

**American College of Physicians - Internal Medicine Meeting 2024  
Boston, MA**

**Diagnosis-Driven Physical Examination of the Shoulder**

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# DIAGNOSIS-DRIVEN PHYSICAL EXAMINATION OF THE SHOULDER

ACP Musculoskeletal Medicine Teaching Group  
ACP National Conference 2024

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## ACP SHOULDER EXAM CLINICAL SKILLS WORKSHOP FACULTY



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## OBJECTIVES

1. **Inspect/Observe** pertinent shoulder anatomy
2. **Palpate** key anatomical shoulder landmarks (ABC's)
3. Organize Rotator Cuff **Range of Motion/Strength** (SITS)
4. Organize Shoulder **Provocative Tests** (BIAS)
5. **Practice** shoulder exam and cases in small groups

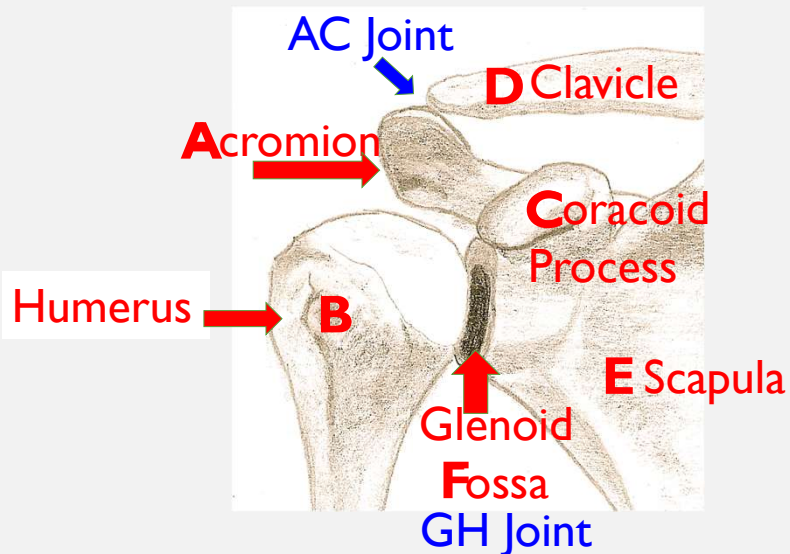
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## PRIMARY CARE SHOULDER EXAM

- Inspection
- Palpation: **ABC'S**
- Range of motion/Strength: **SITS**
- Provocative tests: **BIAS**

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## SHOULDER: BONES & JOINTS



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## PRIMARY CARE SHOULDER EXAM

- Inspection
- Palpation: **ABC'S**
- Range of motion/Strength: **SITS**
- Provocative tests: **BIAS**

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OBSERVATION: BONY DEFORMITIES  
PRIOR FRACTURE



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OBSERVATION: BONY DEFORMITIES  
AC JOINT SEPARATION



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OBSERVATION: MUSCLES  
BICEPS RUPTURE



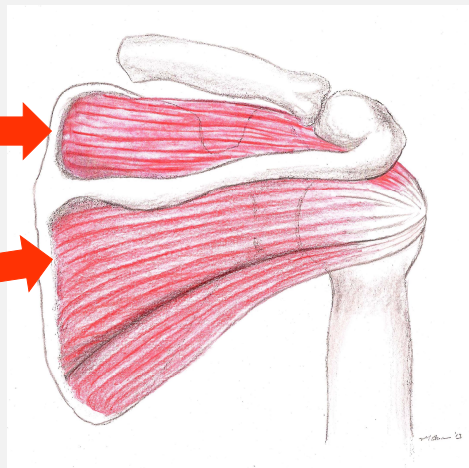
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POSTERIOR  
ROTATOR CUFF MUSCLES

Supraspinatus



Infraspinatus



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OBSERVATION: MUSCLES  
ROTATOR CUFF ATROPHY



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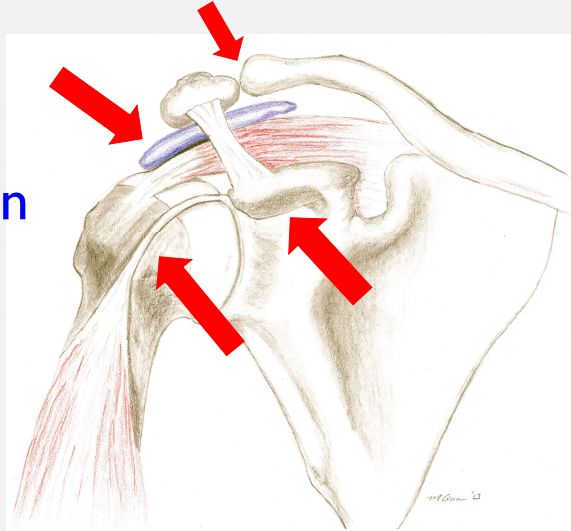
SHOULDER EXAM

