

Approach to Shoulder Elbow

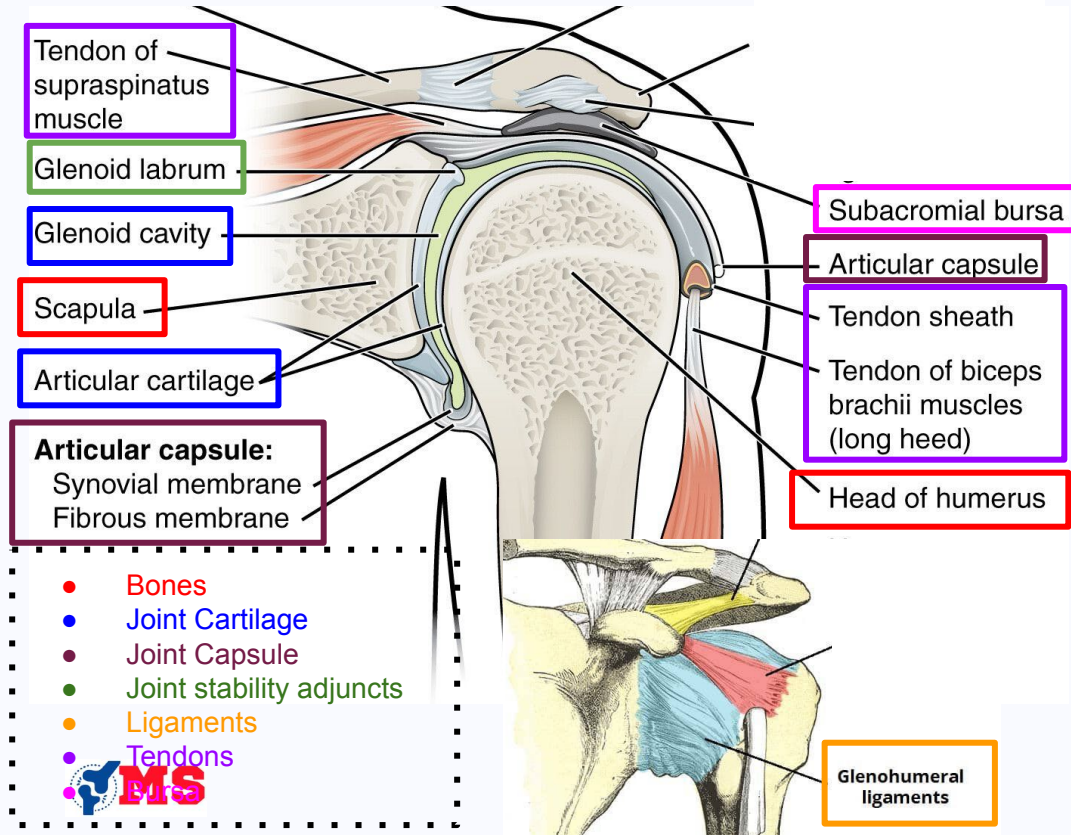
Mok Ying Ren

Approach to Shoulder Pain

Linking *History* to Anatomy

What can go wrong in the *shoulder* joint?

- **Bones**
- **Joint Cartilage**
- **Joint Capsule**
- **Joint stability adjuncts**
- **Ligaments (connects bone to bone)**
- **Tendons (connects muscle to bone)**
- **Bursa**

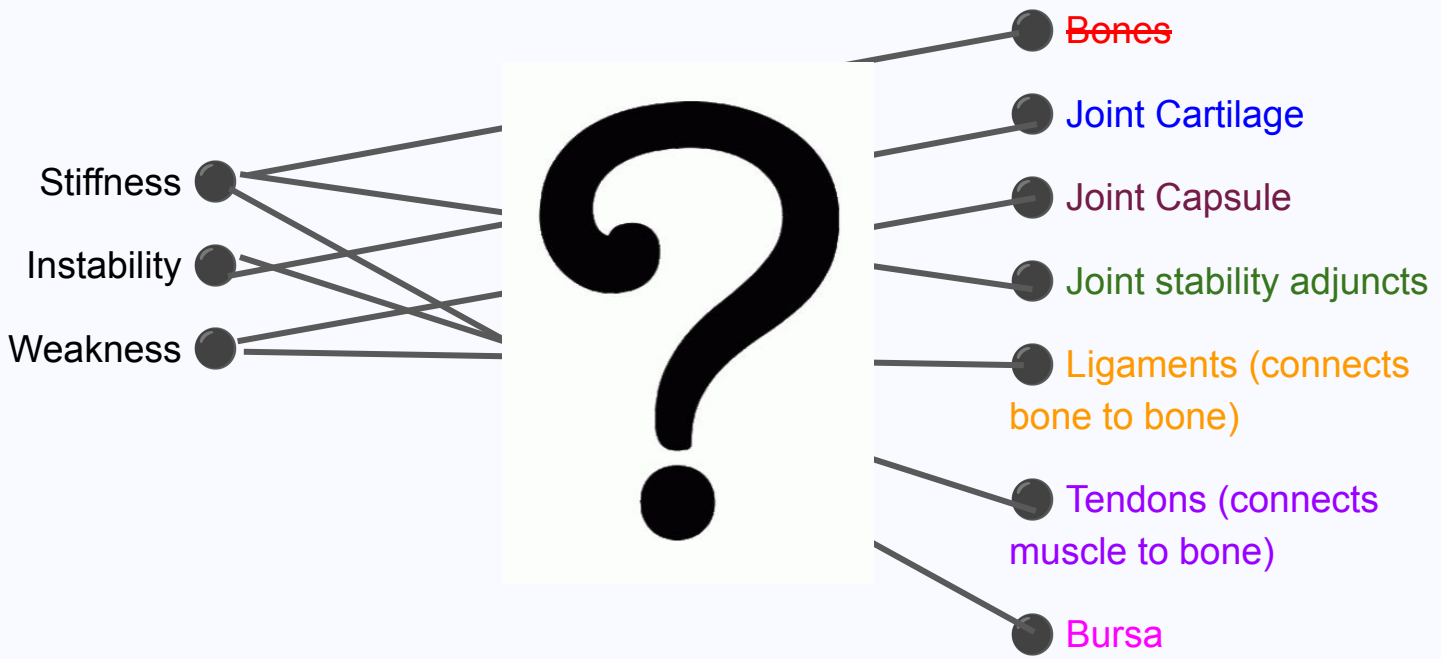


How can History guide us?

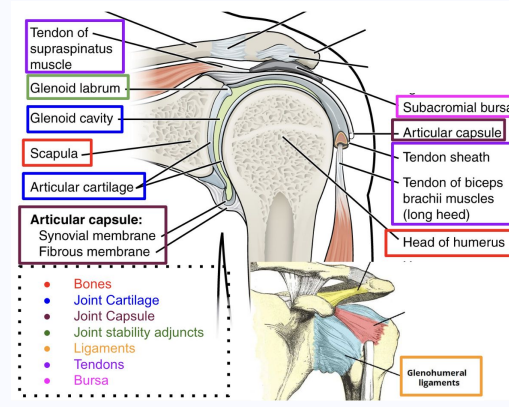
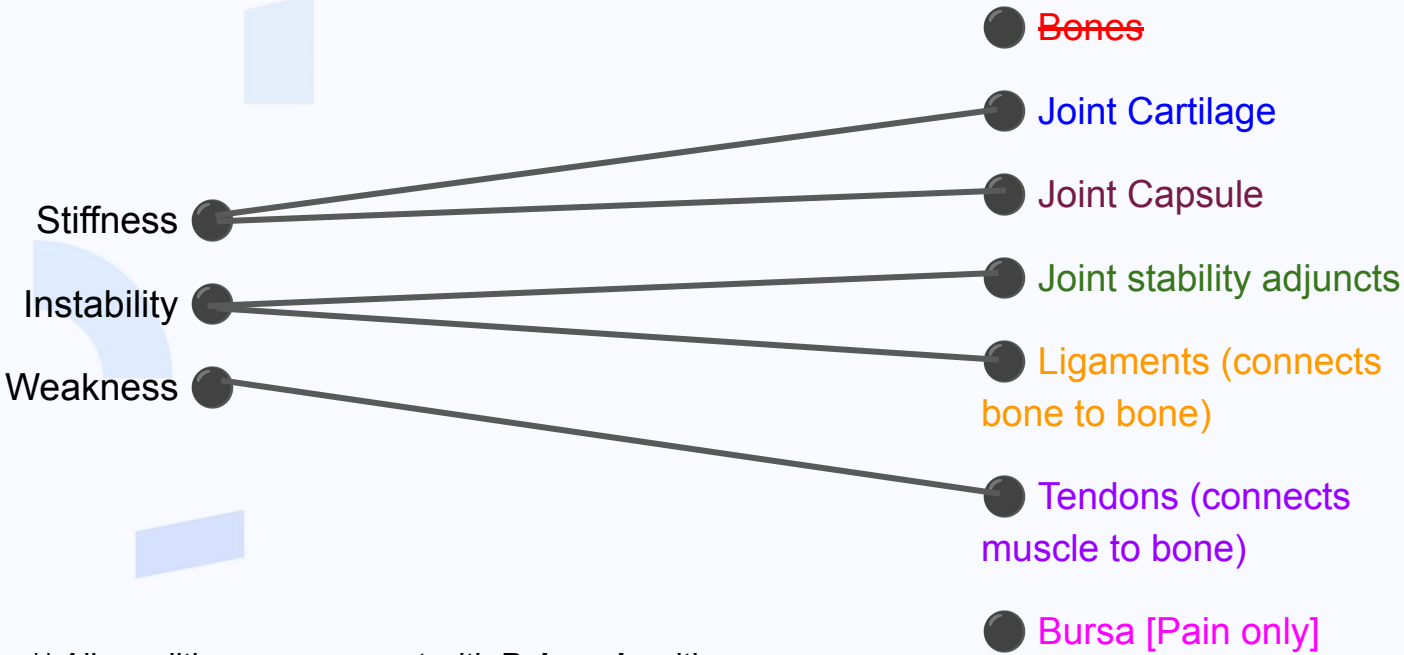
- **Pain** is a useful starting point for any history taking because any damaged structures should result in pain
- Once there is pain, we continue taking history with your SOCRATES acronym
- Associated Symptoms are most useful - How do we listen and ask about them?

Site	Anatomical correlation
Onset	Acute/ Insidious/ Acute on Chronic/ On and Off
Character	Subjective - Dull/ Sharp/ Pulling...
Radiation	TRO Spine cause
Associated Symptoms	Shoulder Specific - Stiffness, Weakness, Instability
Time/ Duration	Mechanical vs Inflammatory (Persistent with activity vs better with warm up) Chronicity - days vs years
Exacerbating	Mechanical vs Inflammatory (Activity vs rest)
Severity	VAS Score 0-10

Diagnosis is matching Symptoms to Anatomy



Connection between Symptoms and Anatomy



** All conditions can present with **Pain only** with no associated symptoms, if the issue is mild.

** Pain can result in “stiffness” and “weakness” and “instability”



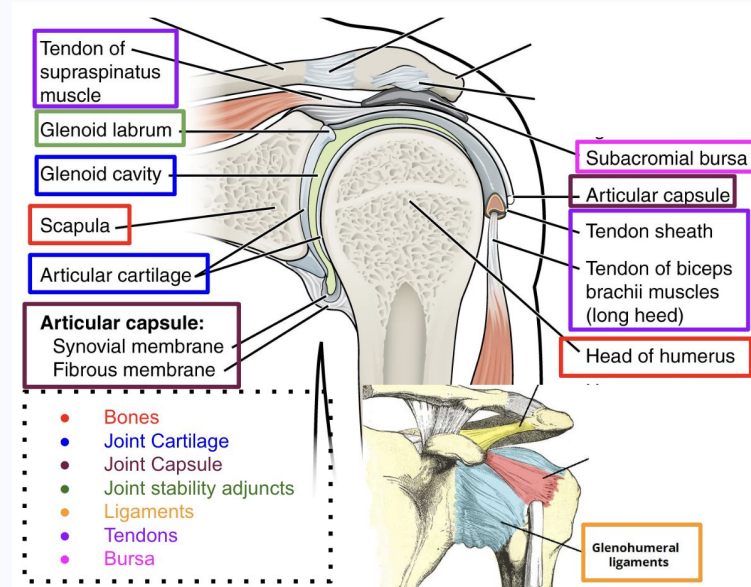
How to Ask Associated Symptoms?

- Stiffness
 - Do you feel stiff?
 - Do you have any issues reaching for things? Undergarments?
- Weakness
 - Do you feel weak?
 - “Like no strength”?
- Instability
 - Do you feel your shoulder is loose?
 - Does it pop out?
 - Do you feel like it will dislocate/ pop out in certain positions?



Summary of *Patterns* in the **Shoulder Joint (GHJ)**

	History - Ask for associated symptoms
Joint Cartilage	Stiffness +/- Pain
Joint Capsule	Stiffness +/- Pain
Adjuncts + Ligaments	Instability +/- Pain
Tendons - Tear	Weakness +/- Pain
Tendons - Inflammation	Pain only
Bursa	Pain only



** All conditions can present with Pain only with no associated symptoms if the issue is mild.

** Pain can result in “stiffness” and “weakness” and “instability”

Approach to Shoulder Pain

Linking History and *Physical Examination* to Anatomy

Ortho Made Simple

Examination of the Shoulder

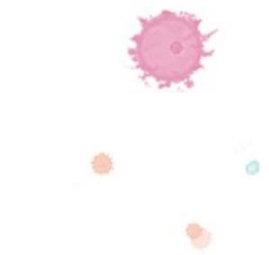
Ortho Made Simple - Physical Exam of the Shoulder

<u>1. Inspection</u>	<u>2. Range of Motion</u>	<u>3. Palpate</u>	<u>4. Power</u>
	Looking for STIFFNESS	Looking for SITE of PAIN	Looking for WEAKNESS
Exacerbation of PAIN			
<u>5. Special Tests</u>	<u>6. Neurovascular</u>	<u>7. Function (if asked)</u>	<u>8. Complete/ Offer</u>
Looking for INSTABILITY			



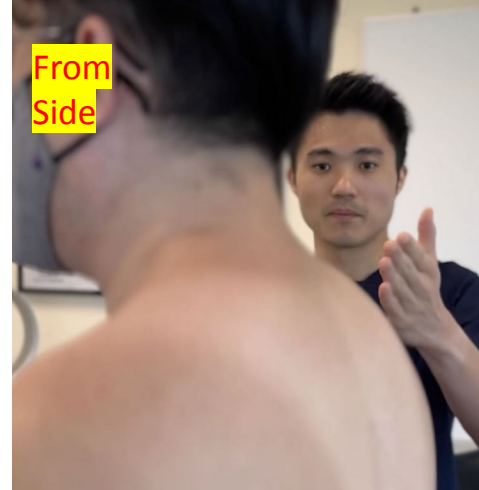
1. Inspection

- Expose
- Walk around patient
- Look for scars, deformity, swellings, erythema, wasting



1. Inspection

- Key is to EXPOSE fully and walk around the patient, looking everywhere
- Look for and mention some negatives:
 - Deformity
 - Scars
 - Wasting



