



RhAPP

RHEUMATOLOGY ADVANCED
PRACTICE PROVIDERS

Inaugural National Conference

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VIRTUAL CONFERENCE



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Injection Workshop

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Disclosure

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Faculty Disclosures

- Andrea Mace, PA-C: None
- Jennifer Simpson, DNP: None

Joints to Be Discussed

- 1st CMC joint
- Shoulder Joint
- Hip – Greater Trochanteric bursitis
- Knee joint
- Elbow injections – if time permits

Injection Preparation

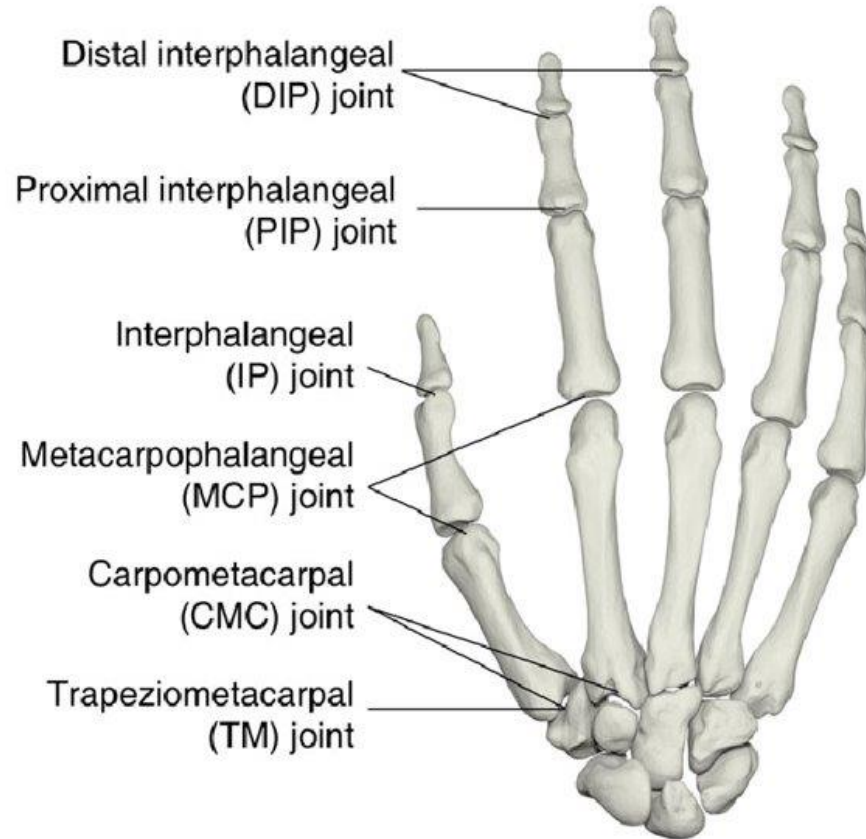
Clean technique

- Betadine swab/chlorhexidine swab
- Alcohol pad
- Band aid
- Syringe with medication and appropriate sized needle
- Ethyl chloride spray or local anesthetic
- Gauze
- Gloves
- Hemostat – if aspirating

Needle Sizes

- Large joint: 22 gauge or 25 gauge x 1.5 inches in length
- Medium joint: 25 gauge x 1.5 inches in length
- Small joint: 25 gauge x 1 inch or ½ inch in length

1st CMC Joint Anatomy



1st CMC Joint Injection Indications



- Arthritis

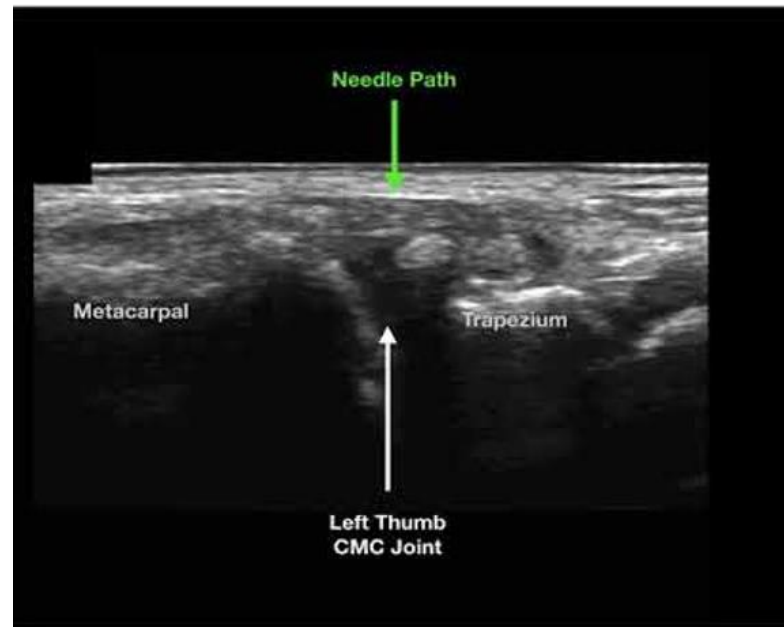
Positioning: Patient is sitting down with wrist on exam table. Radial side of the wrist is up. May need to distract the thumb to aid in opening the joint space

