

MED439
KING SAUD UNIVERSITY

Anatomy of the shoulder

Musculoskeletal Block - Lecture 11

Objective:

- ✓ List the name of muscles of the shoulder region
- ✓ Describe the anatomy of muscles of shoulder
- ✓ the name of muscles of the shoulder region regarding: attachments of each of them to scapula & humerus, nerve supply and actions on shoulder joint
- ✓ List the muscles forming the rotator cuff and describe the relation of each of them to the shoulder joint.
- ✓ describe the anatomy of the shoulder joint regarding: type, articular surfaces, stability, relations and movements

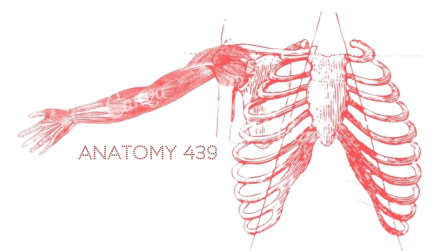
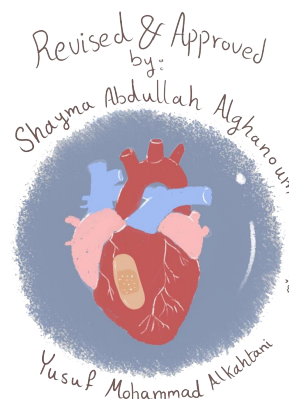
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Important

In male's slides only

In female's slides only

Extra information, explanation



[Editing file](#)

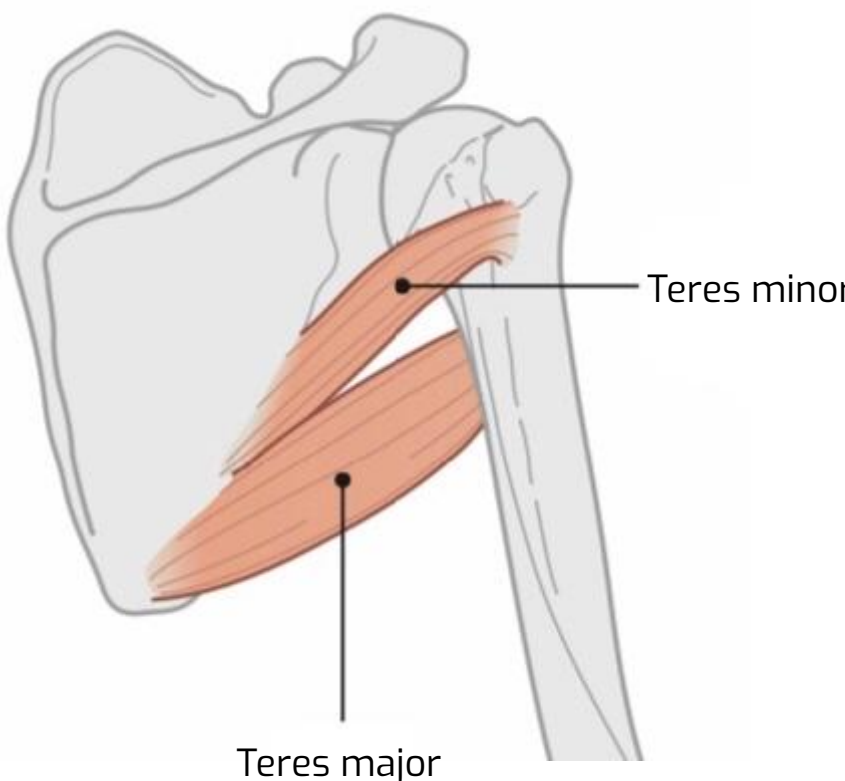
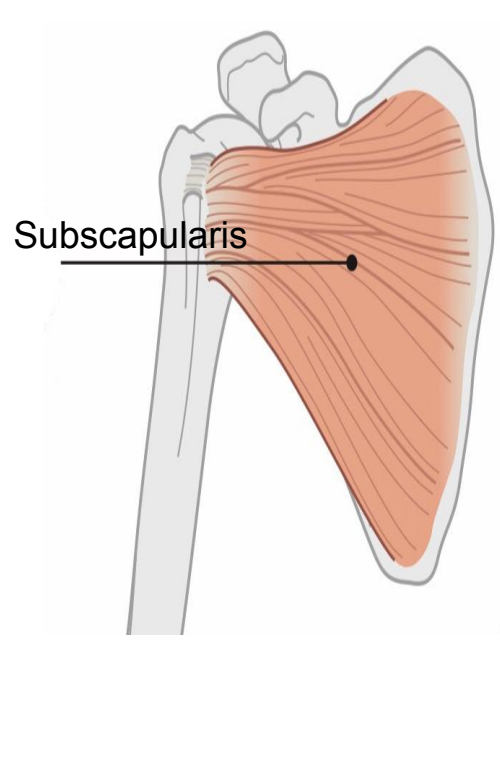