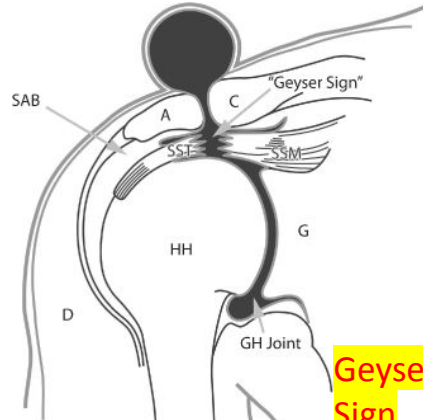
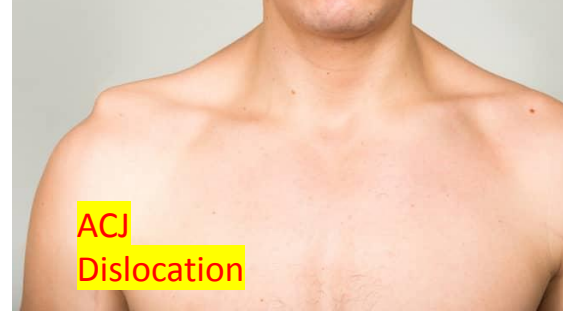
Common Scars

- Clavicle fixation
- Deltopectoral approaches (Proximal humerus fracture ORIF, replacements)
- Deltoid split approaches (open RC repairs)
- Arthroscopy portals



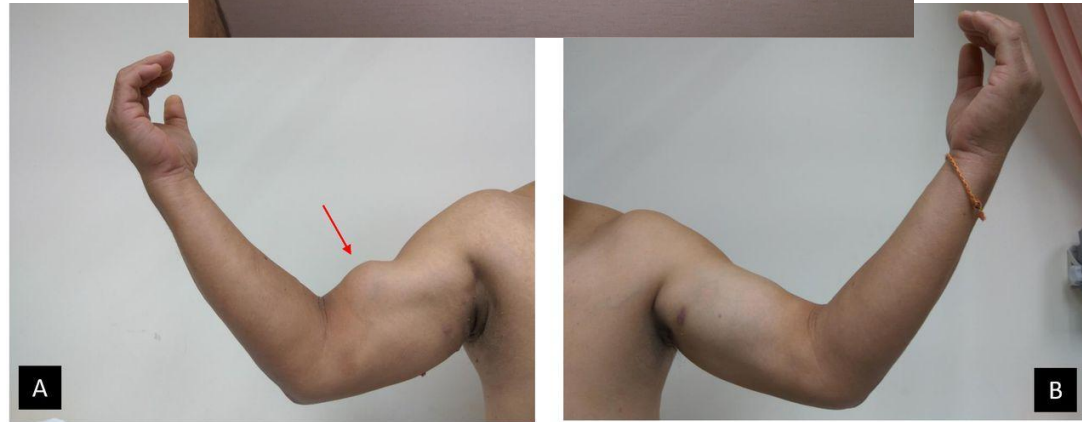
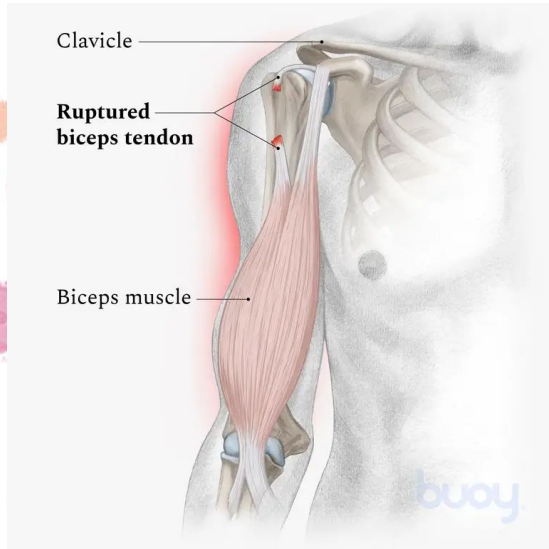
Chronic Deformities

- Acromioclavicular Joint Dislocation - resulting in asymmetry
- "Geyser Sign" - Massive Rotator Cuff tear with ACJ insufficiency
- Clavicle Malunion



Popeye Sign

- Lump over the distal portion of the upper arm
- **Long head** biceps tendon rupture



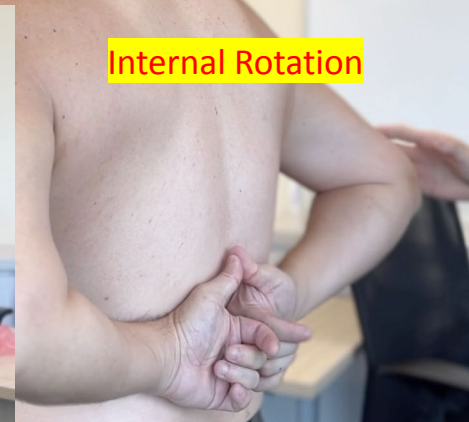
2. Range of Motion

- "Follow me"
- Flexion
- Abduction
 - Repeat from back and comment "symmetrical movements of scapula" (Not required)
- External Rotation
- Internal Rotation
- *If AROM limited, check PROM*



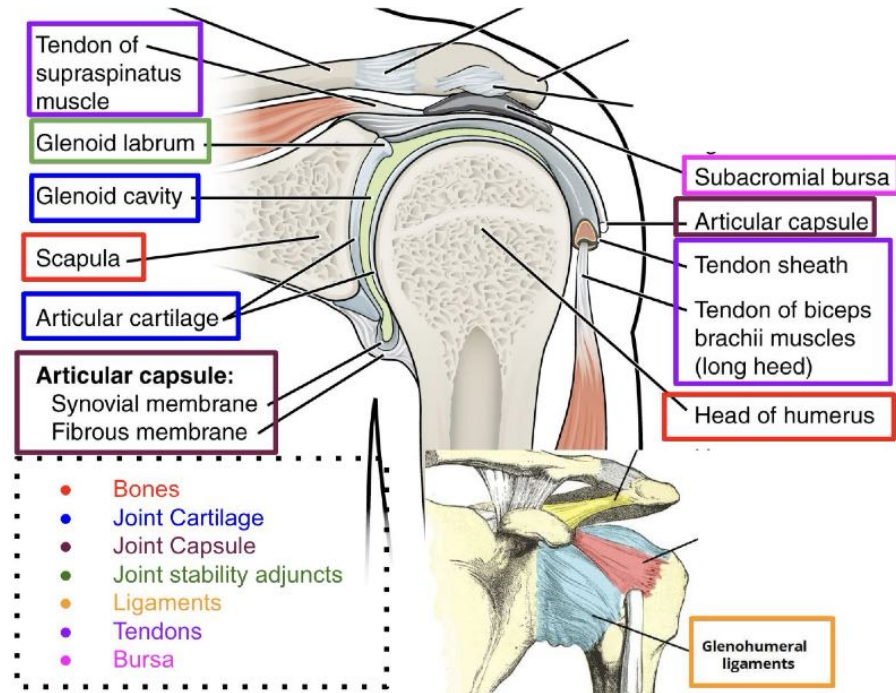
2. Range of Motion

- **Active "Follow me"**
 - Flexion
 - Abduction
 - Observe for *painful arc*
 - External Rotation
 - Internal Rotation (level is by vertebrae level)
 - **NO NEED EXTENSION**
- Check **Passive** only when active range is limited



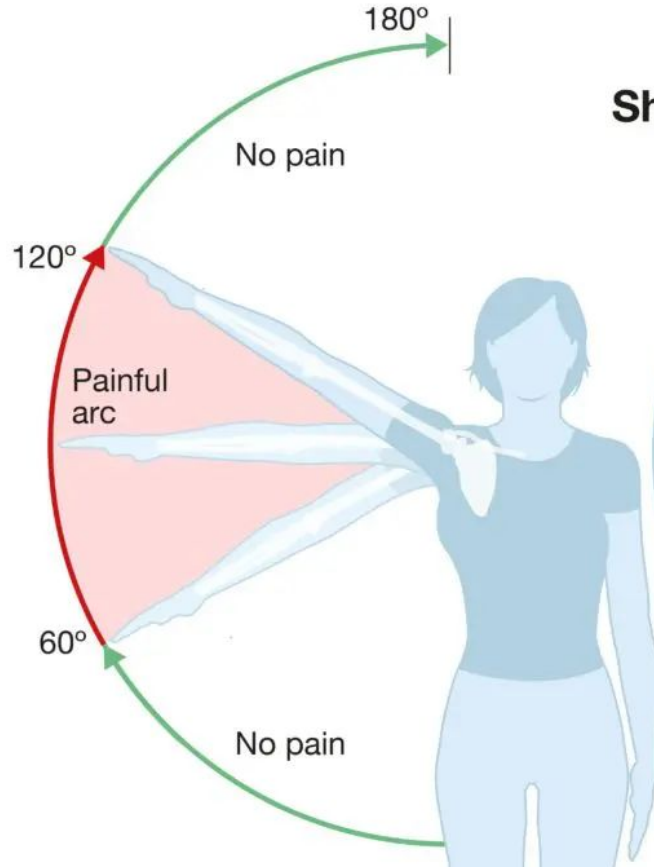
Active vs Passive ROM - 3 Scenarios

- Active is Full, Passive **will be** full
 - = Patient is at least able to move against gravity
 - Normal or mild weakness → Only power testing later will reveal mild weakness
 - **AROM = PROM = Full = Normal**
- When Active is limited, but Passive is full
 - = Issue of **Weakness**. i.e. the Arm is unable to go against gravity (Can try to elicit **drop arm sign**) → Confirm with power testing
 - ≠ **Stiffness**
 - **AROM < PROM = Weakness**
- When Active is limited and Passive is also limited
 - = Issue of **Stiffness**. I.e. there is a mechanical block in either the capsule (frozen shoulder) or joint cartilage (arthritis)
 - **AROM = PROM = Limited = Stiffness**

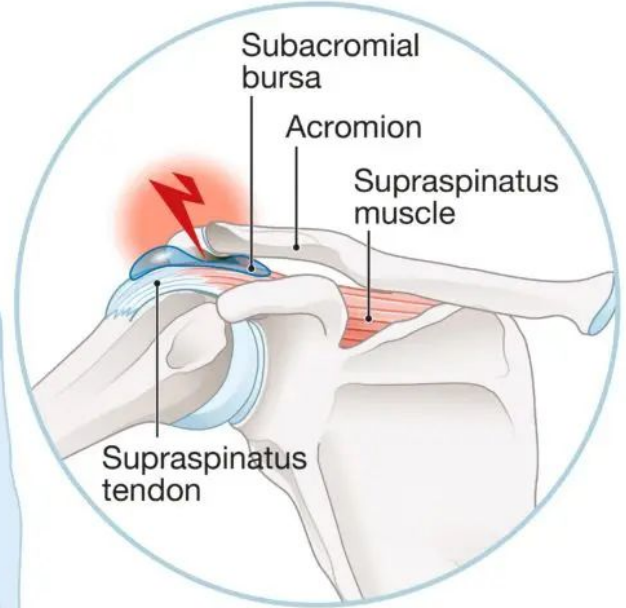


Painful Arc

- Evaluated during ROM assessment when patient complains of pain in this arc

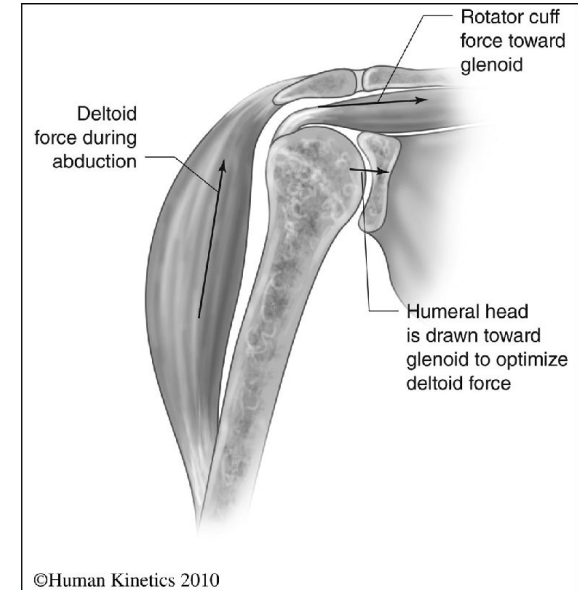
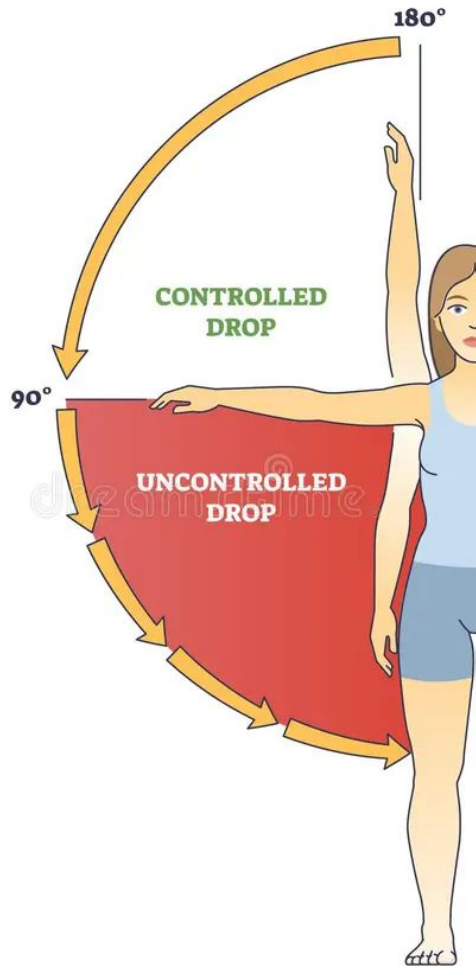


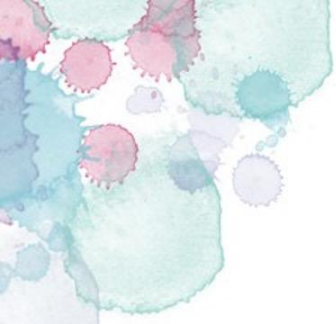
Shoulder impingement syndrome



Drop Arm Sign

- Evaluated during ROM assessment when patient demonstrates uncontrolled drop of the arm
- Accepted Reasoning:
 - Above 90 degrees, the deltoid is primarily functioning to control the drop
 - Below 90 degrees, the action of the rotator cuff increases and thus, its deficiency results in an uncontrolled drop of the arm
 - (Woodward et al. 2000)





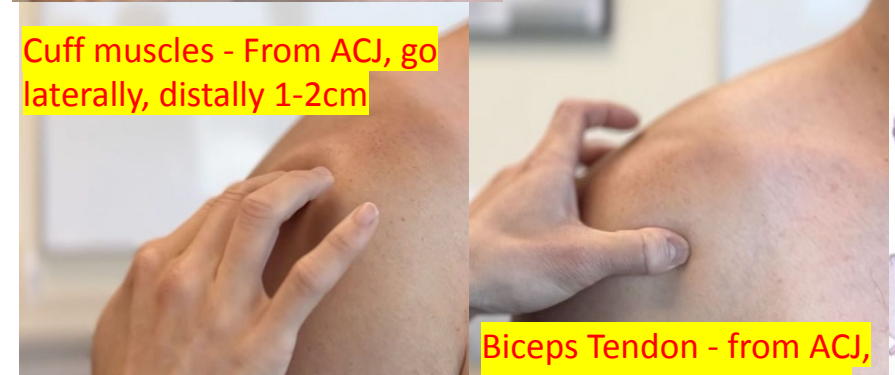
3. Palpate

- 4 Bony Prominences
 - Sternoclavicular Joint
 - Along Clavicle
 - Acromioclavicular Joint
 - Spine of Scapula
- 2 Soft tissue
 - Rotator Cuff Muscles
 - Biceps Tendon in groove



3. Palpation

- 4 Bony Areas
 - Sternoclavicular joint
 - Along clavicle shaft
 - Acromioclavicular joint
 - Acromion → Spine of Scapula (not too much)
- 2 Soft Tissue
 - Rotator Cuff - just below the acromion
 - Bicipital groove - just below the ACJ - accentuate by internally and externally rotating the arm