Landmarks

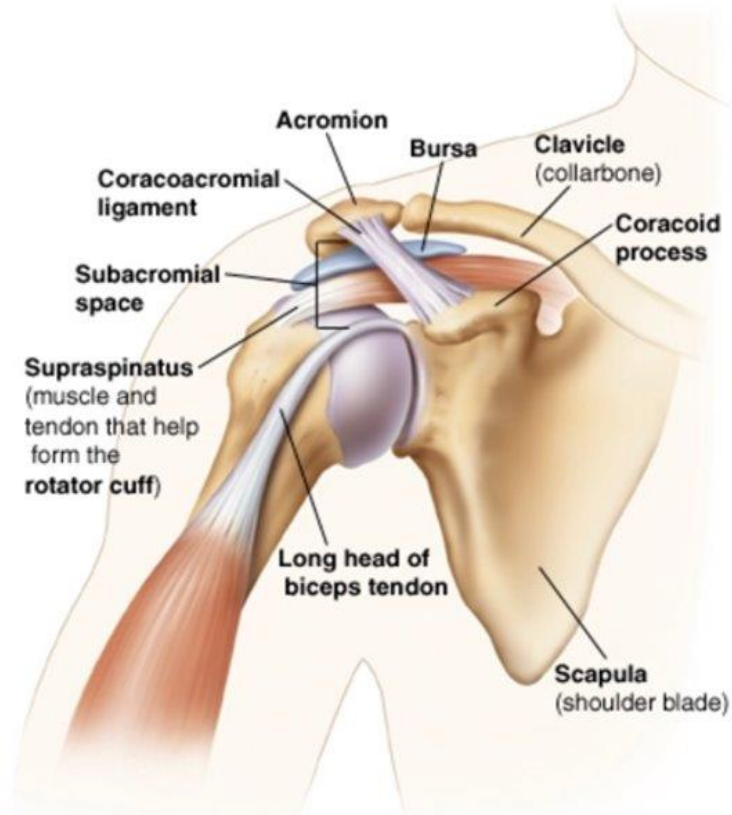
- EPL – extensor pollicis longus
- EPB – extensor pollicis brevis
- APL – abductor pollicis longus
- Anatomic snuff box



