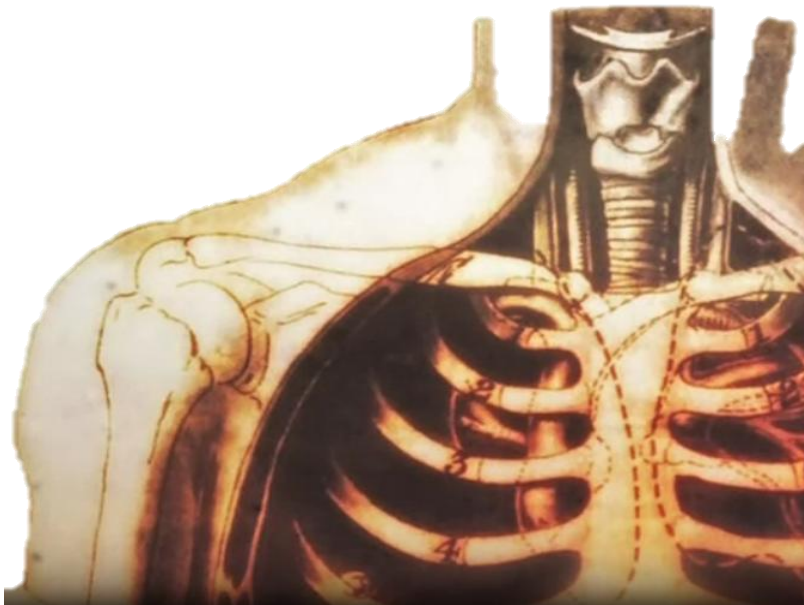




Anatomy Team
433

**KingSaud University
College of medicine
Musculoskeletal Block**



Anatomy of shoulder region

1

Objectives

- **List the name of muscles of the shoulder region.**
- **Describe the anatomy of muscles of 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 shoulder joint regarding: type, articular surfaces, stability,**