- Inspection
- Palpation: **ABC'S**
- Range of motion/Strength: **SITS**
- Provocative tests: **BIAS**

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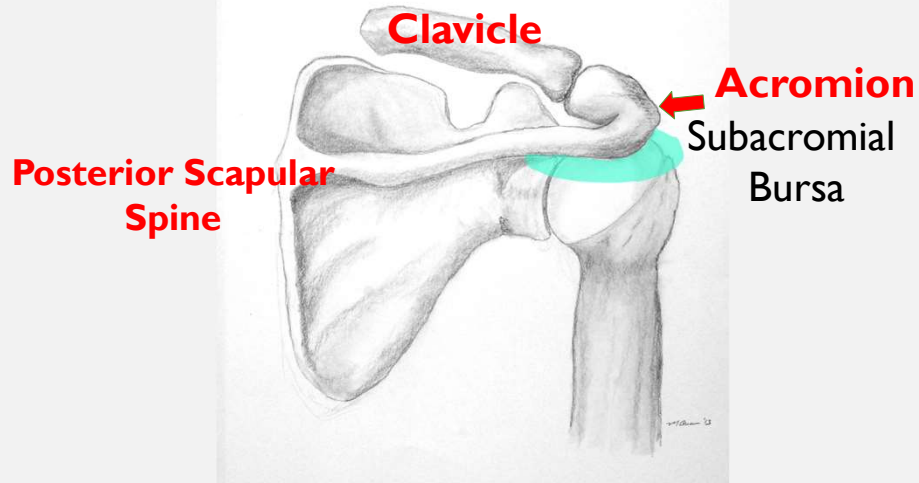
## PALPATION: **ABCS**

- **A**C joint
- **B**iceps Tendon
- **C**oracoid
- **S**ubacromial Space



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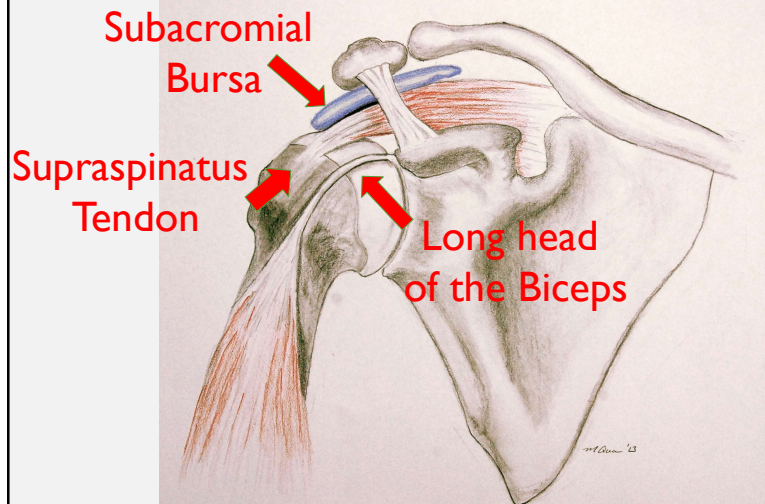
## SHOULDER BONES: POSTERIOR BONES



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## SUBACROMIAL SPACE: CONTENTS



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## PALPATION: **ABCS**

- **A**C joint                      ➤ AC joint oa/separation
- **B**iceps Tendon              ➤ LH Biceps Tendonitis
- **C**oracoid                      ➤ Frozen Shoulder
- **S**ubacromial Space       ➤ SA Impingement

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## SHOULDER EXAM

- Inspection
- Palpation: **ABC's**
- Range of motion/Strength: **SITS**
- Provocative tests: **BIAS**

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## SHOULDER QUIZ 2: ROTATOR CUFF

Name 4 Rotator cuff muscles  
and their actions:

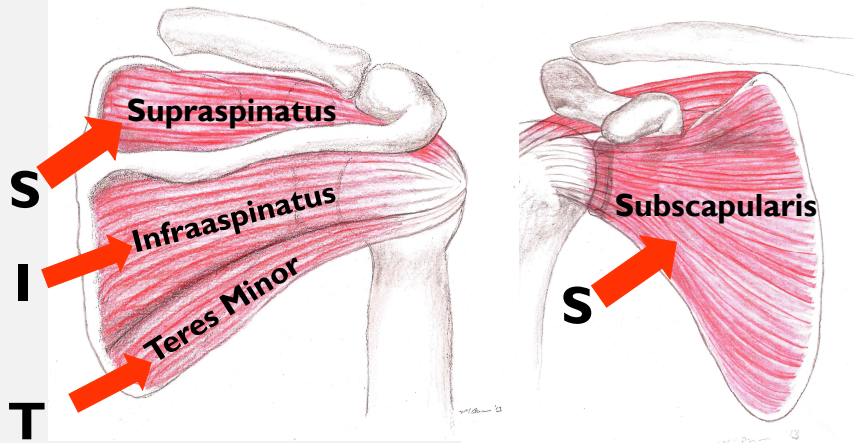
- **S** upraspinatus
- **I** nfraspinatus
- **T** eres Minor
- **S** ubscapularis

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ROTATOR CUFF MUSCLES: SITS

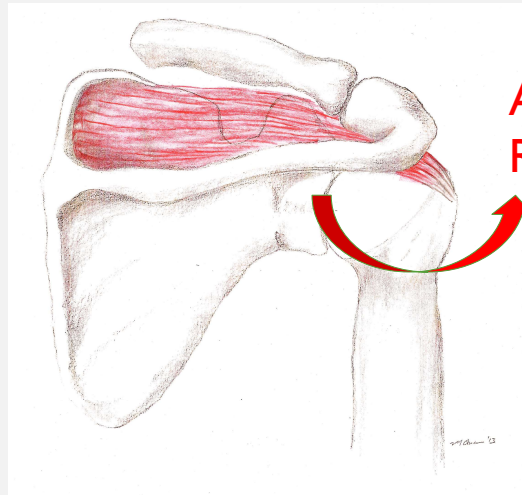
Posterior

Anterior



19

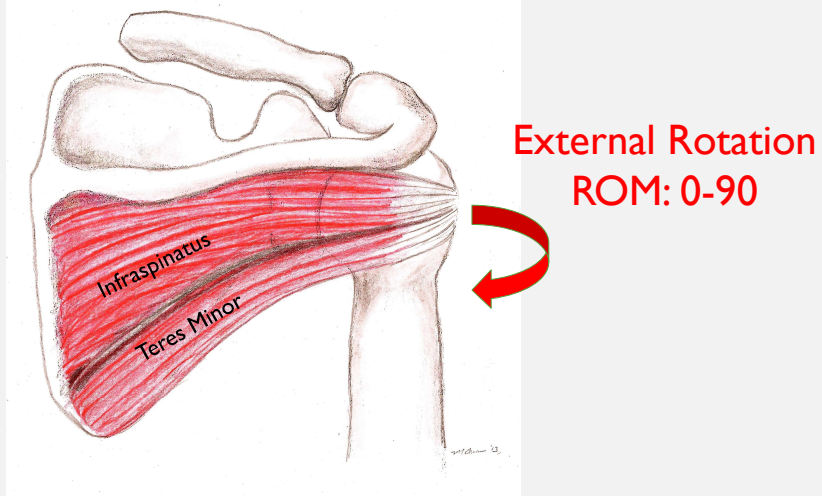
ROTATOR CUFF SITS:  
SUPRASPINATUS



Abduction  
Rom: 0-180

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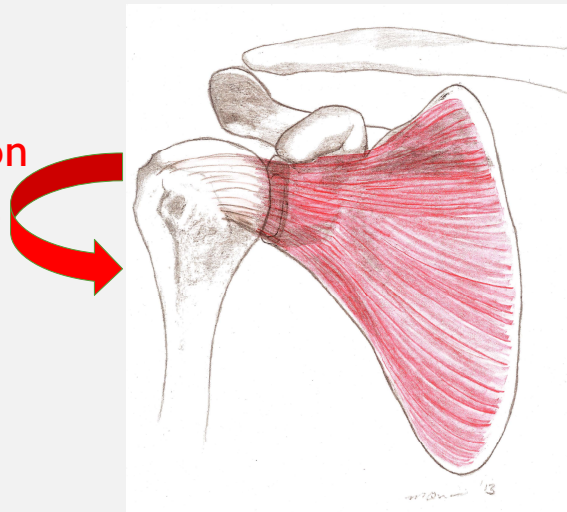
**ROTATOR CUFF SITS:**  
**INFRASPINATUS/TERES MINOR**