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MUSCLES OF SHOULDER REGION

These are muscles connecting scapula to humerus (move humerus through shoulder joint) :

Muscles	Deltoid	Supraspinatus	Infraspinatus
	A triangular muscle that forms the rounded contour of the shoulder.		
Origin	Lateral 1/3 of clavicle acromion and spine of scapula	supraspinous fossa.	infraspinous fossa
Insertion	Deltoid tuberosity of humerus	Greater tuberosity of humerus	
Nerve supply	Axillary nerve	Suprascapular nerve.	
Action	<p>-Anterior fibers: flexion and medial rotation of humerus (arm, shoulder joint)</p> <p>-Middle fibers : abduction of humerus 15°-90°</p> <p>-Posterior fibers: extension & lateral rotation of humerus</p>	Adduction of humerus from 0° -15°	Lateral rotation of humerus
Picture			

Muscles	Teres minor	Teres major	Subscapularis
Origin	lateral border of Scapula.		subscapular fossa.
Insertion	greater tuberosity of humerus	medial lip of bicipital groove of humerus (with latissimus dorsi & pectoralis major).	lesser tuberosity of humerus.
Nerve supply	Axillary nerve	lower subscapular nerve.	upper & lower subscapular nerves.
Action	lateral rotation of humerus	extension, adduction & medial rotation of humerus (as action of latissimus dorsi).	medial rotation of humerus.
Picture			

Shoulder joint

STABILITY: (Not stable) why?:

- Head of humerus is **3 times larger** than glenoid cavity.
- Capsule is **redundant**.
- **Few** ligamentous support glenoid labrum, coracohumeral.
- Main Support: muscles around the joint (**ROTATOR CUFF**).
- Wide range of movement.
Range of movement and stability have inverse relationship



Type:

- Synovial multiaxial (ball & socket)

ARTICULAR SURFACES:

- Head of humerus
- Glenoid cavity of scapula

ROTATOR CUFF

-A **tendinous cuff** around the shoulder joint covering its **Anterior, Posterior** and **Superior** aspects
-The cuff is deficient inferiorly and this is the site of potential weakness.

-It is formed of **4 muscles: Supraspinatus, Infraspinatus, Teres minor & Subscapularis (SITS)**

-The **tone** of these muscles help in **stabilizing** the shoulder joint.

-Rotator cuff can be **damaged** due to **trauma** (during playing baseball) or **disease** (in older individuals).
-**Supraspinatus tendon** is the most common site of rotator cuff injury.

-Trauma can **tear** or **rupture** one or more tendon (s) forming the cuff. Patients with rotator injury will present with **pain, shoulder instability, and limited range of motion.**

BURSAE IN RELATION TO SHOULDER JOINT

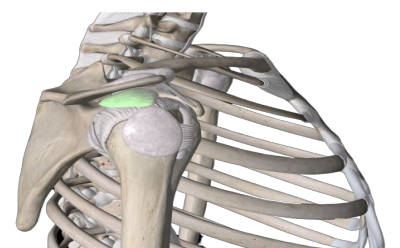
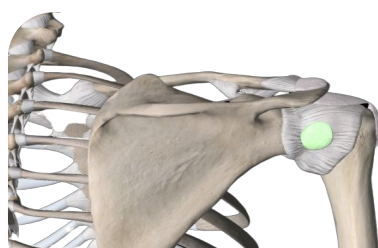
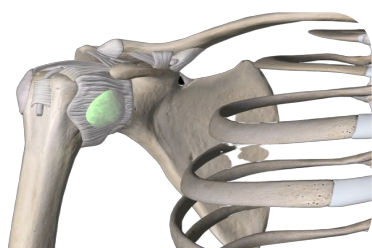
They reduce **friction** between tendons, joint capsule & bone.