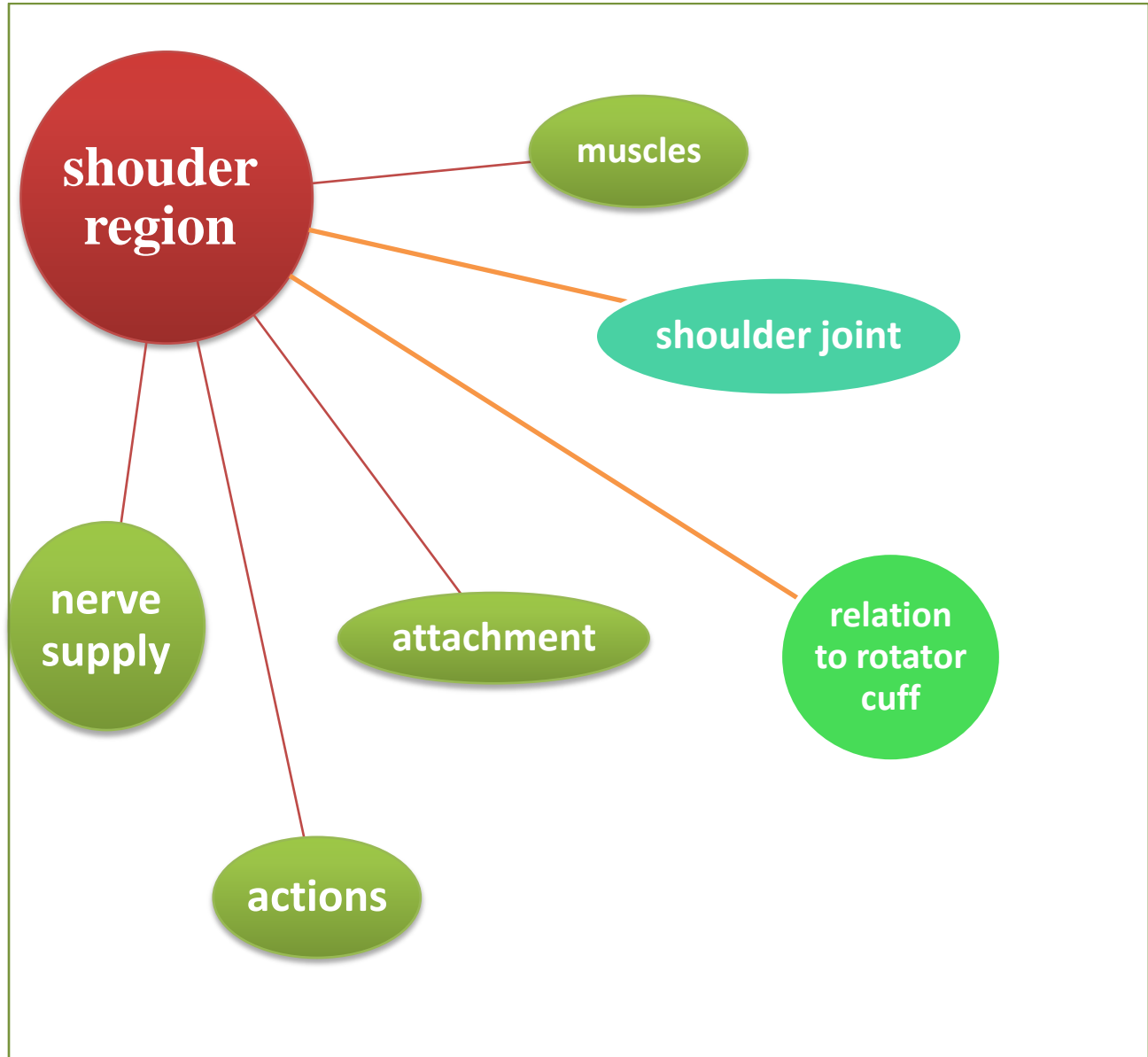
Color Index

- **Red :Important.**
- **Violet: Explanation.**
- **Gray: Additional Notes.**

Other colors are for
Coordination

Say " bsm Allah" then start

Mind Map



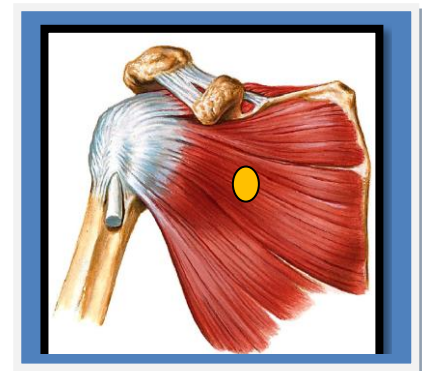
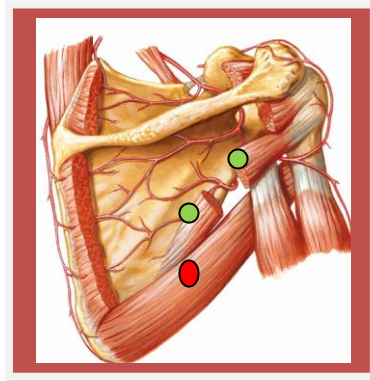
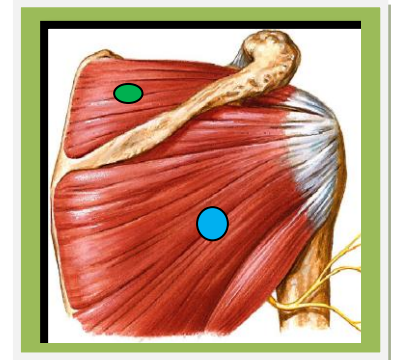
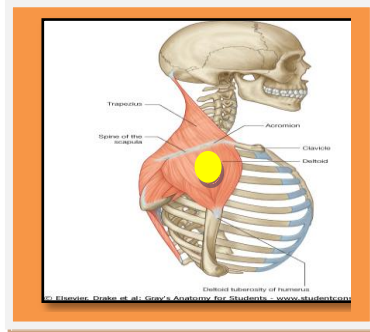
MUSCLES OF SHOULDER REGION :

These muscles connect scapula to humerus

So their function is **move humerus through shoulder joint**

They are :

1. **Deltoid.**
2. **Supraspinatus.**
3. **Infraspinatus.**
4. **Teres minor.**
5. **Teres major.**
6. **Subscapularis**



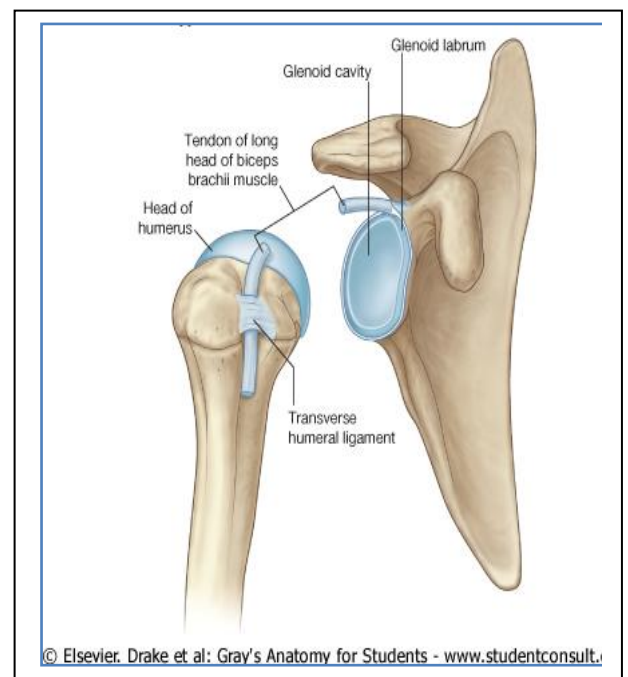
SHOULDER joint :