4. Power

- Rotator Cuff Muscles
 - Supraspinatus
 - Infraspinatus
 - Subscapularis
 - Teres Minor (not required)
- Biceps (double as special tests)
 - Speed's
 - Yergason's



4. Power

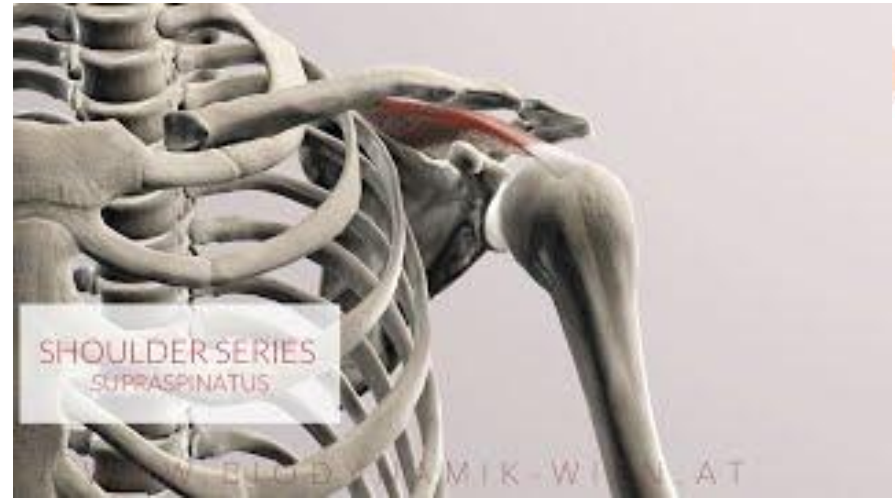
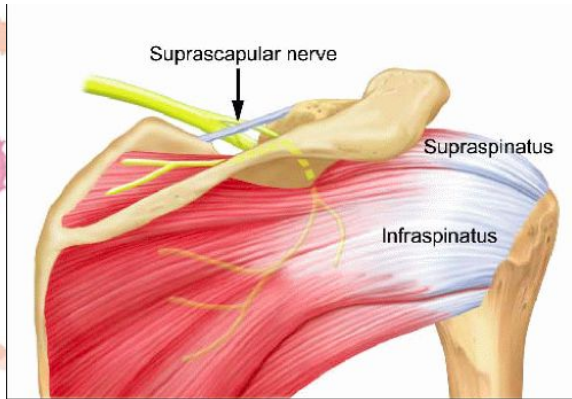
- Rotator Cuff Muscles
 - *Supraspinatus
 - *Infraspinatus - “tuck in your elbows”
 - Subscapularis (Belly Press)
 - Teres Minor (not required for undergrad)
- Biceps (double up as Biceps Special tests)
 - Supination Strength (Yegarson's Test)
 - Speed's test (transition into Special tests)



*Do both sides at **same time** to compare

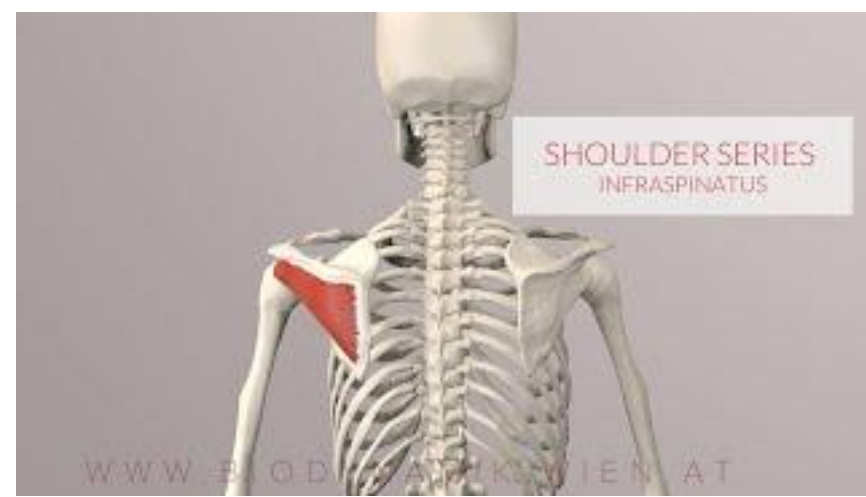
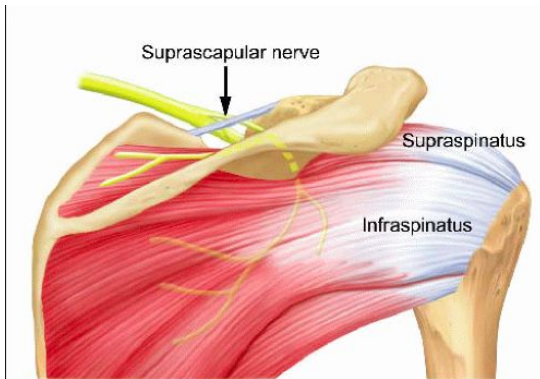
Supraspinatus

- From Supraspinous Fossa
- Inserts into GT
- Nerve: Suprascapular Nerve
- Action: Abduct the humerus in the plane of the scapula
- Tip: Compare both sides at same time



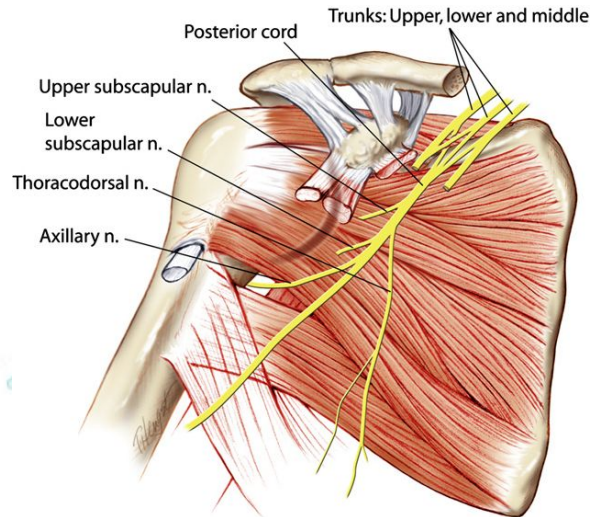
Infraspinatus

- From Infraspinous Fossa
- Inserts into GT
- Nerve: Suprascapular Nerve
- Action: Externally Rotate the arm
- Tip: Compare both sides at same time



Subscapularis

- From Subscapular Fossa
- Inserts into LT
- Nerve: Subscapular Nerve
- Action: Internally Rotate the arm



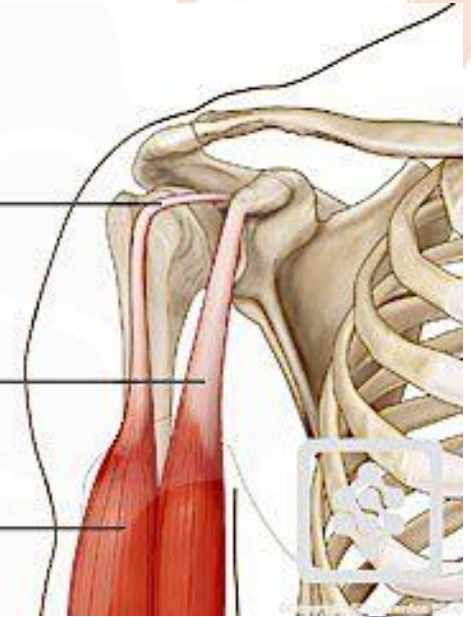
Biceps Tendon Special

- Trying to irritate the long head of biceps tendon in the groove by
 - Supination against resistance at the elbow
 - Flexion against resistance at the shoulder

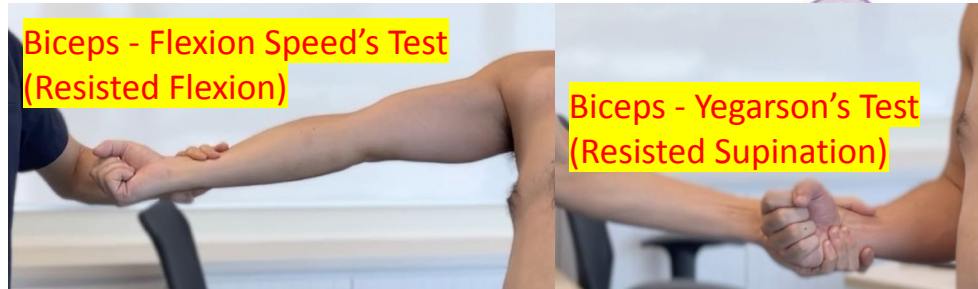
Tendon of long head of biceps brachii muscle

Short head of biceps brachii muscle

Biceps brachii



Biceps - Flexion Speed's Test
(Resisted Flexion)



Biceps - Yegarson's Test
(Resisted Supination)



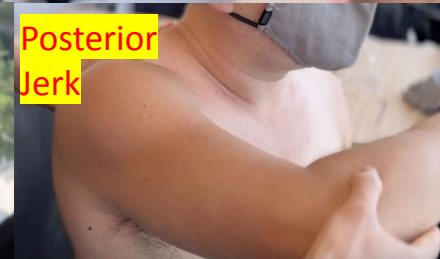
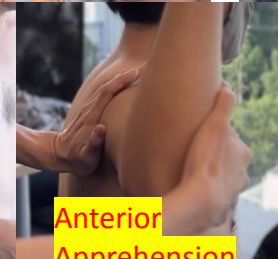
5. Special Tests

- Rotator Cuff Impingement
 - Neer's
 - Hawkin's
- Acromioclavicular Joint Pathology
 - Scarf's Test
- SLAP Tears (not required)
 - O'Brien's Test
- Instability
 - Sulcus
 - Anterior Apprehension
 - Beighton's



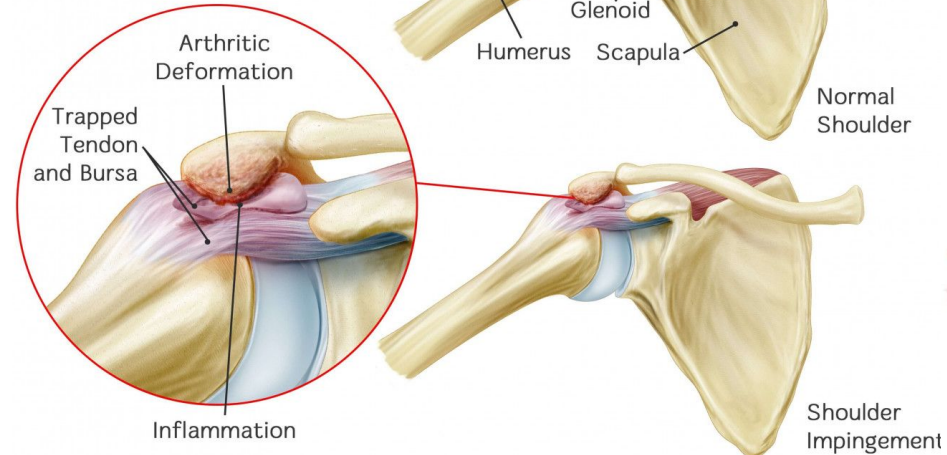
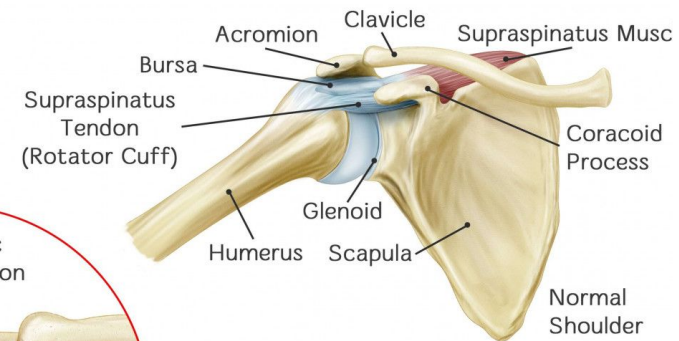
5. Special Tests

- Biceps Special Tests (done in Power transition)
- Rotator Cuff Impingement Tests
 - Neer's
 - Hawkin's
- ACJ Test - Scarf/ cross body adduction test
- Shoulder Instability Special Tests (sit on chair)
 - Sulcus sign
 - Apprehension Test
 - Posterior jerk test (Not required for undergrad)
- Beighton's Score



RC Impingement Tests

- Trying to “impinge” the rotator cuff under the acromion
- **Passive Tests** - “*relax and let me move your shoulder for you*”
 - Neer’s “**Sign**” = as demonstrated
 - Neer’s “**Test**” = Involves injecting LA. Resolution of pain indicates a positive test. (Not done)
- **Very non specific** - painful in many conditions
 - If occurs in **isolation**, then it may indicate RC impingement/ Subacromial bursitis
 - If occurs **with other signs** e.g. stiffness, weakness, instability, it may be due to that underlying pathology

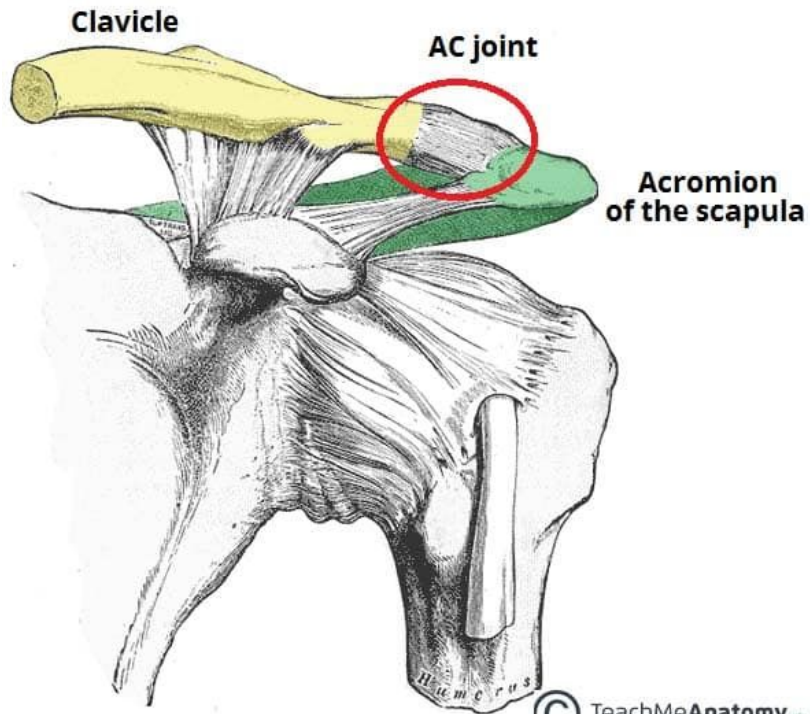
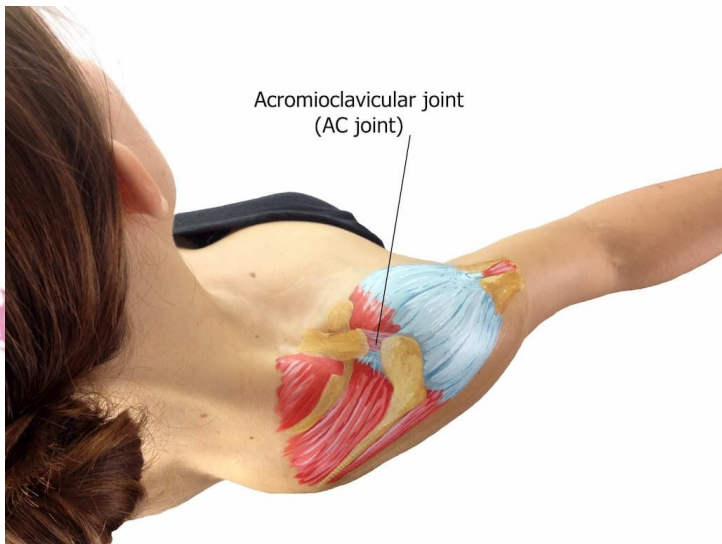