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**ROTATOR CUFF SITS:**  
**SUBSCAPULARIS**

Internal Rotation  
ROM: spinous  
level



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## SHOULDER EXAM TIP: ROM/STRENGTH BY SITS

SITS ROM	Full Tear Test	Strength Test:
SITS: Abd	Drop Arm	Empty Can
SITS: ER	ER Lag	Resisted ER
SITS IR	IR Lag	Lift Off/ Belly Press

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### SITS

**Muscle:**

➤ **Supraspinatus**

**Motion:**

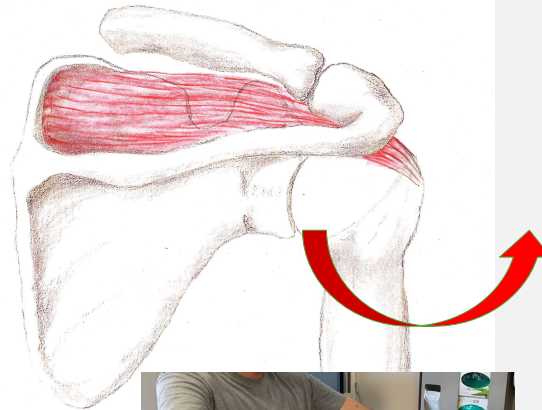
➤ **Abduction**

**Full tear test:**

➤ **Drop Arm**

**Strength test:**

➤ **Empty Can**



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SITS

**Muscle:**

- **Infraspinatus/TM**

**Motion:**

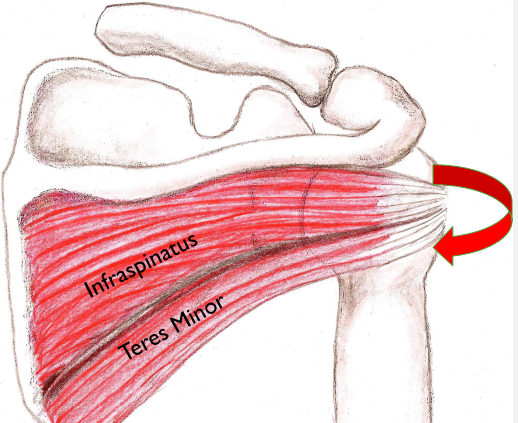
- **Ext Rotation**


**Full tear test:**

- **ER Lag**

**Strength test:**


- **Resisted ER**





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**IS/TM FULL TEAR TEST:  
EXT ROTATION LAG**



Provider pulls pt to extent of passive ER ROM...

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**SITS**

**Muscle:**

- **Subscapularis**

**Motion:**

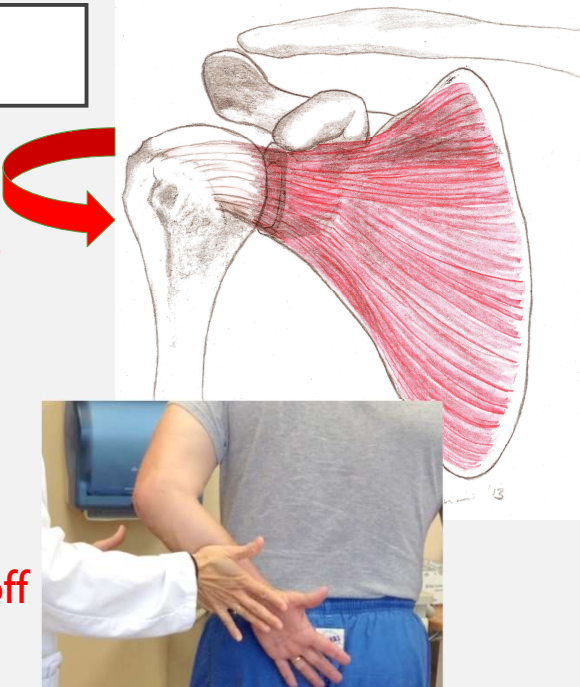
- **Int Rotation**

**Full tear test:**

- **IR Lag**

**Strength test:**

- **Gerber Lift off**
- **Belly Press**



The diagram shows the subscapularis muscle originating from the scapula and inserting into the greater tuberosity of the humerus. A red arrow indicates internal rotation. The photo shows a person performing the Gerber lift-off test, with a hand placed on the lower back to stabilize the trunk.