They are liable to be inflammed following injury of rotator cuff muscles

Subscapularis bursa
between subscapularis tendon & capsule.

Infraspinatus bursa
between infraspinatus tendon & capsule.

Subacromial bursa
between deltoid, supraspinatus and capsule.

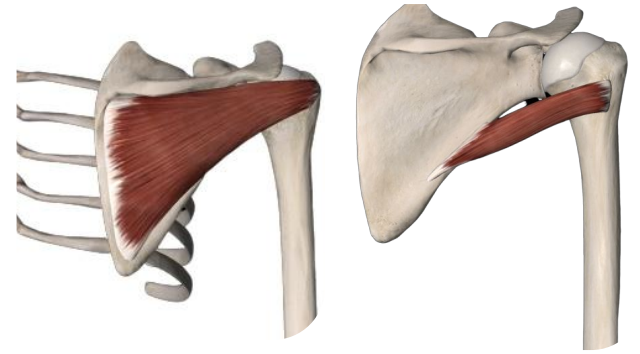


RELATIONS OF SHOULDER JOINT

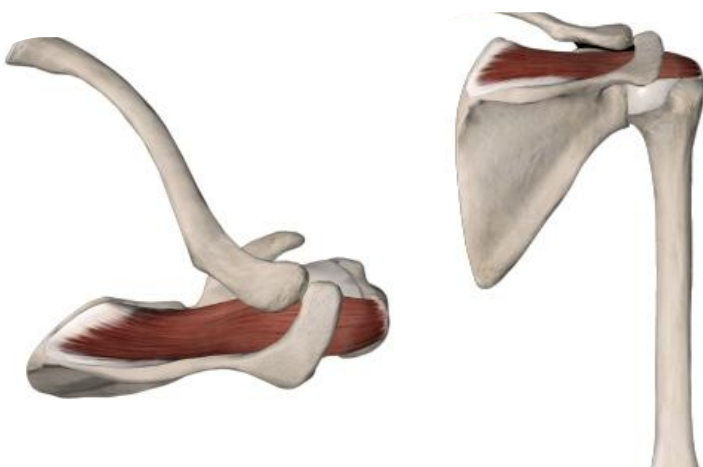
ANTERIOR
subscapularis



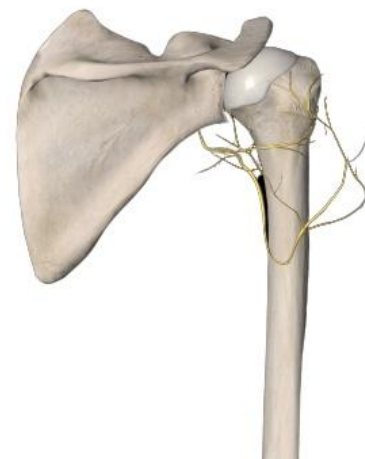
POSTERIOR
infraspinatus, teres minor



SUPERIOR
supraspinatus



INFERIOR
axillary nerve



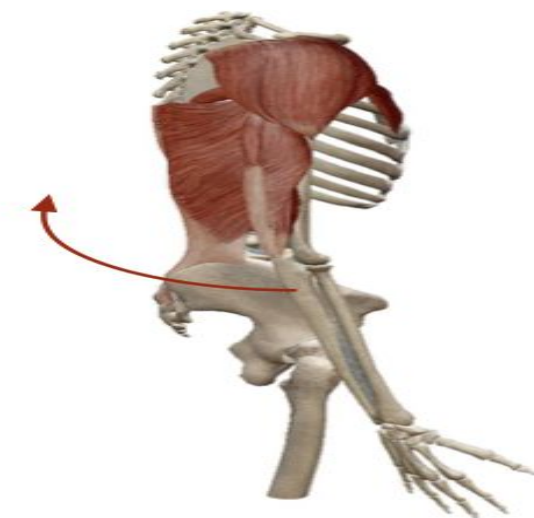
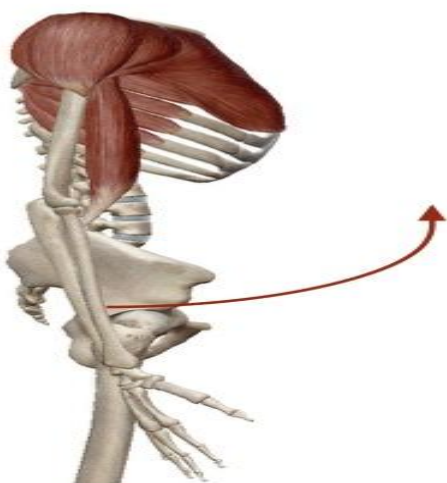
MOVEMENTS OF SHOULDER JOINT