1st CMC Injection With Ultrasound



Shoulder Anatomy



Shoulder Injection Indications

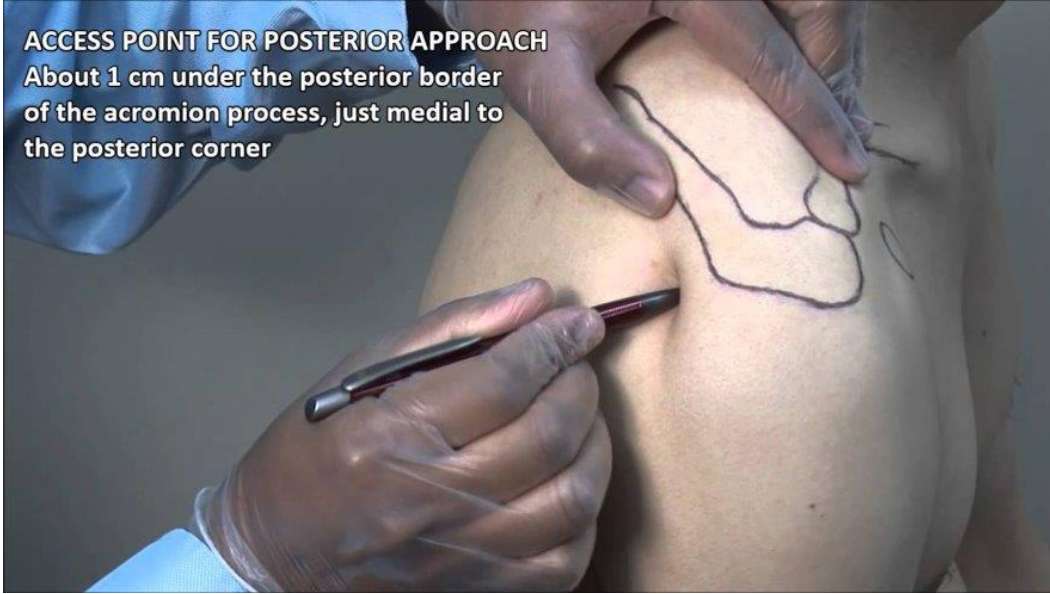
- **Primary arthritis of the glenohumeral joint**
- **Subacromial bursitis**
- **Acromioclavicular arthritis**
- **Rotator cuff tendonitis**
- **Impingement syndrome**
- **Adhesive capsulitis**
- Positioning: Patient sitting on the exam table in a gown with access to the posterior, lateral and anterior shoulder. Provider position will depend on approach for the injection.
 - Posterior: stand behind the patient
 - Lateral: stand posterior/lateral to the patient
 - Anterior: stand in front of the patient

Shoulder Arthritis on X-rays



Posterior Approach – Shoulder

ACCESS POINT FOR POSTERIOR APPROACH
About 1 cm under the posterior border
of the acromion process, just medial to
the posterior corner



- Subacromial bursa-
angle about 45
degrees up
- Glenohumeral joint-
angled 90 degrees
or perpendicular to
the shoulder

Lateral Approach – Shoulder



Fig. 5. Subacromial bursa injection with lateral approach.

Trochanteric Bursa Injection

Hip Bursa Anatomy

- The trochanteric bursa is located over the lateral prominence of the greater trochanter of the femur. Trochanteric bursitis is confirmed by palpation of tenderness, and occasionally swelling over this bursal region
- Can be precipitated by repeated pressure or trauma to the area
- Contributing factors – osteoarthritis, rheumatoid arthritis, obesity and leg-length discrepancies

Indication for Injection

- Confirmed trochanteric bursitis which has been resistant to conservative treatments (i.e. ice, heat, topical and/or oral NSAIDs, physical therapy)

Trochanteric Bursa Injection (con't)

Patient Positioning

- Patient should be positioned supine, lying laterally on opposite hip of the affected side

Landmark Palpation

- Identify the greater trochanter by palpating the femur from the mid-shaft proximally until the area of bony protrusion is reached
- The injection site is the point of maximal tenderness or swelling

Pharmaceutical/Equipment Choice

- Syringe: 5 to 10 mL
- Needle: 22 or 25 gauge 1.5 inch
- Corticosteroid: 40-80 mg of methylprednisolone or triamcinolone
- Anesthetic: 1:1 ratio of Lidocaine to Corticosteroid
- Ethyl Chloride can be used as option topical anesthetic
- Area should be cleaned using sterile technique

Approach: Needle should be inserted at 90 degree angle to skin at the area of most tenderness until resistance is met by bone or needle is fully inserted. If resistance is met, needle should be withdrawn very slightly (2-3 mm), aspirate and then inject full amount of syringe



Intra-articular Knee Injection/Aspiration

Knee Anatomy

- Two functional joints – the femoral-tibial and the femoral-patellar

Indication for Injection/Aspiration

- Relieve discomfort associated with effusion
- Aid in diagnosis of unexplained effusion (rule out septic arthritis, should be performed immediately if suspected i.e. monoarticular red, hot swollen joint)
- Corticosteroids for advanced osteoarthritis or other noninfectious inflammatory arthritides such as RA, gout or CPPD
- Visco-supplementation used to treat the pain of knee osteoarthritis

Intra-articular Knee Injection (con't)

Patient Positioning

- For aspiration patient should be supine with the knee slightly flexed with posterior support
- For injection can be supine or seated with legs at 90 degrees dangling from exam table