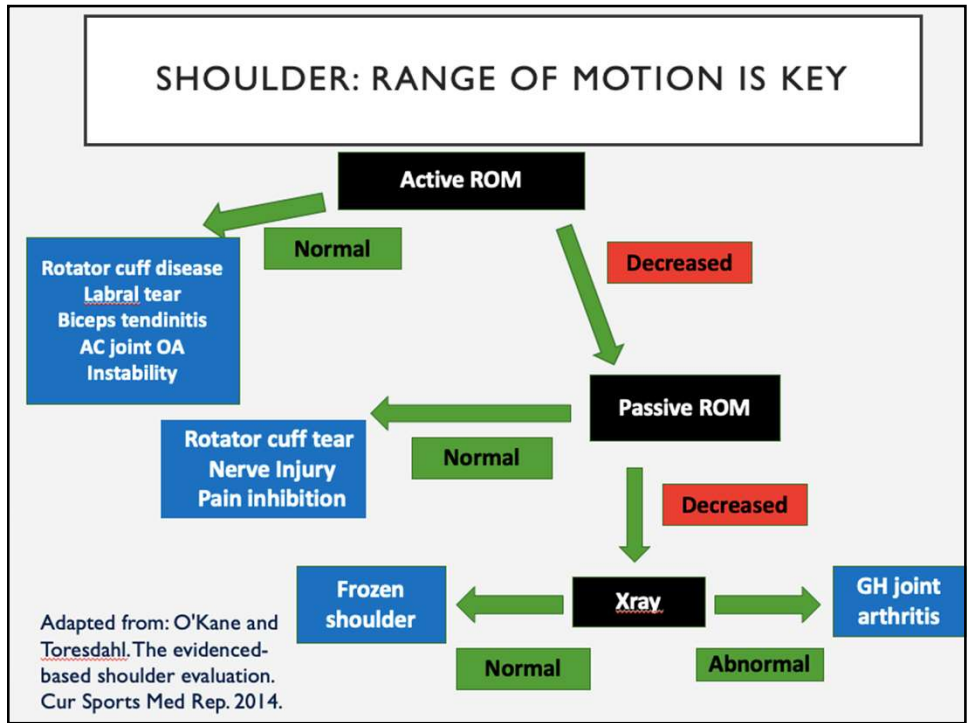
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**SHOULDER EXAM: ROM/STRENGTH**