FLEXION

- Anterior fibers of deltoid
- Pectoralis major
- Coracobrachialis (muscle of arm)
- Short head of biceps

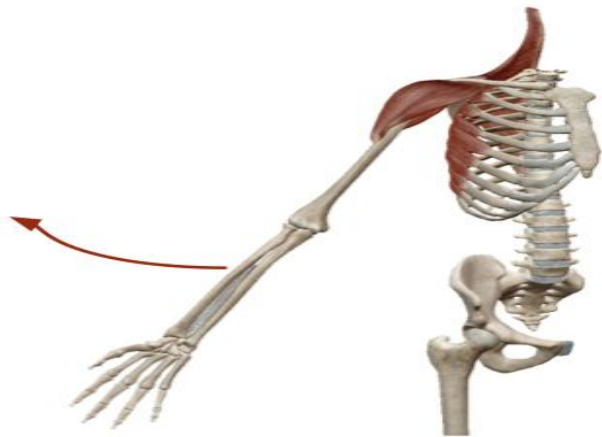
EXTENSION

- Posterior fibers of deltoid
- Latissimus dorsi
- Teres major



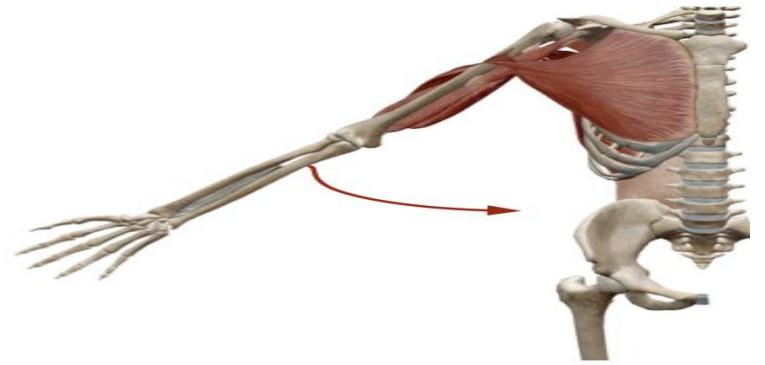
ABDUCTION

- From **0° - 15°**:
Supraspinatus
- From **15° - 90°**:
Middle fibers of deltoid



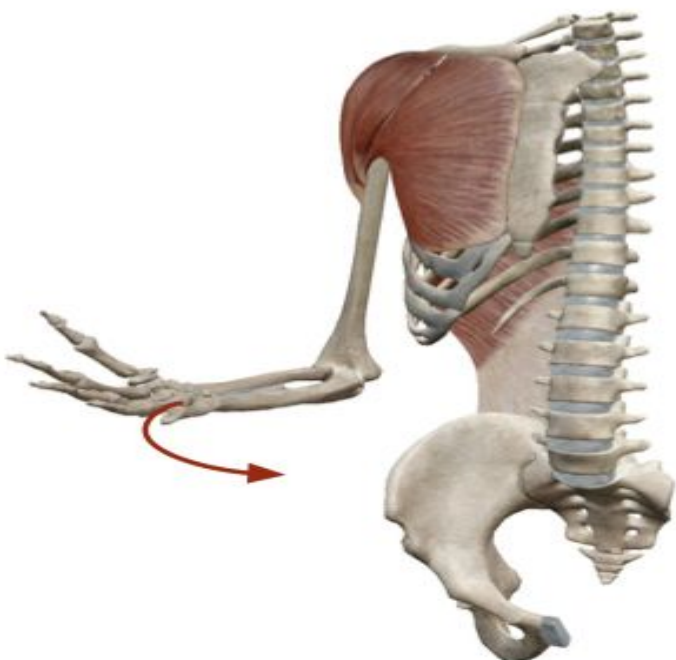
ADDUCTION

- Pectoralis major
 - Latissimus dorsi
 - Teres major
- (Inserted in bicipital groove)