Scarf's



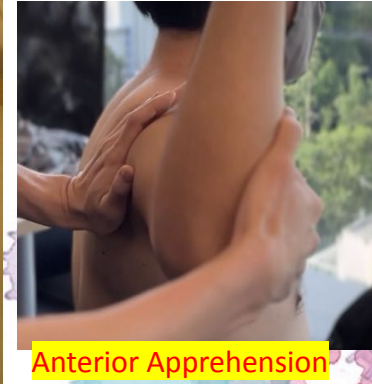
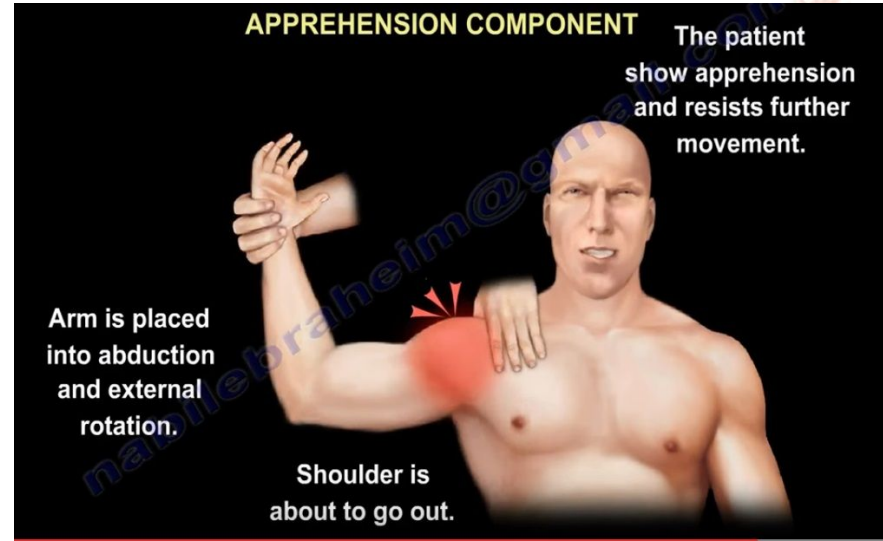
Scarf Test

- Trying to irritate the Acromioclavicular Joint



Shoulder Instability Tests

- Sulcus sign
 - Inferior subluxation of the humeral head
- Apprehension Test
 - Feel if patient tenses up



Beighton Score

- 4 pairs, 1 single
- Positive if
 - 5 or more in adults
 - 6 or more in children
 - ref. Ehler Danlos Society
- You can do this test in any condition that involves instability/ other ligament injuries e.g. ACL Tear



THE BEIGHTON SCORING SYSTEM

Measuring joint hypermobility

A. 5th FINGER / 'PINKIES'

Test **both sides**: Rest palm of the hand and forearm a **flat surface** with palm side down and fingers out straight.

Can the **fifth finger** be bent/lifted upwards at the knuckle to go back **beyond 90 degrees**?

If yes, add **one point** for each hand.



B. THUMBS

Test **both sides**: With the arm out straight, the palm facing down, and the wrist then fully bent downward, can the thumb be pushed back to touch the forearm?

If yes, add **one point** for each thumb.

C. ELBOWS

Test **both sides**: With arms outstretched and palms facing upwards, does the elbow extend (bend too far) upwards **more than an extra 10 degrees** beyond a normal outstretched position?

If yes, add **one point** for each side.



D. KNEES

Test **both sides**: While standing, with knees locked (bent backwards as far as possible), does the lower part of either leg extend **more than 10 degrees forward**?

If yes, add **one point** for each side.

E. SPINE

Bend forward, can you place the palms of your hands **flat on the floor in front of your feet without bending your knees**?

If yes, add **one point**.



6. Neurovascular

6. Neurovascular

- Radial pulse
- Median nerve - OK sign
- Ulnar nerve - criss cross fingers
- Radial nerve - thumbs up



7. Function Screen (not required unless asked)

7. Function (if asked)

- Touch Hair
- Touch Mouth
- Touch back pocket

Touch
Head



Touch
Mouth



Touch Back
pocket



8. Complete/ Offer

8. Complete/ Offer

- Can offer to examine Cervical spine if shoulder pain
- If not, just offer to take history



Ortho Made Simple - Physical Exam of the Shoulder

	Looking for STIFFNESS	Looking for SITE of PAIN	Looking for WEAKNESS
1. Inspection <ul style="list-style-type: none"> Expose Walk around patient Look for scars, deformity, swellings, erythema, wasting 	2. Range of Motion <ul style="list-style-type: none"> "Follow me" Flexion Abduction <ul style="list-style-type: none"> Repeat from back and comment "symmetrical movements of scapula" (Not required) External Rotation Internal Rotation <i>If AROM limited, check PROM</i> 	3. Palpate <ul style="list-style-type: none"> 4 Bony Prominences <ul style="list-style-type: none"> Sternoclavicular Joint Along Clavicle Acromioclavicular Joint Spine of Scapula 2 Soft tissue <ul style="list-style-type: none"> Rotator Cuff Muscles Biceps Tendon in groove 	4. Power <ul style="list-style-type: none"> Rotator Cuff Muscles <ul style="list-style-type: none"> Supraspinatus Infraspinatus Subscapularis Teres Minor (not required) Biceps (double as special tests) <ul style="list-style-type: none"> Speed's Yergason's
5. Special Tests <ul style="list-style-type: none"> Rotator Cuff Impingement <ul style="list-style-type: none"> Neer's Hawkin's Acromioclavicular Joint Pathology <ul style="list-style-type: none"> Scarf's Test SLAP Tears (not required) <ul style="list-style-type: none"> O'Brien's Test Instability <ul style="list-style-type: none"> Sulcus Anterior Apprehension Beighton's 	6. Neurovascular <ul style="list-style-type: none"> Radial pulse 	7. Function (if asked) <ul style="list-style-type: none"> Touch Hair Touch Mouth Touch back pocket 	8. Complete/ Offer <ul style="list-style-type: none"> Can offer to examine Cervical spine if shoulder pain If not, just offer to take history

**Exacerbation
of PAIN**

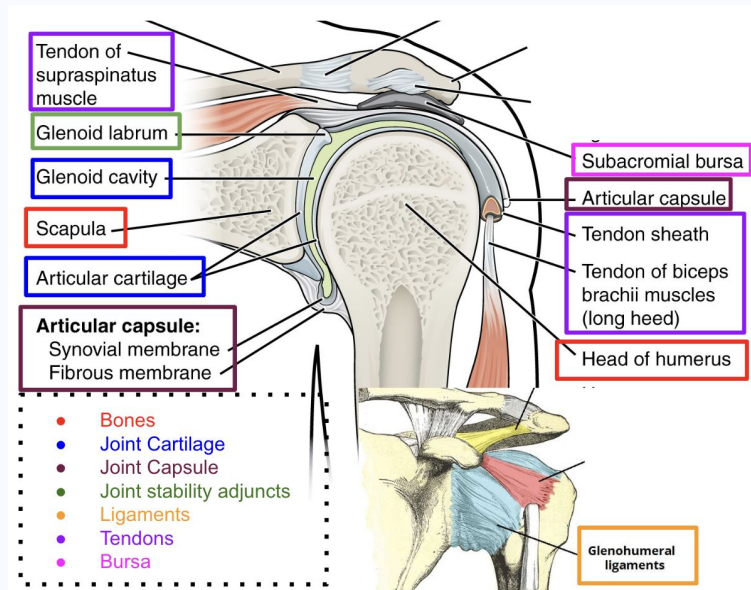
Looking for
INSTABILITY

Shoulder Examination Run-Through



Summary of *Patterns* in the Shoulder Joint (GHJ)

	History - Ask for associated symptoms	Physical Exam - Examine for
Joint Cartilage	Stiffness +/- Pain	Stiffness
Joint Capsule***	Stiffness +/- Pain	Stiffness
Adjuncts + Ligaments	Instability +/- Pain	Instability
Tendons - Tear	Weakness +/- Pain	Weakness
Tendons - Inflammation	Pain only	Impingement Tests
Bursa	Pain only	Impingement Tests



** All conditions can present with Pain only with no associated symptoms if the issue is mild.

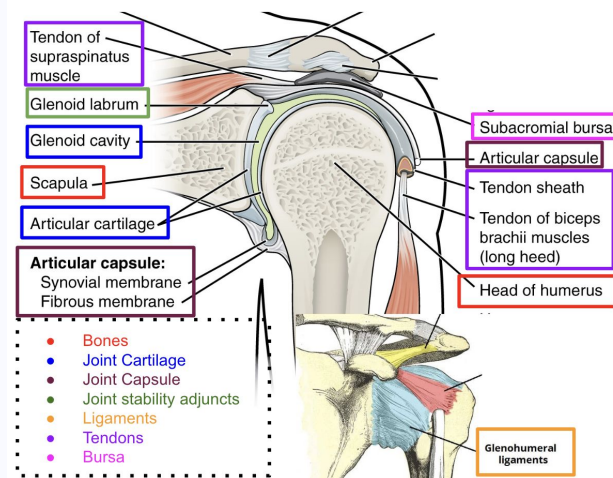
** Pain can result in “stiffness” and “weakness” and “instability”

Approach to Shoulder Pain

Linking History and Physical Examination to *Anatomical Pathological Diagnosis*

Summary of *Patterns* in the Shoulder Joint (GHJ)

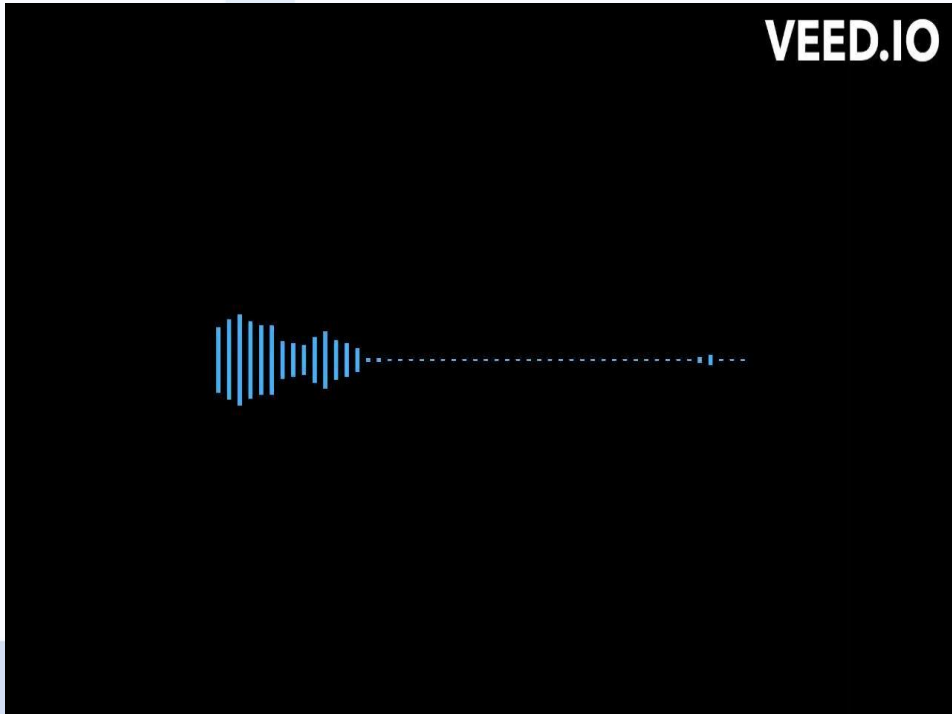
	History - Ask for associated symptoms	Physical Exam - Examine for	Provisional Diagnosis
Joint Cartilage	Stiffness +/- Pain	Stiffness	Arthritis (1° or 2°)
Joint Capsule***	Stiffness +/- Pain	Stiffness	Frozen Shoulder
Adjuncts + Ligaments	Instability +/- Pain	Instability	Shoulder Instability
Tendons - Tear	Weak +/- Pain	Weakness	Rotator Cuff Tear
Tendons - Inflammation	Pain only	Impingement Tests	Rotator Cuff Tendonitis/ Impingement
Bursa	Pain only	Impingement Tests	Subacromial Bursitis



** All conditions can present with Pain only with no associated symptoms if the issue is mild.

** Pain can result in “stiffness” and “weakness” and “instability”

Patient A's History



Questions in Slido

- Q1. What is the predominant symptom in the history?
- Q2. What is your provisional diagnosis from the history?

Slido - History Taking

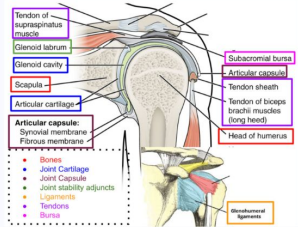
What are the predominant symptoms that the history has elicited?

- Pain
- Stiffness
- Weakness
- Instability
- Locking

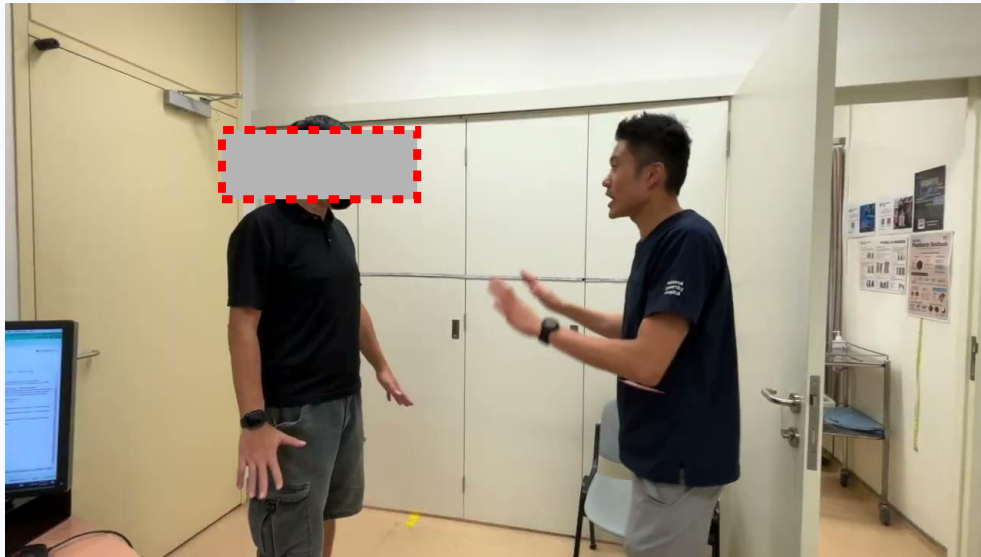
With the above constellation of symptoms, which is the provisional diagnosis?

- Joint Cartilage - Arthritis
- Capsule - Frozen Shoulder
- Stabilizers - Shoulder Instability
- Tendons/ Muscle - Rotator Cuff Tear
- Bursa/ Tendon - Bursitis/ Tendonitis

- Joint Cartilage → **Stiffness**
 - Osteoarthritis (Mechanical pain)
 - Primary OA
 - Secondary OA (Rotator Cuff Arthropathy)
 - Inflammatory Arthritis (Inflammatory pain)
- Joint Capsule → **Stiffness**
 - Frozen Shoulder
- Joint stability adjuncts → **Instability**
 - Shoulder Dislocation
- Ligaments (connects bone to bone) → **Instability**
 - Shoulder Dislocation
- Tendons (connects muscle to bone) →
 - Rotator Cuff Tendinitis/ Impingement → **Pain Only**
 - Rotator Cuff Tear → **Weakness**
- Bursa → **Pain only**
 - Subacromial Bursitis



Patient A's Physical Examination



Questions in Slido

- What is the predominant sign elicited in the physical examination?
- What is your provisional diagnosis (es) from the history and PE?