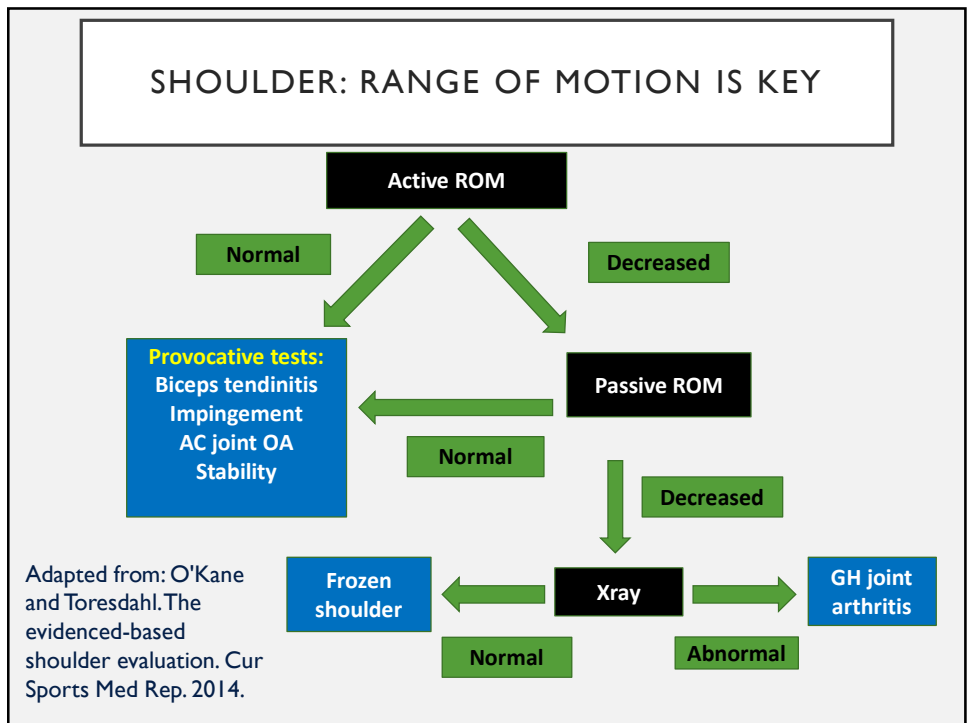
**SITS**

- **Supraspinatus**
  - ROM: Abduction Active/Passive (if limited)
  - Strength: Empty Can
  - Full tear test: Drop Arm
- **Infraspinatus/Teres Minor**
  - ROM: External Rotation Active/Passive (if limited)
  - Strength: ER Strength
  - Full tear test: ER Lag test
- **Subscapularis**
  - ROM: Internal Rotation Spinous process level Active/Passive (if limited)
  - Strength: Gerber lift off
  - Full tear test: IR Lag

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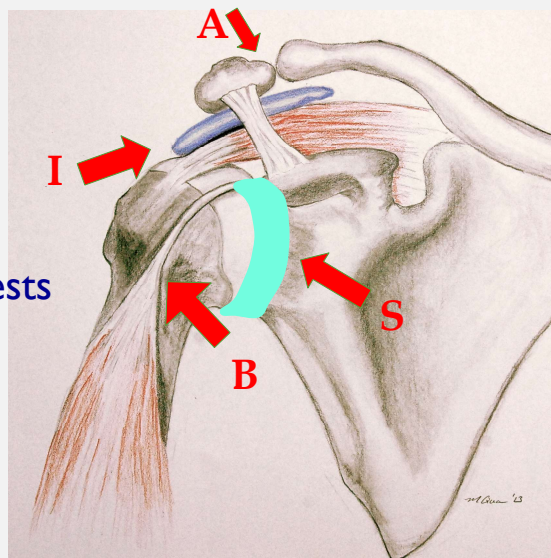
## SHOULDER EXAM

- Inspection
- Palpation: **ABC's**
- Range of motion/Strength: **SITS**
- Provocative tests: **BIAS**

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## SHOULDER PROVOCATIVE SIGNS: **BIAS**

- **Biceps Tests**
- **Impingement Tests**
- **Acromioclavicular Tests**
- **Stability Tests**



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## SHOULDER EXAM: PROVOCATIVE SIGNS: **BIAS**

- **Biceps tests**
  - Yergason's
  - Speed's
- **Impingement Tests:**
  - Neer's
  - Hawkin's
- **Acromioclavicular tests**
  - Scarf test
  - Cross arm
- **Stability Tests:**
  - Apprehension
  - Relocation
  - Load & Shift
  - Sulcus
  - O'Briens

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## **BIAS: BICEPS TESTS**

### Yergason's Test

- Resisted  
**SUPINATION**



### Speed's Test

- Resisted Biceps  
**FLEXION**

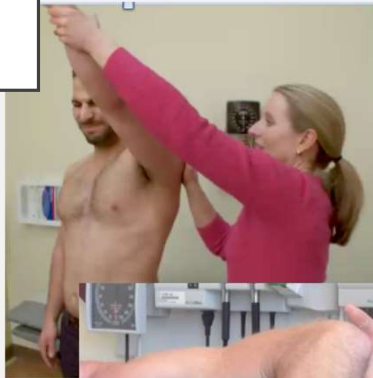


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**BIAS:**  
**IMPINGEMENT**

**Neer's Test**

- Elbow extended
- Internally rotated
- Forward flexion,



**Hawkin's Test**

- 90° forward flexion,
- elbow flexed,
- internal rotation



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**BIAS:**  
**AC JOINT TESTS**

