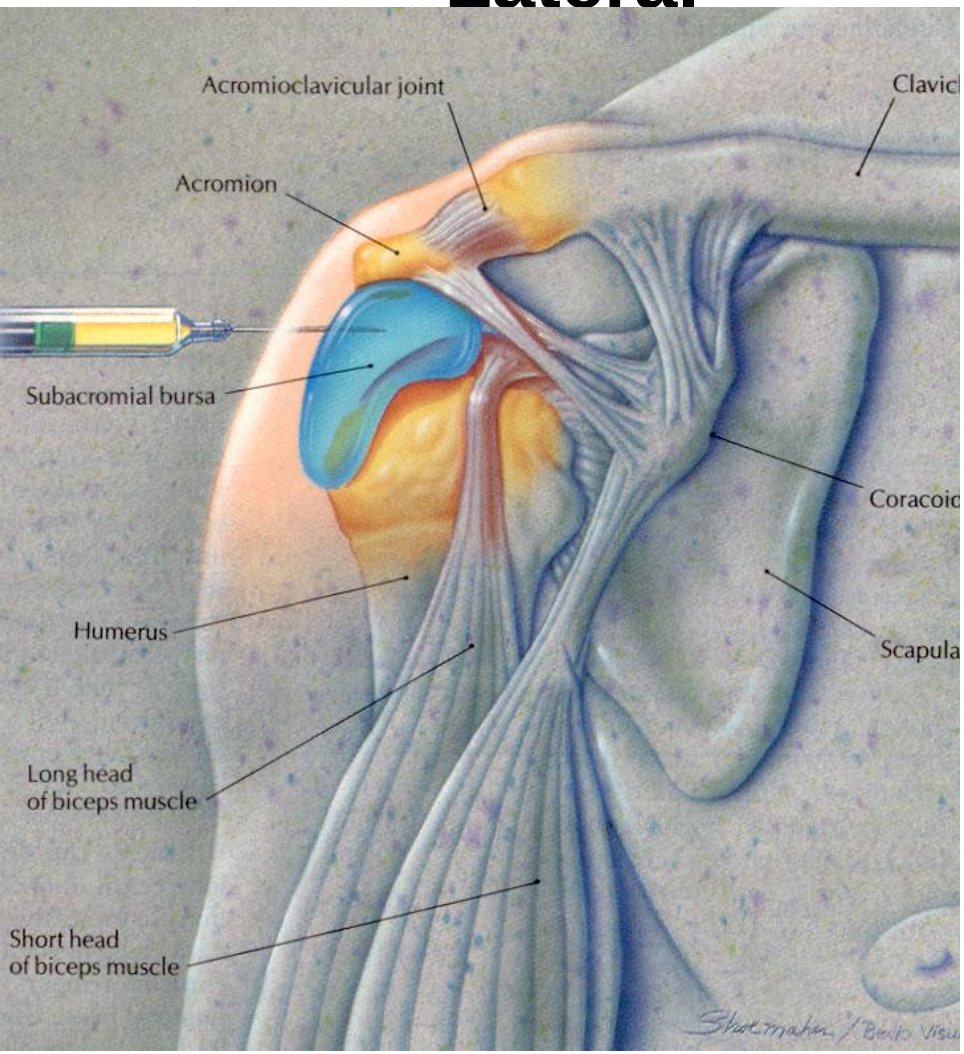
*—*These depend on the skill of the clinician and the specific indication for injection.*