Slido - Physical Exam

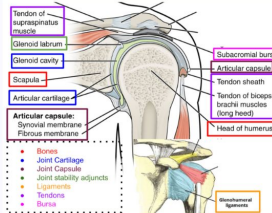
What are the predominant Signs that the physical exam has elicited?

- Pain
- Stiffness
- Weakness
- Instability
- Impingement

With the above constellation of signs and symptoms in the History and Physical Exam, which is/ are the provisional diagnoses? *

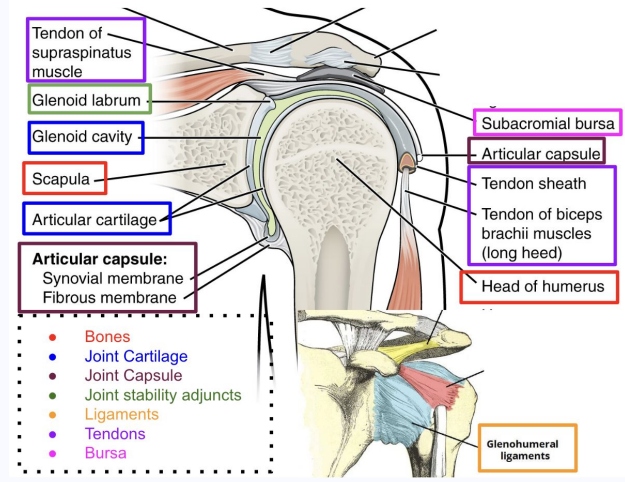
- Joint Cartilage - Arthritis
- Capsule - Frozen Shoulder
- Stabilizers - Shoulder Instability
- Tendons/ Muscle - Rotator Cuff Tear
- Bursa/ Tendon - Bursitis/ Tendonitis

- Joint Cartilage → **Stiffness**
 - Osteoarthritis (Mechanical pain)
 - Primary OA (Rotator Cuff Arthropathy)
 - Secondary OA (Rotator Cuff Arthropathy)
 - Inflammatory Arthritis (inflammatory pain)
- Joint Capsule → **Stiffness**
 - Frozen Shoulder
- Joint stability adjuncts → **Instability**
 - Shoulder Dislocation
- Ligaments (connects bone to bone) → **Instability**
 - Shoulder Dislocation
- Tendons (connects muscle to bone) → **Pain Only**
 - Rotator Cuff Tendinitis/ Impingement → **Pain Only**
 - Rotator Cuff Tear → **Weakness**
- Bursa → **Pain only**
 - Subacromial Bursitis



Summary of *Patterns* in the Shoulder Joint (GHJ)

	History - Ask for associated symptoms	Physical Exam - Examine for	Provisional Diagnosis
Joint Cartilage	Stiffness +/- Pain	Stiffness	Arthritis (1° or 2°)
Joint Capsule***	Stiffness +/- Pain	Stiffness	Frozen Shoulder
Adjuncts + Ligaments	Instability +/- Pain	Instability	Shoulder Instability
Tendons - Tear	Weak +/- Pain	Weakness	Rotator Cuff Tear
Tendons - Inflammation	Pain only	Impingement Tests	Rotator Cuff Tendonitis/ Impingement
Bursa	Pain only	Impingement Tests	Subacromial Bursitis



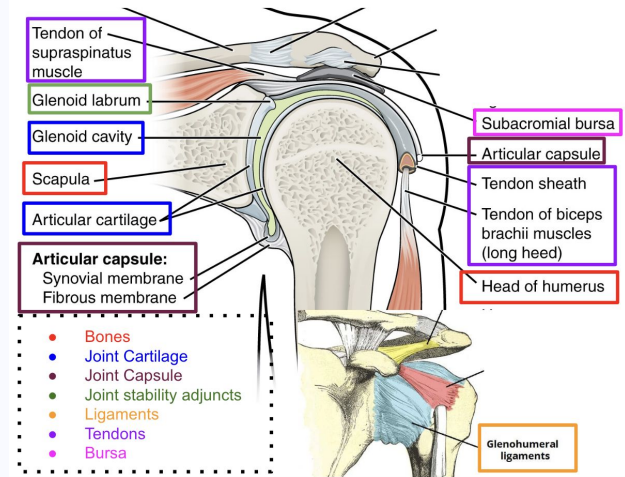
How to differentiate the 2?

** All conditions can present with Pain only with no associated symptoms if the issue is mild.

** Pain can result in "stiffness" and "weakness" and "instability"

Summary of *Patterns* in the Shoulder Joint (GHJ)

	History - Ask for associated symptoms	Physical Exam - Examine for	Provisional Diagnosis
Joint Cartilage	Stiffness +/- Pain	Stiffness	Arthritis (1°OA or 2° OA from previous RC Tear)
Joint Capsule***	Stiffness +/- Pain	Stiffness	Frozen Shoulder
Adjuncts + Ligaments	Instability +/- Pain	Instability	Shoulder Instability
Tendons - Tear	Weak +/- Pain	Weakness	Rotator Cuff Tear
Tendons - Inflammation	Pain only	Impingement Tests	Rotator Cuff Tendonitis/ Impingement
Bursa	Pain only	Impingement Tests	Subacromial Bursitis



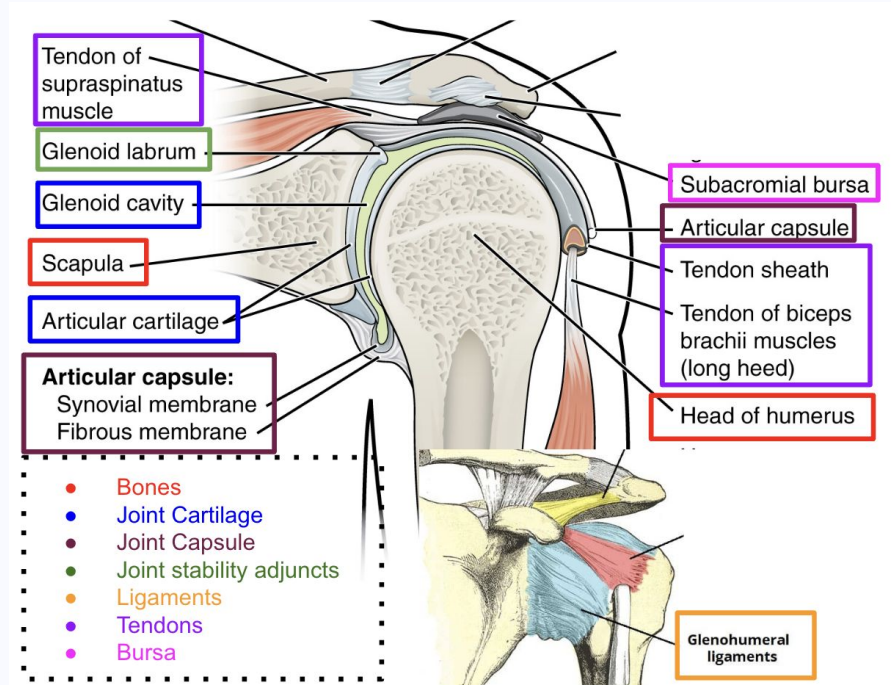
** All conditions can present with Pain only with no associated symptoms if the

How to differentiate the 2 from Physical Examination?

Patterns in the Shoulder Joint (GHJ)

- **Stiff & Strong** = Frozen Shoulder or 1° Arthritis
- **Stiff & Weak** = 2° Arthritis - Rotator Cuff Arthropathy
- **Weak only** = RC Tear
- **Impingement only** = RC Tendonitis/ Bursitis
- **Loose** = Shoulder instability

**Pain messes up everything



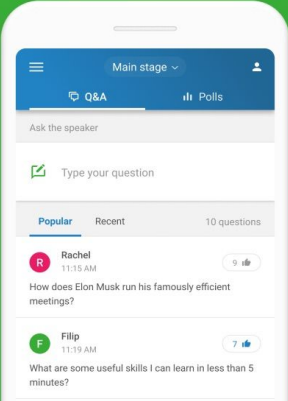
Ortho Made Simple - Shoulder PE

<p><u>1. Inspection</u></p> <ul style="list-style-type: none"> Expose Patient (Must offer) Walk around patient <ul style="list-style-type: none"> Front - be deliberate to look for asymmetry Sides Back - for wasting of Rotator cuff muscles In general, look for scars, deformity, swellings, erythema, wasting 	<p><u>2. Range of Motion</u></p> <ul style="list-style-type: none"> Stand in front of the patient and ask patient to follow you. Compare both sides <ul style="list-style-type: none"> Flexion Abduction External Rotation - tuck elbows in Internal Rotation - using thumb to compare level If any AROM limited, check PROM <p>* No need to check extension</p>	<p><u>3. Palpate</u></p> <ul style="list-style-type: none"> 4 Bony Prominences <ul style="list-style-type: none"> Sternoclavicular Joint Along Clavicle Acromioclavicular Joint Spine of Scapula 2 Soft tissue <ul style="list-style-type: none"> Rotator Cuff Muscles (~ 1 cm distal to acromion) Biceps Tendon in groove (optional) <p>* Palpate only the affected side unless asked to compare</p>	<p><u>4. Power</u></p> <ul style="list-style-type: none"> Rotator Cuff Muscles. [Compare both sides] <ul style="list-style-type: none"> Supraspinatus - Empty can test (flex shoulder to 90, in plane of scapula) Infraspinatus - External rotation against resistance Subscapularis - Belly Press (check one side at a time) Teres Minor - Hornblower [Post grad] Biceps (double as special tests while look for pain in bicipital groove) [Do affected side only] <ul style="list-style-type: none"> Speed's Yergason's
<p><u>5. Special Tests</u></p> <p>[Do affected side only unless asked to compare]</p> <ul style="list-style-type: none"> Rotator Cuff Impingement <ul style="list-style-type: none"> Neer's Hawkin's Acromioclavicular Joint Pathology <ul style="list-style-type: none"> Scarf's Test SLAP Tears [Post Grad] <ul style="list-style-type: none"> O'Brien's Test Instability Tests [For young patients with no positive exam findings so far, consider shoulder instability as a likely diagnosis.] <ul style="list-style-type: none"> Sulcus Anterior Apprehension Beighton's (> 5 is +ve in adults) 	<p><u>6. Neurovascular</u></p> <ul style="list-style-type: none"> Radial pulse Median nerve - OK sign Ulnar nerve - criss cross fingers Radial nerve - thumbs up 	<p><u>7. Function (if asked)</u></p> <ul style="list-style-type: none"> Touch Hair Touch Mouth Touch back pocket 	<p><u>8. Complete/ Offer</u></p> <ul style="list-style-type: none"> Can offer to examine Cervical spine if shoulder pain If not, just offer to take history <p>Quick Interpretation after History and PE</p> <ul style="list-style-type: none"> Stiff & Strong = Frozen Shoulder or 1° Arthritis Stiff & Weak = RC Arthropathy (2° Arthritis) Weak only = RC Tear Impingement + only = RC Tendonitis/ Bursitis Scarf's test + only = ACJ Pathology Loose = Shoulder instability <p>**Pain messes up everything</p>

Quiz Time!

- **Live Audience** – Submit your answer on SLIDO to enhance your learning through immediate feedback.
- **Recording Audience** – Refer to the slides for the exact questions and options.

Join the conversation
Ask questions & vote in live polls



slido

Approach to SE Quiz Q1

🕒 15 Which of the following is the correct nerve-to-muscle pair?

- Supraspinatus - Axillary Nerve
- Teres Minor - Thoracodorsal Nerve
- Infraspinatus - Suprascapular nerve
- Subscapularis - Pectoralis nerve

Approach to SE Quiz Q2



🕒 17

What is this deformity called?

- Squaring of Shoulder
- Popeye Sign
- Muscle Wasting
- Geyser Sign

Approach to SE Quiz Q3

🕒 16

Spot Diagnosis: 60year old Female had a fall and developed weakness in the right shoulder.

- Rotator Cuff Tear
- Rotator Cuff Tendonitis
- Rotator Cuff Arthropathy
- Shoulder Osteoarthritis
- Shoulder Instability
- Acromioclavicular Joint Arthritis

Approach to SE Quiz Q4

🕒 18

Spot Diagnosis: 23M had recurrent episodes in right shoulder while bouldering, requiring visits to the hospital to help with pain.

- Rotator Cuff Tear
- Rotator Cuff Tendonitis
- Rotator Cuff Arthropathy
- Shoulder Osteoarthritis
- Shoulder Instability
- Acromioclavicular Joint Arthritis

Approach to SE Quiz Q5

🕒 17

**Spot Diagnosis: 80year old Female has chronic pain in right shoulder.
Has weakness since a fall 5 years ago**

- Rotator Cuff Tear
- Rotator Cuff Tendinitis
- Rotator Cuff Arthropathy
- Shoulder Osteoarthritis
- Shoulder Instability
- Acromioclavicular Joint Arthritis

Approach to SE Quiz Q6

🕒 17

Spot Diagnosis: 45 year old male, chronic right shoulder pain with pain on overhead activities. No weakness.

- Rotator Cuff Tear
- Rotator Cuff Tendinitis
- Rotator Cuff Arthropathy
- Shoulder Osteoarthritis
- Shoulder Instability
- Acromioclavicular Joint Arthritis

Approach to SE Quiz Q7

🕒 17

Spot Diagnosis: 50M with stiffness in right shoulder. Had an proximal humerus fracture when he was 25 which was fixed.

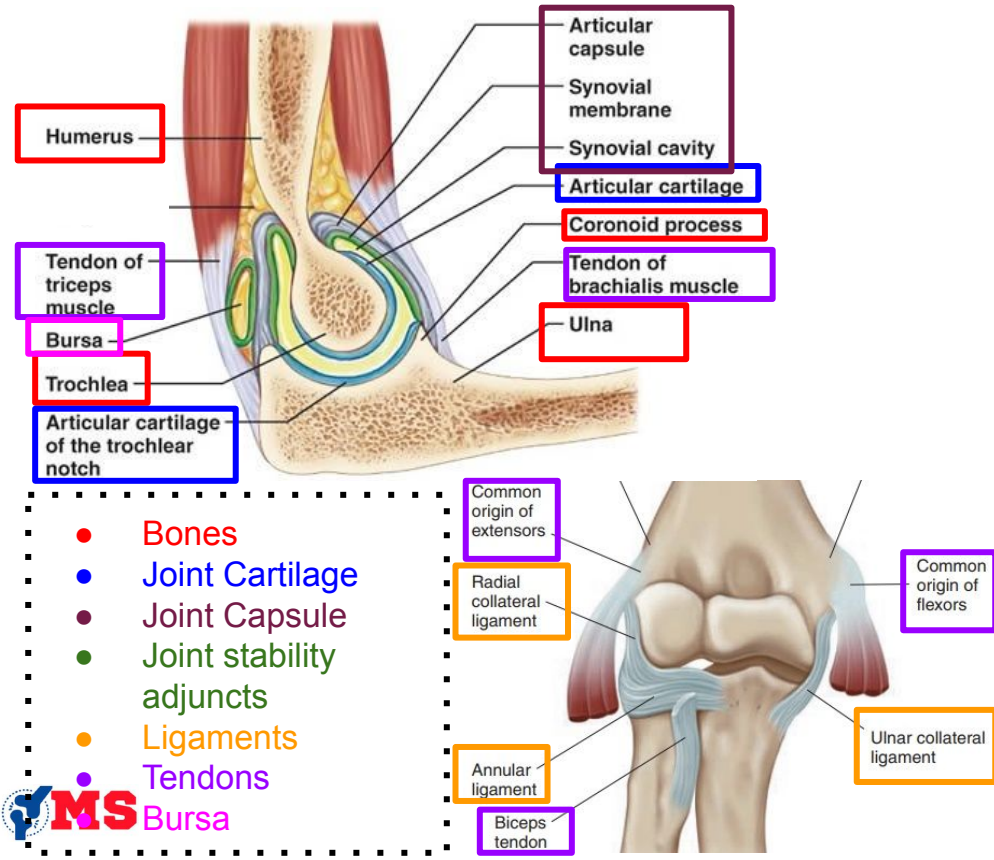
- Rotator Cuff Tear
- Rotator Cuff Tendonitis
- Rotator Cuff Arthropathy
- Shoulder Osteoarthritis
- Shoulder Instability
- Acromioclavicular Joint Arthritis

Approach to Elbow Pain

Linking *History* to Anatomy

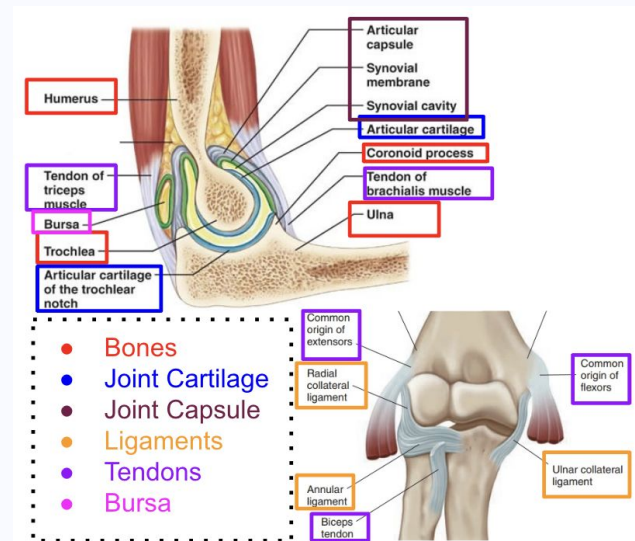
What can go wrong in the *elbow* joint?