Landmark Palpation

- Knee joint can be accessed medially, laterally or anteriorly. Choice is provider preference but lateral is most common. Begin by palpating all borders of the patella, needle insertion should at the deepest groove

Pharmaceutical/Equipment Choice

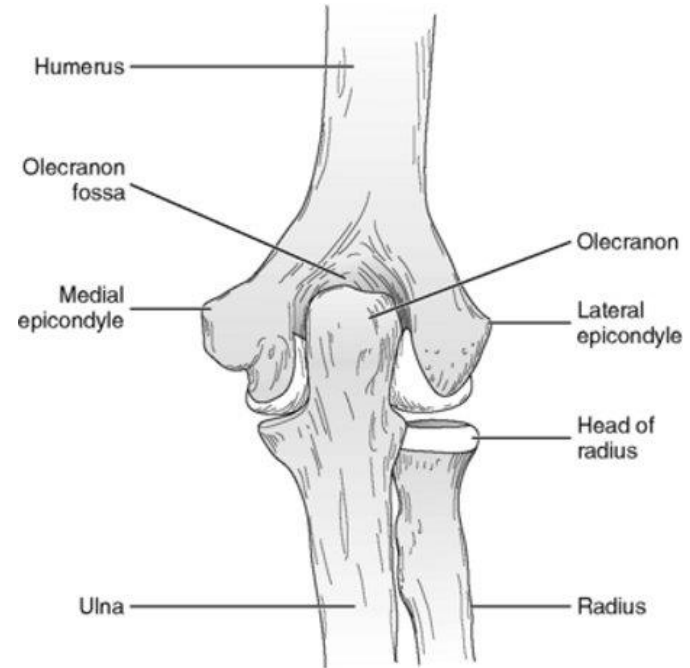
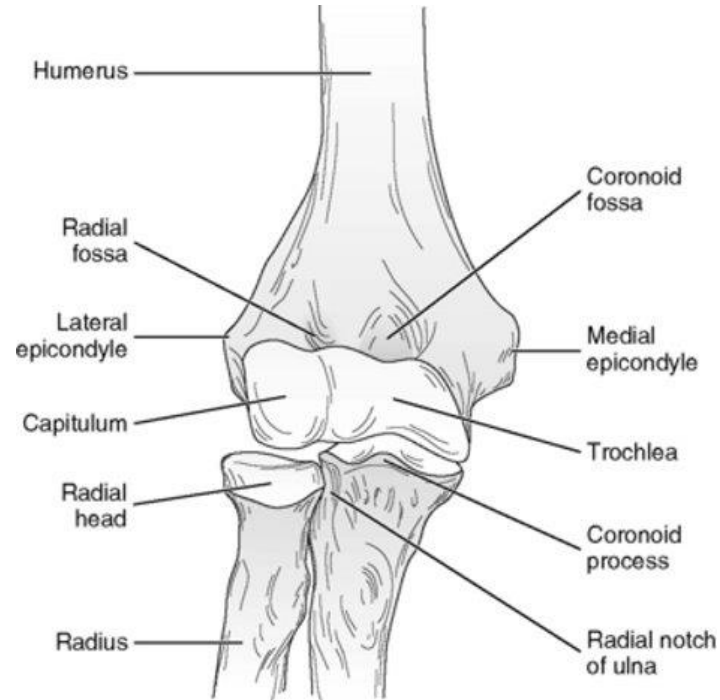
- Syringe: 5 to 10 mL for injection, 20 mL or larger for aspiration
- Needle: 22 gauge 1.5 inch for injection, 18-20 gauge for aspiration
- Corticosteroid: 40-80 mg of methylprednisolone or triamcinolone
- Anesthetic: 1:1 ratio of Lidocaine to Corticosteroid
- Ethyl Chloride can be used as option topical anesthetic
- Area should be cleaned using sterile technique



Approach: In the anterior approach, the knee is flexed 60 to 90 degrees, and the needle is inserted just lateral to the patellar tendon and parallel to the tibial plateau. In seated position, needle is inserted into the soft tissue between the patella and femur directed at a 45-degree angle aiming behind the patella to the middle of the joint. For aspiration, injection 1-2 mL Lidocaine and aspirate until no longer able, then inject corticosteroid.