Adverse effects of Local Corticosteroid Therapy

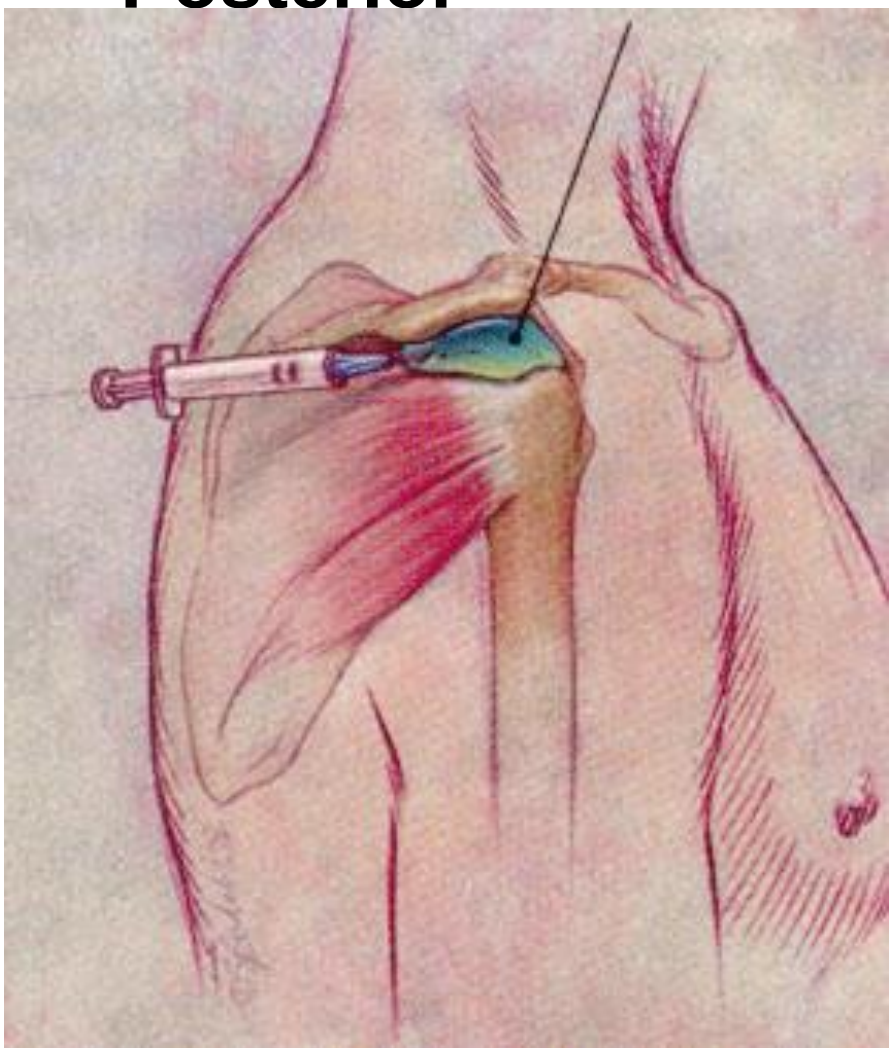
Complication	*Estimated prevalence*
Postinjection flare	2-5%
Steroid arthropathy	0.8%
Tendon rupture	<1%
Facial flushing	<1%
Skin atrophy, depigmentation	<1%
Iatrogenic infectious arthritis	<0.001 to 0.072%
Transient paresis of injected extremity	Rare
Hypersensitivity reaction	Rare
Asymptomatic pericapsular calcification	43%
Acceleration of cartilage attrition	Unknown

Two Approaches

Lateral



Posterior



Faculty perspective

- Rotations often relatively short
- Few opportunities for exam and interventions
- Specific improvements noted:
  - Willingness to do and present the appropriate exam in clinic
  - Prior exposure (even Sim Lab) means greater participation in first real-world experience/opportunities

grant

Student Perspective

- Workshops – how it impacted you, what classmates had to say about it; did it help set you up to be able to do a joint injection on a patient? Increase comfort level with MSK exam?
- Sports med lecs
- PT sessions if you did (or what you heard)
- How you felt about MSK questions on shelf

Impact on exam scores

National Board of Medical Examiners®
Subject Examination Program
Content Area Item Analysis Report
Modular Family Medicine Core + Chronic + Musculoskeletal

010 - U Florida College of Medicine — Test Date(s): 01/19/2018

›orting Group	Test Purpose	# Examinees	Order ID	# Scored Items
ɨical Students	End-Of-Course/Clerkship	23	B85898	97

Content Area Classification	FamCCM Item Difficulty (p-value) Schl	Natl	Difference (Schl-Natl)
Management: Musculoskeletal system: traumatic and mechanical disorders	1.00	.85	.15

- On average, the p for our students on MSK items is 10 higher than national av
- Below national av on only two items

Discussion

- Questions?
- How do you teach this material?
- What problems have you faced?

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