- Bones
- Joint Cartilage
- Joint Capsule
- Joint stability adjuncts
- Ligaments (connects bone to bone)
- Tendons (connects muscle to bone)
- Bursa



Summary of *Patterns* in the **Elbow Joint**

	History - Ask for associated symptoms
Joint Cartilage	Stiffness +/- Pain
Joint Capsule	Stiffness +/- Pain
Adjuncts + Ligaments	Instability +/- Pain
Tendons - Tear	Weak +/- Pain
Tendons - Inflammation	Pain only
Bursa	Pain only



** All conditions can present with Pain only with no associated symptoms if the issue is mild.

** Pain can result in “stiffness” and “weakness” and “instability”



Approach to Elbow Pain

Linking *History* and *Physical Examination* to Anatomy



Ortho Made Simple - Elbow PE

1. Inspection

- Expose Patient (**Must offer**)
- Begin with patient's arms straight with palms facing you
- Look for cubitus varus/ valgus
- Bring hands up to sky - look for cubital tunnel release scars

2. Range of Motion

- Start with arms horizontal, parallel to the ground.
 - Flexion
 - Extension
- Tuck in elbows, Give 2 pens (or use thumbs)
 - Pronation
 - Supination
- **If any AROM limited, check PROM**

3. Palpate

- Demonstrate isosceles triangle relationships of tip of olecranon, medial epicondyle (ME) and Lateral epicondyle (LE)
- Palpate medially
 - Medial Epicondyle pain for **Golfer's Elbow**
 - Ulnar nerve for subluxation (flex and extend elbow with finger over ME to feel for subluxation)
- Palpate laterally
 - Lateral Epicondyle pain for **Tennis Elbow**
 - Radial head - pronate/ supinate elbow to feel radial head rotating

4. Power

- 4 Muscle groups
 - Flexion (biceps, brachialis)
 - Extension (triceps)
 - Pronation (pronator teres, quadratus)
 - Supination (biceps, supinator)

5. Special Tests (Targeted)

***Most important to master**

- **Tennis Elbow tests**
 - Passive Wrist Flexion (Mill's)
 - Resisted Wrist Dorsiflexion (Cozen's)
 - Resisted Middle Finger Extension (Maudsley)
- **Golfer Elbow**
 - Passive Wrist extension
 - Resisted Wrist Flexion
- Distal biceps rupture - hook test
- Instability tests **Post Grad**

6. Neurovascular

- Radial pulse
- Median nerve - OK sign
- Ulnar nerve - criss cross fingers
- Radial nerve - thumbs up

7. Function (if asked)

- Touch Hair
- Touch Mouth
- Touch back pocket

8. Complete/ Offer

- Just offer to take history

Confirm History with PE!

<p><u>1. Inspection</u></p> <ul style="list-style-type: none"> • Expose • Arms straight with palms facing you • Look for cubitus varus/ valgus • Bring hands up to sky - look for cubital tunnel release scars 	<p><u>2. Range of Motion</u></p> <p>Looking for STIFFNESS</p>	<p><u>3. Palpate</u></p> <p>Looking for SITE of PAIN</p>	<p><u>4. Power</u></p> <p>Looking for WEAKNESS</p>
<p>SPECIAL TESTS</p>		<ul style="list-style-type: none"> • LE pain for tennis • Radial head 	
<p>Exacerbation of PAIN</p>	<p><u>6. Neurovascular</u></p> <ul style="list-style-type: none"> • Radial pulse • Median nerve - OK sign • Ulnar nerve - criss cross fingers • Radial nerve - thumbs up 	<p><u>7. Function (if asked)</u></p> <ul style="list-style-type: none"> • Touch Hair • Touch Mouth • Touch back pocket 	<p><u>8. Complete/ Offer</u></p> <ul style="list-style-type: none"> • Just offer to take history
<p>Looking for INSTABILITY</p>			

1. Inspection

- Expose
- Arms straight with palms facing you
- Look for cubitus varus/ valgus
- Bring hands up to sky - look for cubital tunnel release scars



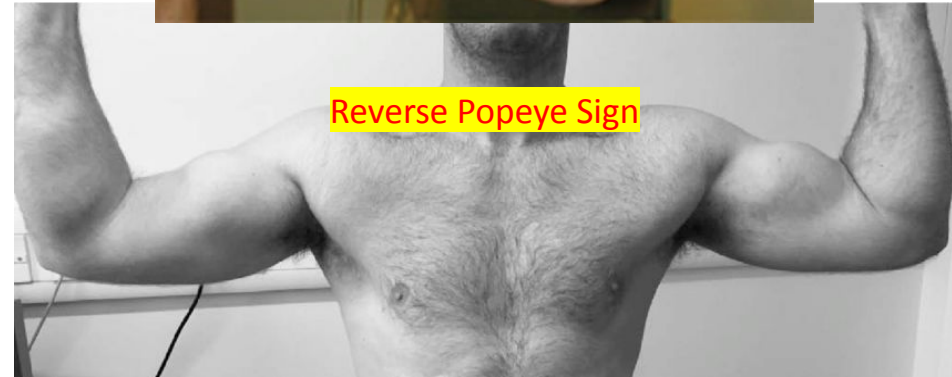
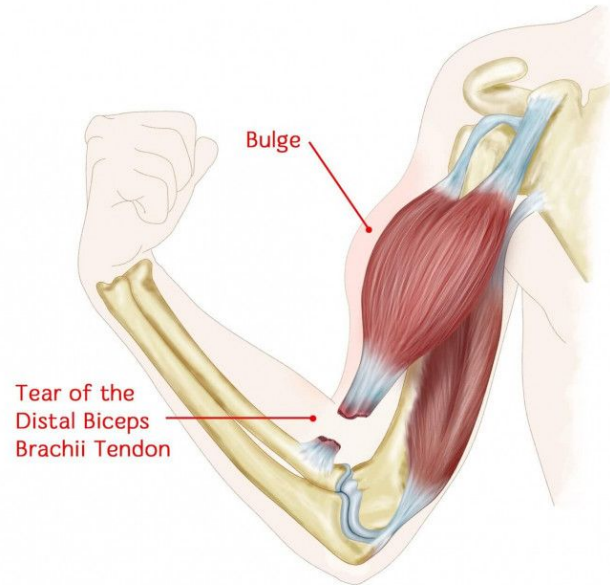
1. Inspection

- Deformity
- Scars
- Wasting



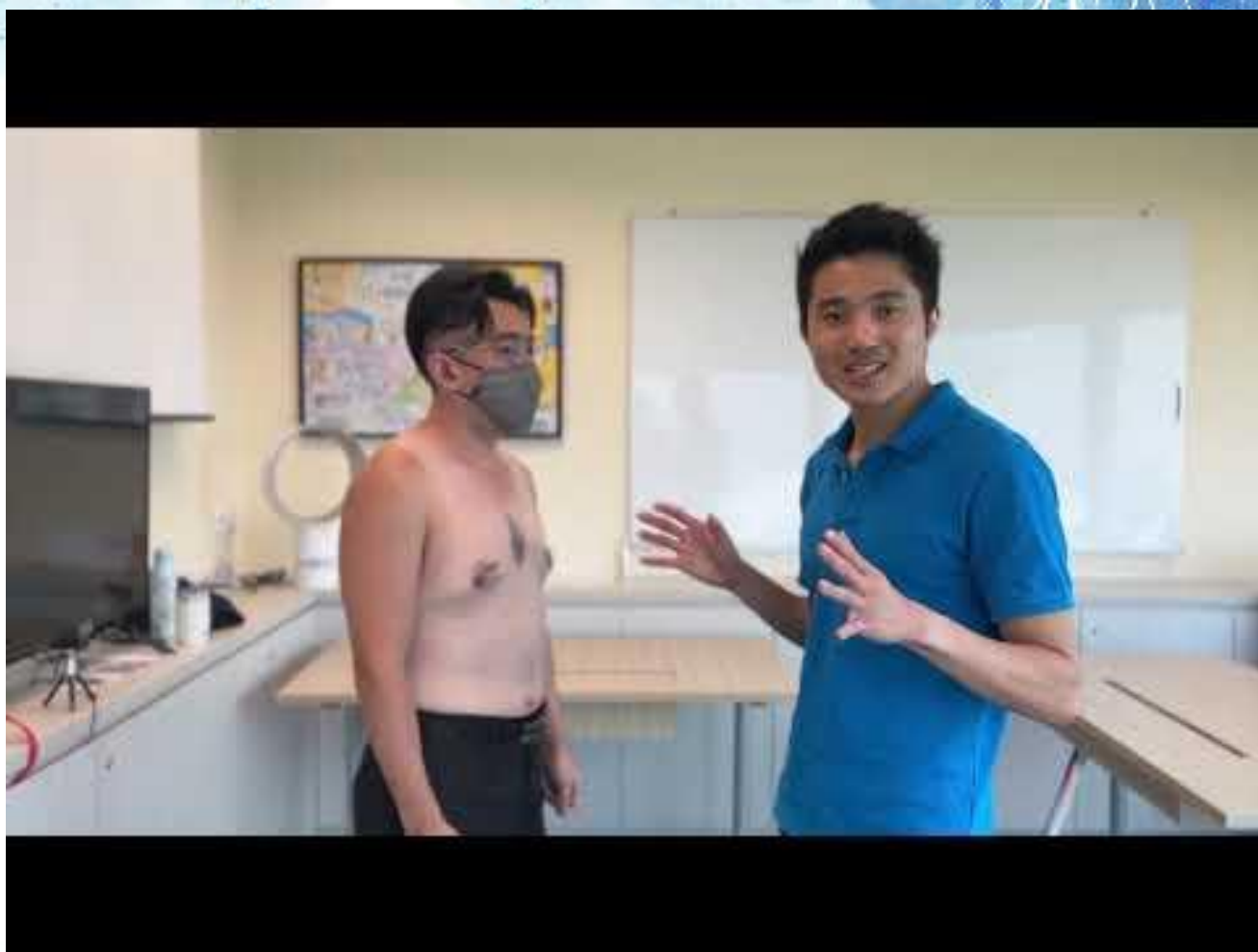
Reverse Popeye Sign

- Distal biceps tendon rupture



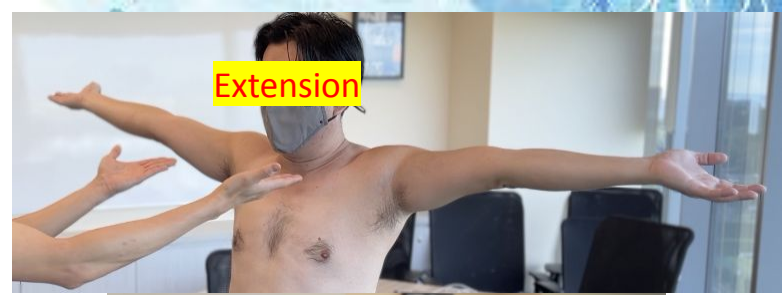
2. Range of Motion

- Start with arms horizontal
 - Flexion
 - Extension
- Tuck in elbows, Give 2 pens
 - Pronation
 - Supination
- Check PROM when AROM limited



2. Range Of Motion

- Put arms in horizontal plane
 - Check Flexion/ Extension
- Bring Elbows tucked to side
 - Provide 2 pens
 - Check pronation - “turn out”
 - Check supination - “turn in”
- Same Principles - Check Active and KIV Passive ROM
 - AROM = PROM = Full = **Normal**
 - AROM < PROM = **Weakness**
 - AROM = PROM = Limited = **Stiffness**



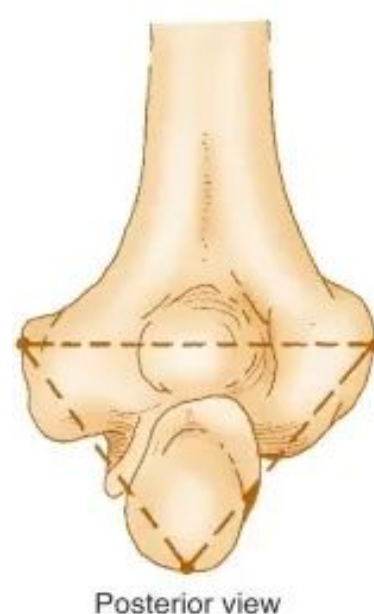
3. Palpate

- Demonstrate isosceles triangle relationships of tip of olecranon, medial epicondyle (ME) and Lateral epicondyle (LE)
- Palpate medially
 - ME pain for Golfer's
 - Ulnar nerve for subluxation
- Palpate laterally
 - LE pain for Tennis
 - Radial head



3. Palpation - Triangle

- Hand moves into patient with 3 fingers -
 - Thumb and middle finger on the epicondyles
 - Index finger on the olecranon
 - Say “2 epicondyles and olecranon forms an isosceles triangle”
- Medial Epicondyle, Lateral Epicondyle, Tip of olecranon forms an isosceles triangle
 - Disruption may suggest previous malunion of fractures



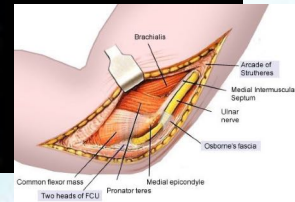
Medial Elbow Palpation

- Medial epicondyle tenderness (Golfer's elbow)
- Palpate ulnar nerve in groove.
- Locate medial epicondyle again and place finger over it
- Flex and extend the elbow, feeling for a tubular structure sliding across it

Palpate Medial Epicondyle



Ulnar nerve in groove



Lateral Elbow Palpation

- Lateral epicondyle tenderness (tennis elbow)
- Radial head tenderness, Rotate arm to confirm you are palpating the radial head