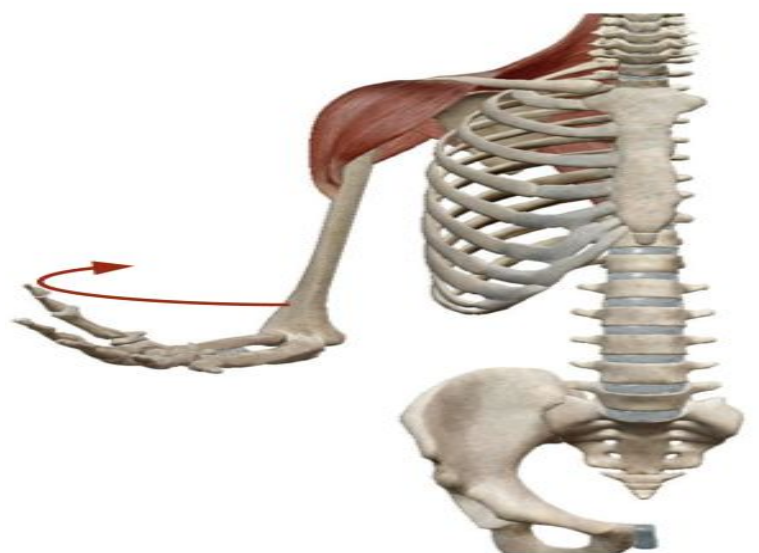
MEDIAL ROTATION

- Pectoralis major
 - Latissimus dorsi
 - Teres major
- (Inserted in bicipital groove)
- Anterior fibers of deltoid
 - Subscapularis



LATERAL ROTATION

- Posterior fibers of deltoid
- Infraspinatus
- Teres minor



MCOs

Q1:shoulder joint is which type of synovial joint?

- A.uniaxial
- B.plane
- C.multiaxial
- D.bi axial

Q2: which muscle is inserted in the greater tuberosity of humerus?

- A.subscapularis
- B.teres minor
- C.deltoid
- D.infraspinatus

Q3:which are the muscles supplied by axillary nerve?

- A. deltoid and Teres major
- B. teres minor and deltoid
- C. Teres minor and major
- D. infraspinatus and Deltoid

Q4: which of these actions isn't done by deltoid

- A. Adduction
- B. Abduction
- C. Lateral rotation
- D. Extension

Q5: Rotator cuff is deficient...?

- A.anteriorly
- B.posteriorly
- C.inferiorly
- D.superficially

Q6:one of rotator cuff muscles ?

- A. Teres major
- B. teres minor
- C. Deltoid
- D. Pectoralis minor

Q7:which one of these muscles inserted in bicipital groove?

- A.Teres Major
- B.Coracobrachialis
- C.Deltoid
- D.Infraspinatus

Q8:Abduction of Supraspinatus from...?

- A.15° - 90°
- B.0° - 15°
- C.45° - 90°
- D.>90°

Q9:The axillary nerve travels.....through the shoulder joint

- A.Anteriorly
- B.Posteriorly
- C.Superiorly
- D.Inferiorly

Q10:which bursae is between infraspinatus tendon & capsule.

- A.Infraspinatus
- B.Subscapularis
- C.Subacromial

Q11:Bursae importance is to reduce...?

- A.Inflammation
- B.Friction
- C.Infection
- D.Surface Area

Q12:Flexion in shoulder joint is done by..?

- A.Teres Major
- B.Pectoralis Major
- C.Latissimus Dorsi
- D.Subscapularis

1)C
2)D
3)B
4)A
5)C
6)B

7)A
8)B
9)D
10)A
11)B
12)B

SAOs

Q1: List the muscles inserted in bicipital groove ?

~~Pectoralis major~~
~~Latissimus dorsi~~
~~Teres major~~

Q2: What is the importance of bursae ?

~~They reduce friction between tendons, joint capsule & bone.~~

Q3m: What is the rotator cuff ?

~~A tendinous cuff around the shoulder joint covering its Anterior, Posterior and Superior aspects~~

Q4: Origin of deltoid?

~~Lateral 1/3 of clavicle acromion and spine of scapula~~

This lecture is done by:



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SPECIAL THANKS TO THE AMAZING
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