**Scarf test**

- Active adduction



**Cross arm test**

- Resisted adduction



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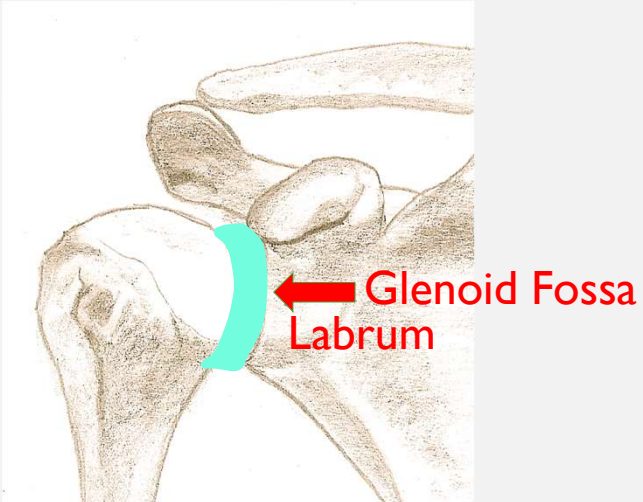
## BIAS: STABILITY

- Anterior
  - Apprehension/relocation
  - Load & Shift
- Posterior
  - Load & Shift
- Inferior
  - Sulcus sign
- Labrum
  - O'Brien's Test



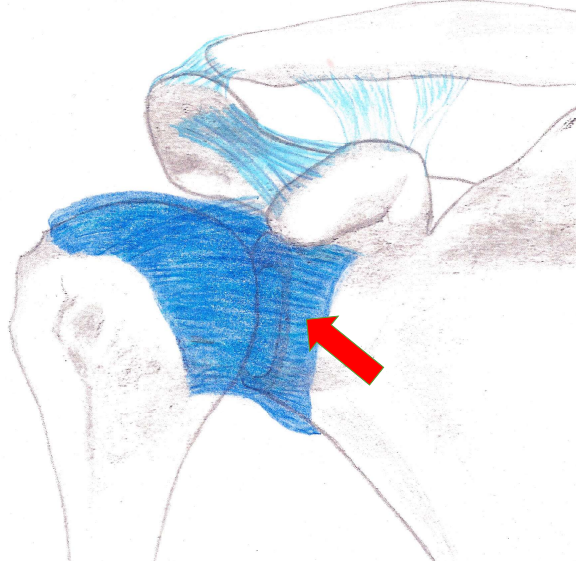
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## SHOULDER GLENOHUMERAL STABILIZERS: **LABRUM**



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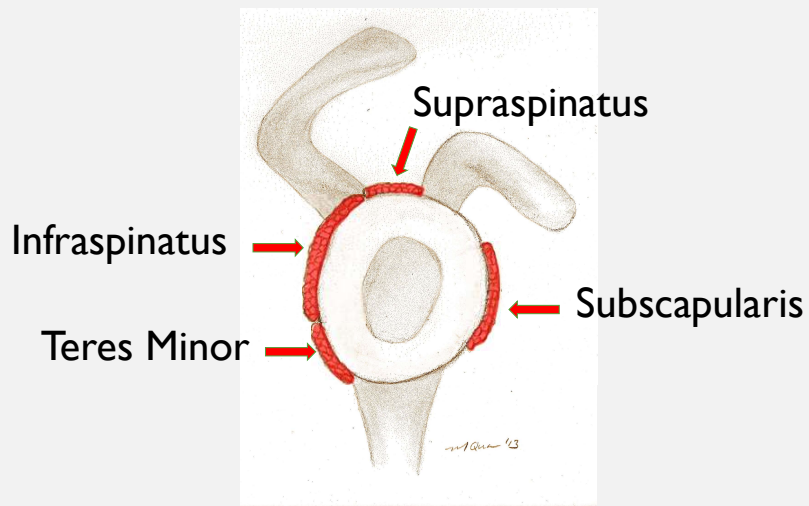
SHOULDER GLENOHUMERAL STABILIZERS:  
**CAPSULE**



- Prevents anterior, inferior and posterior displacement

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SHOULDER GLENOHUMERAL STABILIZERS:  
**ROTATOR CUFF: DYNAMIC STABILIZERS**



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## SHOULDER EXAM

- Inspection
- Palpation: **ABCS**
- Range of motion/Strength: **SITS**
- Provocative tests: **BIAS**