Palpate Lateral Epicondyle



Radial head rotation



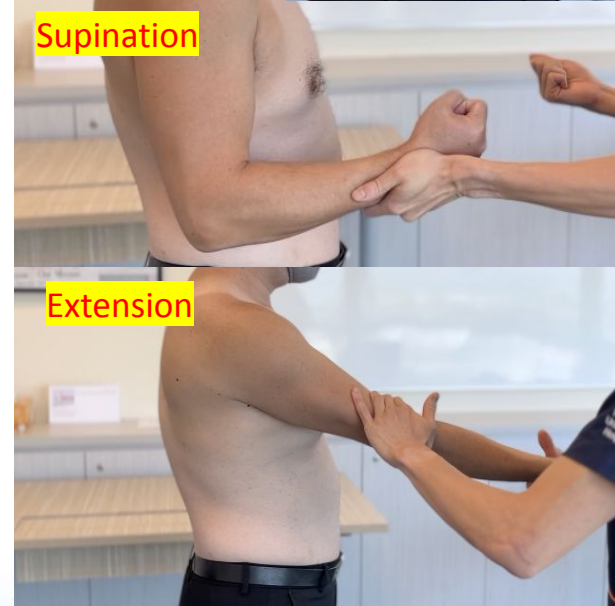
4. Power

- 4 movements
 - Flexion
 - Extension
 - Pronation
 - Supination



4. Power

- 4 Movements
 - Flexion strength
 - Supination strength
 - Pronation strength - Pronator Teres
 - Extension strength - Triceps
- At this point, you should pick up any biceps pathology e.g. popeye or reverse popeye signs



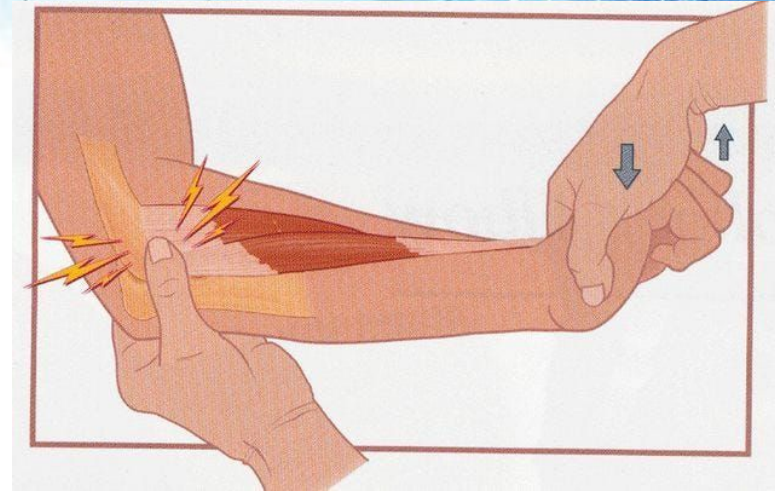
5. Special Tests (Targeted)

- Tennis Elbow tests
 - Passive wrist flexion
 - Cozen
 - Maudsley
- Golfer Elbow
 - Passive Wrist extension
 - Flexion against resistance
- Distal biceps rupture - hook test
- Instability tests (not required)



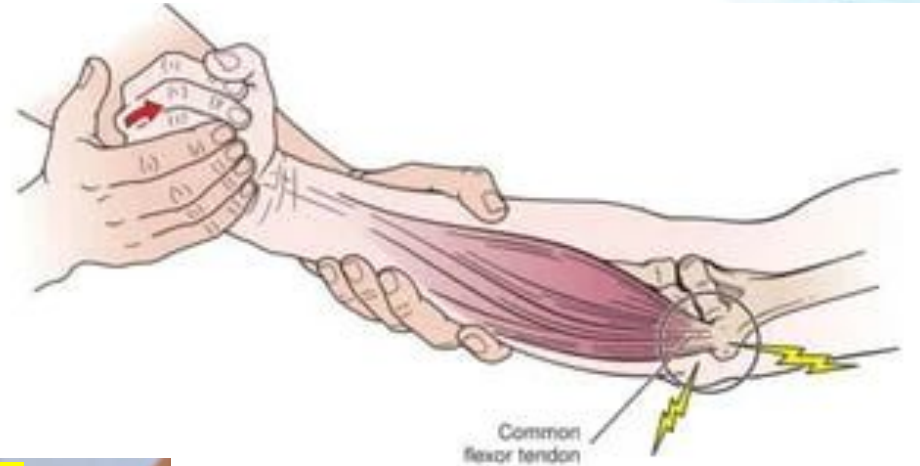
Tennis Elbow Tests (Lateral)

- Logic = Pathology in the forearm EXTENSOR tendon attachment → Tests aim to stress EXTENSOR mechanism
 - **Cozen's** = Extension against resistance
 - **Maudsley** = Extension of middle finger against resistance
 - Passive wrist flexion (to stress extensor muscle attachment)



Golfer Elbow Tests (Medial)

- Logic = Pathology in the forearm FLEXOR tendon attachment → Tests aim to stress FLEXOR mechanism
 - Flexion against resistance
 - Passive wrist extension (to stress flexor muscle attachment)



Hook Test

- Attempting to hook the biceps tendon from lateral to medial

Normal hook test:
Biceps tendon is intact



Abnormal hook test:
Biceps tendon is torn

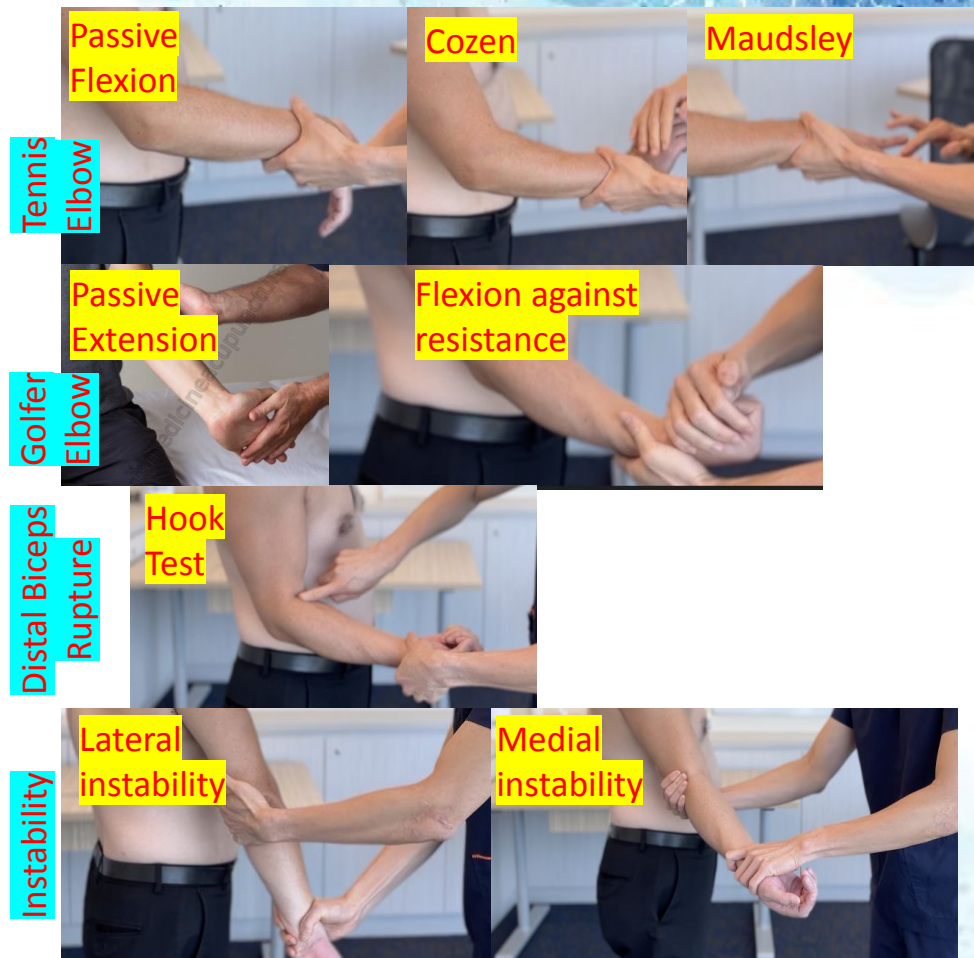


Hook Test

Distal Biceps
Rupture

5. Special Tests

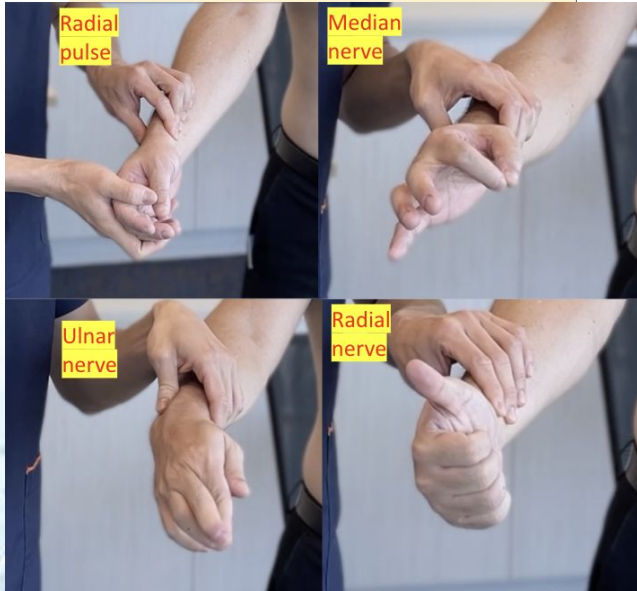
- Tennis Elbow Tests (do if LE tender)
 - Passive wrist Flexion
 - Cozen's test (Wrist Extension against resistance)
 - Maudsley's test (Middle finger extension against resistance)
- Golfer Elbow Tests (do if ME tender)
 - Passive wrist extension
 - Flexion against resistance
- Hook test (do if so far no positive findings as hard to pick up)
- Instability tests (No need for undergrad)



Steps 6, 7, 8

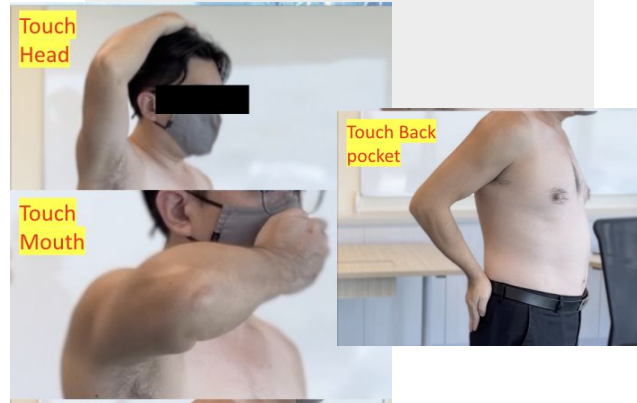
6. Neurovascular

- Radial pulse
- Median nerve - OK sign
- Ulnar nerve - criss cross fingers
- Radial nerve - thumbs up



7. Function (if asked)

- Touch Hair
- Touch Mouth
- Touch back pocket



8. Complete/ Offer

- Can offer to examine Cervical spine if shoulder pain
- If not, just offer to take history



Ortho Made S

Looking for **STIFFNESS**

Looking for **SITE** of PAIN

Looking for **WEAKNESS**

1. Inspection

- Expose
- Arms straight with palms facing you
- Look for cubitus varus/ valgus
- Bring hands up to sky - look for cubital tunnel release scars

2. Range of Motion

- Start with arms horizontal
 - Flexion
 - Extension
- Tuck in elbows, Give 2 pens
 - Pronation
 - Supination
- Check PROM when AROM limited

3. Palpate

- Demonstrate isosceles triangle relationships of tip of olecranon, medial epicondyle (ME) and Lateral epicondyle (LE)
- Palpate medially
 - ME pain for Golfer's
 - Ulnar nerve for subluxation
- Palpate laterally
 - LE pain for Tennis
 - Radial head

4. Power

- 4 movements
 - Flexion
 - Extension
 - Pronation
 - Supination

5. Special Tests (Targeted)

- Tennis Elbow tests
 - Passive wrist flexion
 - Cozen
 - Maudsley
- Golfer Elbow
 - Passive Wrist extension
 - Flexion against resistance
- Distal biceps rupture - hook test
- Instability tests (not required)

6. Neurovascular

- Radial pulse
- Median nerve - OK sign

**Exacerbation
of PAIN**

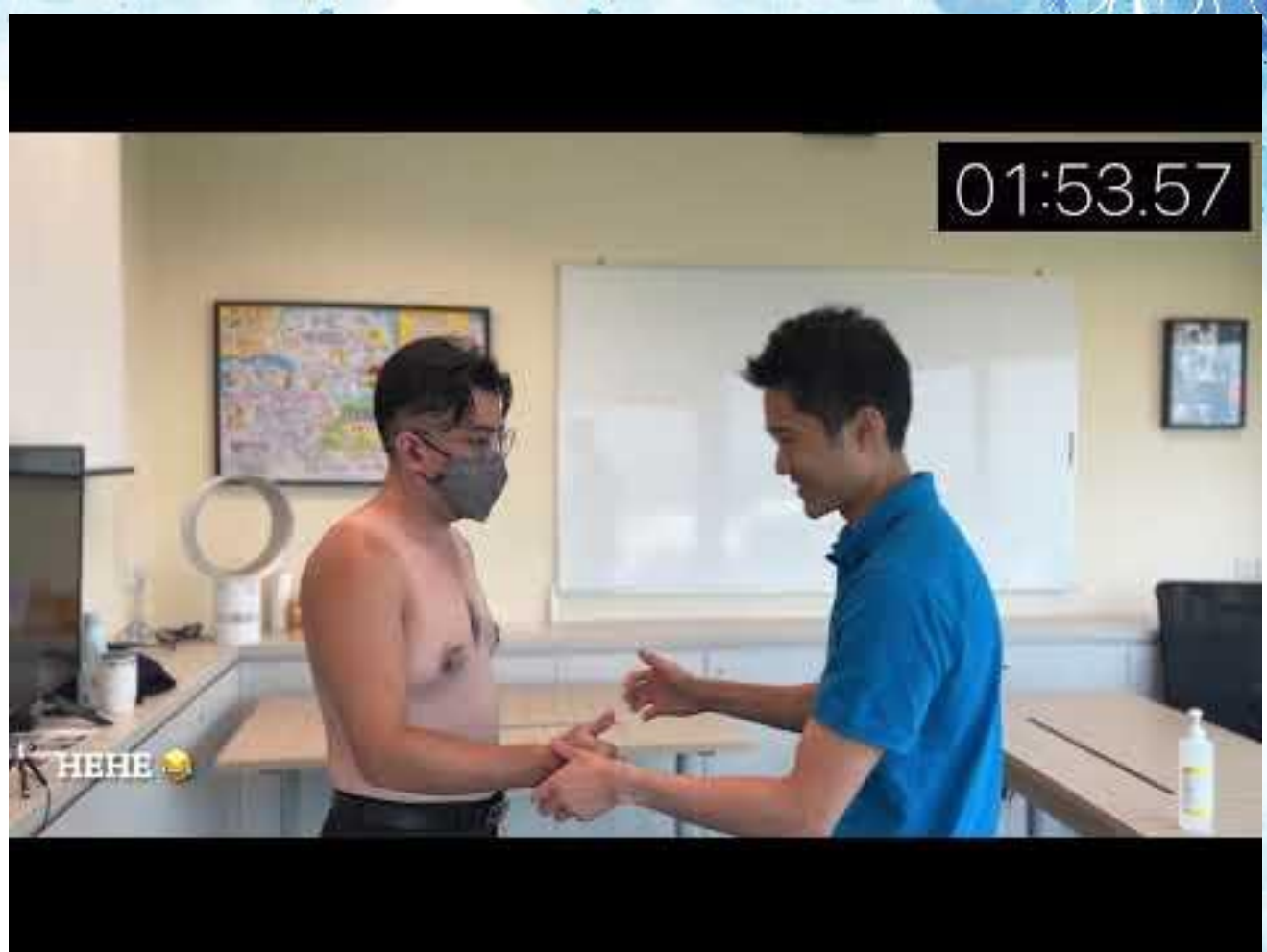
7. Function (if asked)