Elbow Anatomy

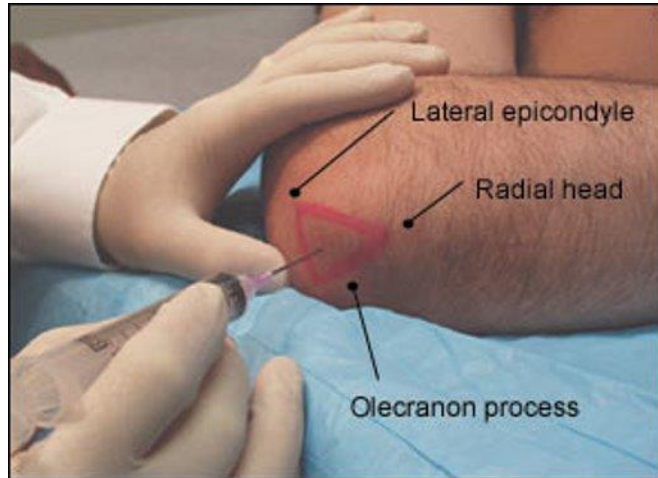


Elbow Injection Indications

- Arthritis
- Lateral Epicondylitis – Tennis elbow
- Medial Epicondylitis – Golfer's elbow
- Ulnar neuritis
- Olecranon bursitis

Elbow Joint Injection

- Positioning:
 - Patient's resting arm on exam table with access to posterior aspect of the elbow



Medial Epicondyle Injection

- Positioning
 - Patient laying supine on exam table with affected elbow/arm externally rotated



Lateral Epicondyle Injection

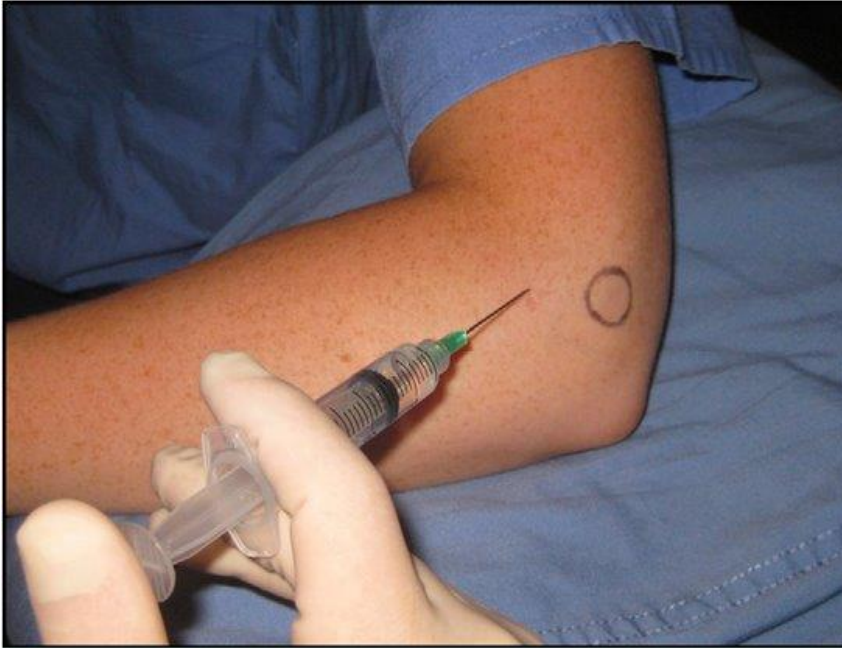


Figure 2 Lateral epicondylitis injection is performed w

- Positioning:
 - Patient sitting in a chair with elbow resting on exam table

Olecranon Bursitis Injection/Aspiration

- Positioning
 - Patient sitting in exam chair with posterior aspect accessible



Resources

- Rheumtutor.com
- <https://www.aafp.org/afp/2002/1201/afp20021201p2097-f1.jpg>
- <https://www.youtube.com/watch?v=jo3gO5BLm4Q>
- <http://tayloredtraining.ca/movement-recovery/shoulder-pain-and-what-you-need-to-know/attachment/shoulder-2/>
- <https://www.youtube.com/watch?v=YXtQQAd4n1E>
- <http://www.imreference.com/rheumatology/rheum-shoulder-pain?tmpl=%2Fsystem%2Fapp%2Ftemplates%2Fprint%2F&showPrintDialog=1>

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- <https://i.ytimg.com/vi/5eYfuyXczL8/maxresdefault.jpg>