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## THE ESSENTIAL SHOULDER EXAM FOR INTERNISTS

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• <b>Inspection</b> – Bony abnormalities, muscle atrophy</li> <li>• <b>Palpation ABC's:</b> AC joint, Biceps tendon, Coracoid, Subacromial space</li> </ul>   |  |
| <ul style="list-style-type: none"> <li>• <b>ROM/Strength: SITS</b> <ul style="list-style-type: none"> <li>• <b>Supraspinatus</b> <ul style="list-style-type: none"> <li>• Abduction</li> <li>• Drop Arm/Empty Can</li> </ul> </li> <li>• <b>Infraspinatus/Teres Minor</b> <ul style="list-style-type: none"> <li>• External Rotation</li> <li>• ER Lag test/ Resisted ER</li> </ul> </li> <li>• <b>Subscapularis</b> <ul style="list-style-type: none"> <li>• Internal Rotation Spinous process level</li> <li>• IR Lag/Gerber lift off</li> </ul> </li> </ul> </li> </ul> | <p><b>Provocative Tests: BIAS</b></p> <ul style="list-style-type: none"> <li><b>Biceps</b> <ul style="list-style-type: none"> <li>• Yergason's</li> <li>• Speeds</li> </ul> </li> <li><b>Impingement</b> <ul style="list-style-type: none"> <li>• Neer's</li> <li>• Hawkins</li> </ul> </li> <li><b>AC Joint</b> <ul style="list-style-type: none"> <li>• Scarf</li> <li>• Cross Arm</li> </ul> </li> <li><b>Stability</b>—Next layer</li> </ul> |

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All Shoulder Exam slides courtesy of Drs. Anna Quan and Kalli Hose, UCSD School of Medicine  
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Key Features of Top Shoulder Problems				
Diagnosis	History	Exam	Workup	Treatment
<b>Glenohumeral (GH) OA</b>	Older patient Insidious onset, <b>diffuse pain, limited ROM</b>	<b>Decreased AROM + PROM</b> Cuff testing: strength intact, minimal discomfort	Xray: loss of GH joint space, flat humeral head, osteophytes, sclerosis	Non-op including GH CSI Surgery referral when fails
<b>Adhesive Capsulitis</b>	Similar to GH OA, age 40-60, ♀ > ♂	<b>Same as GH OA</b>	<b>Normal xray</b>	Good results w/ non-op including GH CSI but may take 1-2 years
<b>RTC: suspected partial thickness tear/ tendinopathy/ subacromial bursitis</b>	<b>Pain w/ overhead reach, night pain,</b> radiation to elbow (but not beyond)	Full ROM (active may be limited by pain), + Neers and Hawkins, <b>pain with cuff testing but strength intact</b>	•Clinical dx •xray if trauma/concern for fx •MRI (xray prior) only if fails non-op measures	Non-operative rx: •activity mod •analgesics • PT • 1-2 subacromial corticosteroid injections (CSI)
<b>RTC: suspected full thickness tear</b>	As above + weakness	AROM may be limited by pain/weakness. Full PROM. Cuff testing w/ pain + <b>weakness</b>	•Xray + MRI for acute suspected FTT, or acute on chronic in young patient	Urgent surgery for acute traumatic FTT; expedited for acute on chronic

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Diagnosis	History	Exam	Workup	Treatment
<b>Biceps Tendonitis</b>	Ant/medial shoulder pain, <b>worse w/ elbow flexion/supination</b> (e.g. turning door knob)	TTP over long-head of biceps + Speeds, Yergasons	Clinical dx	<ul style="list-style-type: none"> <li>•Non-op, biceps tendon CSI</li> <li>•Surgery referral if fails</li> </ul>
<b>Labral Tear</b>	<b>Young, active patients</b> <b>clicking/catching</b>	+ O'Briens	<ul style="list-style-type: none"> <li>•Xray for trauma or r/o other causes</li> <li>•MRI vs MR arthrogram</li> </ul>	<ul style="list-style-type: none"> <li>•Non-op trial for most</li> <li>•&lt; 35, acute injury: surgery referral for SLAP repair</li> </ul>
<b>AC Joint OA/Sprain</b>	Hx shoulder injury; weight lifting (sprain). <b>Anterior shoulder pain</b>	TTP AC joint + Cross arm test	Xray shows AC OA or joint separation	<ul style="list-style-type: none"> <li>•Non-op</li> <li>•AC joint CSI</li> <li>•Surgery referral if fails</li> </ul>
<b>GH Instability</b>	<b>Young, active patients,</b> <b>dislocation, subluxation,</b> "dead/numb" feeling deltoid	+ Apprehension, relocation	Xray: Hill Sachs lesion	<ul style="list-style-type: none"> <li>•Non-op</li> <li>•Surgery referral if fails</li> </ul>