- Touch Hair
- Touch Mouth
- Touch back pocket

8. Complete/ Offer

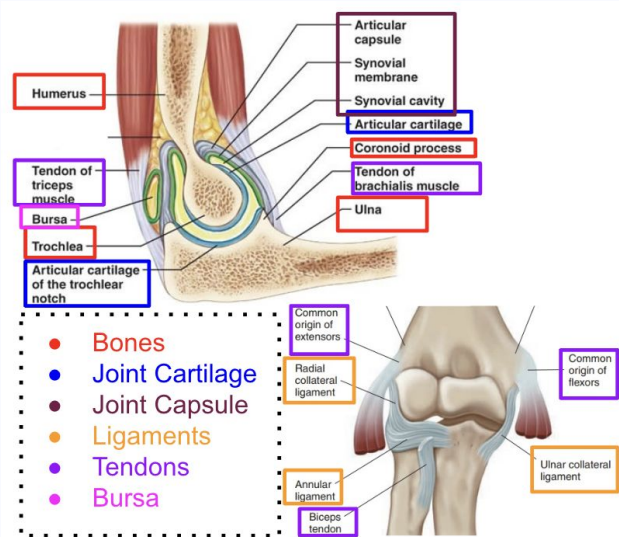
- Just offer to take history

Elbow
Examination
Run-Through
(Tennis Elbow)



Summary of *Patterns* in the **Elbow Joint**

	History - Ask for associated symptoms	Physical Exam - Examine for
Joint Cartilage	Stiffness +/- Pain	Stiffness
Joint Capsule	Stiffness +/- Pain	Stiffness
Adjuncts + Ligaments	Instability +/- Pain	Instability
Tendons - Tear	Weak +/- Pain	Weakness
Tendons - Inflammation	Pain only	Specific Tests
Bursa	Pain only	Features of Inflammation



** All conditions can present with Pain only with no associated symptoms if the issue is mild.

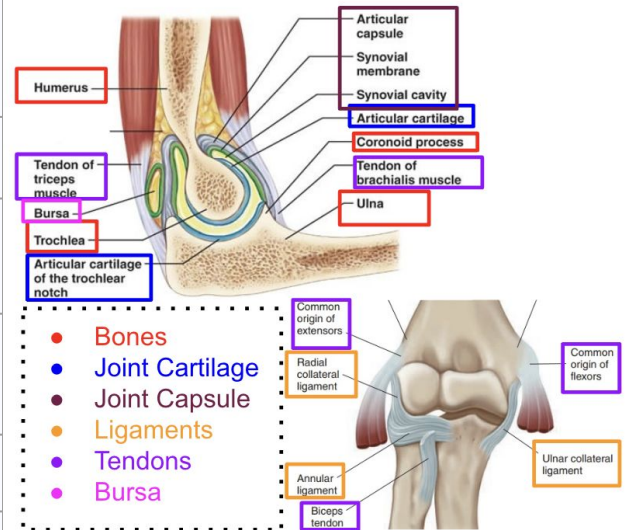
** Pain can result in “stiffness” and “weakness” and “instability”

Approach to Elbow Pain

Linking History and Physical Examination to *Anatomical Pathological Diagnosis*

Summary of *Patterns* in the **Elbow Joint**

	History - Ask for associated symptoms	Physical Exam - Examine for	Provisional Diagnosis
Joint Cartilage	Stiffness +/- Pain	Stiffness	Arthritis (1° or 2°)
Joint Capsule	Stiffness +/- Pain	Stiffness	Frozen (Stiffness from Immobilization)
Adjuncts + Ligaments	Instability +/- Pain	Instability	Elbow Instability
Tendons - Tear	Weak +/- Pain	Weakness	Tendon Tear
Tendons - Inflammation	Pain only	Specific Tests	Lateral - Tennis Elbow Medial - Golfer's Elbow Pos. - Triceps Tendonitis
Bursa	Pain only	Features of Inflammation	Olecranon Bursitis

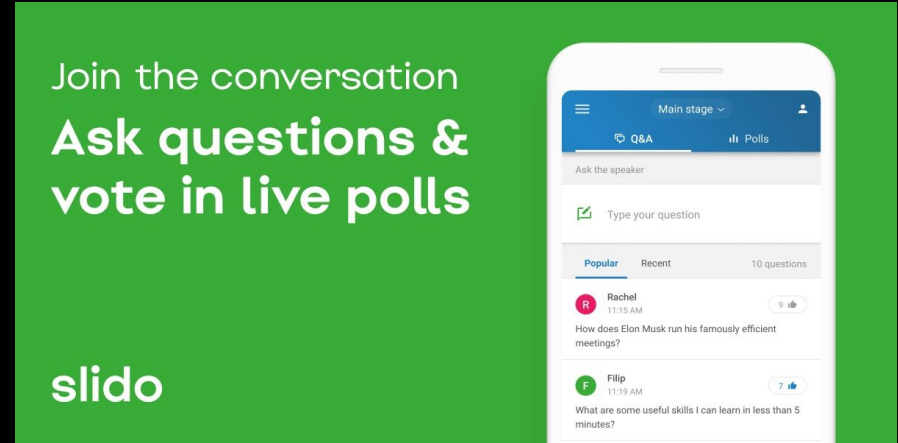


** All conditions can present with Pain only with no associated symptoms if the issue is mild.

** Pain can result in “stiffness” and “weakness” and “instability”

Quiz Time!

- **Live Audience** – Submit your answer on SLIDO to enhance your learning through immediate feedback.
- **Recording Audience** – Refer to the slides for the exact questions and options.

A promotional graphic for the Slido mobile app. On the left, a green background contains the text 'Join the conversation Ask questions & vote in live polls' and the 'slido' logo. On the right, a white smartphone displays the app's interface. The screen shows a 'Main stage' header with 'Q&A' and 'Polls' tabs. Below is a text input field for asking questions. A 'Popular' tab is selected, showing a list of questions: 'How does Elon Musk run his famously efficient meetings?' by Rachel (9 votes) and 'What are some useful skills I can learn in less than 5 minutes?' by Filip (7 votes).

Approach to SE Quiz Q8



Patient has lateral elbow pain. Which test will you do to confirm your diagnosis?

- Tinel's Test
- Cozen's Test
- Durkan's Test
- Wilson's Test

Approach to SE Quiz Q9

🕒 17

Patient has medial elbow pain. Which of the following tendons attaches to this region?

- Extensor carpi radialis brevis
- Brachialis
- Flexor Digitorum Superficialis
- Supinator

Approach to SE Quiz Q10



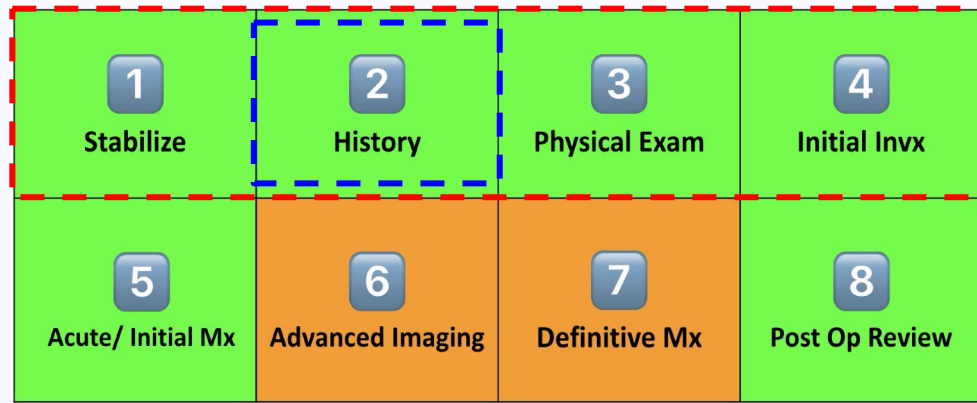
🕒 18

**What is this deformity called?
(Select all that is applicable)**

- Cubitus Varus
- Cubitus Valgus
- Gunstock Deformity
- Recurvatum

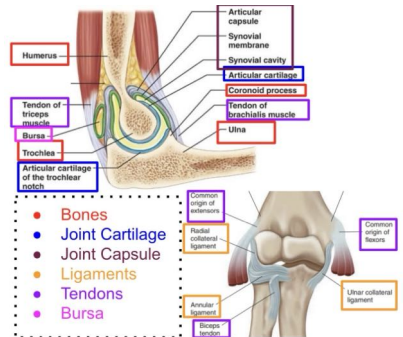
Summary

- Pain + Associated symptoms (stiffness, weakness, instability, locking) helps us to arrive at the diagnosis
- Physical Examination serves to confirm the history taken

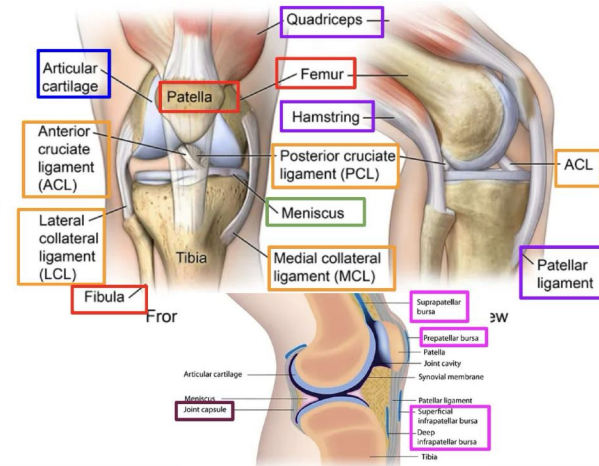


What should you do next?

- Shape your thought process into an anatomical manner as you take history and do physical examinations from the various joints - Knee, Hip, Foot, Ankle, Spine so that you can **reason your diagnosis**
- Refine which associated symptoms are more prominent and important for each anatomical region

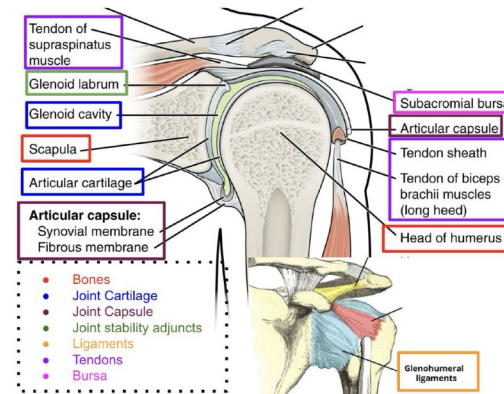


- Bones → Acute Pain after trauma/ Deformity...
- Joint Cartilage → Stiffness
- Joint Capsule → Stiffness
- Joint stability adjuncts → Pain only/ Instability
- Ligaments (connects bone to bone) → Pain only/ Instability
- Tendons (connects muscle to bone) → Pain only/ Weakness
- Bursa → Pain only



- Why "pain only → Associated symptoms" for adjuncts, ligaments and tendons?
 - Spectrum of mild inflammation to complete tear!

- Joint Cartilage → Stiffness
 - Osteoarthritis (Mechanical pain) 1
 - Primary OA
 - Secondary OA (Rotator Cuff Arthropathy)
 - Inflammatory Arthritis (inflammatory pain)
- Joint Capsule → Stiffness
 - Frozen Shoulder 2
- Joint stability adjuncts → Instability
 - Shoulder Dislocation 3
- Ligaments (connects bone to bone) → Instability
 - Shoulder Dislocation
- Tendons (connects muscle to bone) → Pain only/ Weakness
 - Rotator Cuff Tendonitis/ Impingement 4
 - Rotator Cuff Tear 5
- Bursa → Pain only
 - Subacromial Bursitis 6



Consolidate your Knowledge!

- Post Lecture Quiz for Approach to Shoulder + Elbow

[Link here](#)

M3 LW Shoulder + Elbow



Same Format for Other PE

- Revise Physical Examination skills - watch and practise on one another again and again.
- Refine your own sequence/ technique

Ortho Made Simple - Knee PE



<p>1. Inspection</p> <ul style="list-style-type: none"> Expose, on Standing - Walk around the patient. <ul style="list-style-type: none"> Front - Varus/ Valgus/ Scars, Patella squint Side - Flexion deformities Back - Popliteal swelling On Walking (Gait) <ul style="list-style-type: none"> Comment on presence/ use of walking aid Type of gait e.g., varus thrust, antalgic 	<p>2. Special Tests I</p> <ul style="list-style-type: none"> On Sitting at edge of bed [Do only in young patient suspecting patella instability] <ul style="list-style-type: none"> I-sign (individually) <ul style="list-style-type: none"> Feel for Crepitus when returning to flexion On lying Supine <ul style="list-style-type: none"> Temp/ Warmth [Compare to other leg] Knee Effusion Tests in sequence <ul style="list-style-type: none"> Fluid bulge test [<i>If =ve, comment "will not proceed with Cross fluctuance and Patella tap"</i>] <ul style="list-style-type: none"> Cross fluctuance Patellar tap Patella OA tests - Medial and lateral facet tenderness, Crepitus if not done, Patella grind and Clark's Test [<i>offer as painful</i>] <ul style="list-style-type: none"> Apprehension test [<i>In young patients suspecting patella instability</i>] 	<p>3. Range of Motion</p> <ul style="list-style-type: none"> Ask patient to do a Active Straight Leg Raise - look at side for flexion deformity <ul style="list-style-type: none"> If not full extension, extend Passively for patient <ul style="list-style-type: none"> If still cannot extend fully = "Fixed Flexion Deformity" (FFD) If can extend fully passively = "extension lag" With knee extended, flex knee to check Flexion At the end of flexing knee, do a Hip screen by internally and externally rotate the hip and ask for pain. "Hip is non tender on screening" 	<p>4. Palpation</p> <ul style="list-style-type: none"> Put knee back to 90 deg on couch and place other knee in same position <ul style="list-style-type: none"> Be deliberate in aligning heels Look from side while holding on to the foot in position - comment on posterior sag Sit on both feet Palpate knee systematically with one finger <ul style="list-style-type: none"> Tibial Tuberosity → Patellar tendon → Patella → Superior Pole → Medial and Lateral joint Line → Gerdy's Tubercle → Fibula Head
<p>5. Power</p> <ul style="list-style-type: none"> NIL 	<p>6. Special Tests II</p> <ul style="list-style-type: none"> Knees still bent while you are sitting on the feet <ul style="list-style-type: none"> Medial tibial step off (loss = PCL tear) Posterior Drawer Test (Do first to prevent false positive anterior drawer test) Anterior Drawer Test Leg in Extension <ul style="list-style-type: none"> Lachman at 30 deg MCL at 0 and 30 degrees LCL at 0 and 30 deg IF ACL/ PCL tests positive [Postgrad] Recurvatum Test <ul style="list-style-type: none"> Turn Prone for Dial Test 	<p>7. Neurovascular</p> <ul style="list-style-type: none"> DP and PT pulses Ask patient to dorsiflex foot against you, comment "no foot drop" 	<p>8. Complete/ Offer</p> <ul style="list-style-type: none"> Hip examination



Upper Limb

- ▶ Shoulder PE
- ▶ Elbow PE
- ▶ Hand Nerves PE



Lower Limb

- ▶ Hip PE
- ▶ Knee PE
- ▶ Foot and Ankle PE

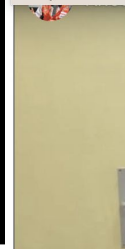
Spine

- ▶ Cervical Spine PE
- ▶ Lumbar Spine PE



Knee - Physical Examination Explanation

www.youtube.com



Knee - Physical Examination Run-Through