Anatomical name : **Glenohumeral**

TYPE : Synovial, multiaxial, ball & socket

ARTICULAR SURFACES :

1. Head of humerus
 2. Glenoid cavity (fossa) of scapula
- Covered with hyaline cartilage

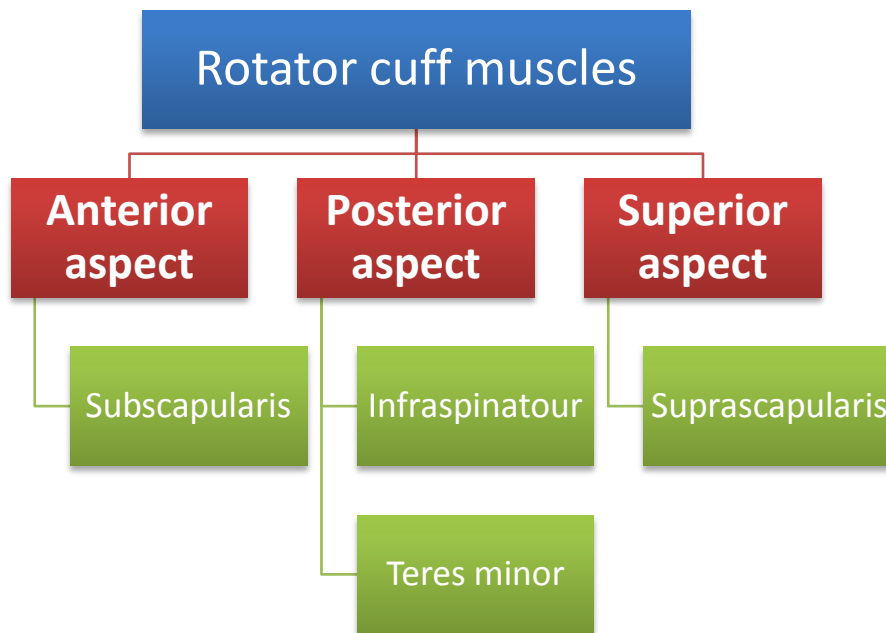


The muscle	Origin	Insertion	Nerve supply	Actions
DELTOID; A triangular muscle, forms the contour of the shoulder	lateral 1/3 of clavicle + acromion and spine of scapula	deltoid tuberosity of humerus.	axillary nerve	<i>Anterior fibers:</i> flexion & <u>Medial</u> rotation of humerus (arm, shoulder joint). <i>Middle fibers:</i> abduction of humerus from 15° - 90 <i>Posterior fibers:</i> extension & <u>Lateral</u> rotation of humerus
SUPRASPINATUS & INFRASPINATUS	1. <i>Supraspinatus:</i> supraspinous fossa. 2. <i>Infraspinatus:</i> infraspinous fossa.	greater tuberosity of humerus.	suprascapular nerve.	<i>Supraspinatus:</i> abduction of humerus from 0° - 15 <i>Infraspinatus:</i> <u>Lateral</u> rotation of humerus
TERES MINOR	lateral border of scapula	greater tuberosity of humerus	axillary nerve.	<u>Lateral</u> rotation of humerus
TERES MAJOR	lateral border of scapula	bicipital groove of humerus	lower subscapular nerve	extension, adduction & <u>Medial</u> rotation of humerus
SUBSCAPULARIS	subscapular fossa.	lesser tuberosity of humerus	upper & lower subscapular nerves.	<u>Medial</u> rotation of humerus

- THE SHOULDER JOINT IS NOT STABLE DUE TO:
- 1. Head of humerus is 3 times larger than glenoid cavity OR (glenoid cavity has shallow surface).
- 2. Capsule is redundant.
- 3. Little ligamentous support: glenoid labrum, coracohumeral ligament.
- 4. Wide range of movement (the most mobile joint) .

Rotator cuff

Tendon portion of group of muscles cross the shoulder joint and insert into the humerus, which helps in stabilizing the shoulder joint.



Also, it is called SITS according to first letter of each muscle.

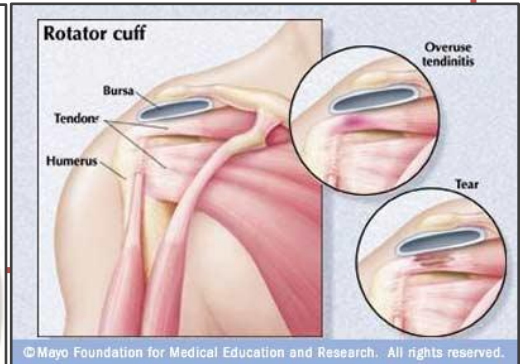
+ There is a video at the end explaining the rotator cuff in 3D.

- It is **deficient inferiorly**, and the weakest point in shoulder joint.
- Subscapularis tendon **is the most common injured rotator cuff muscle**.



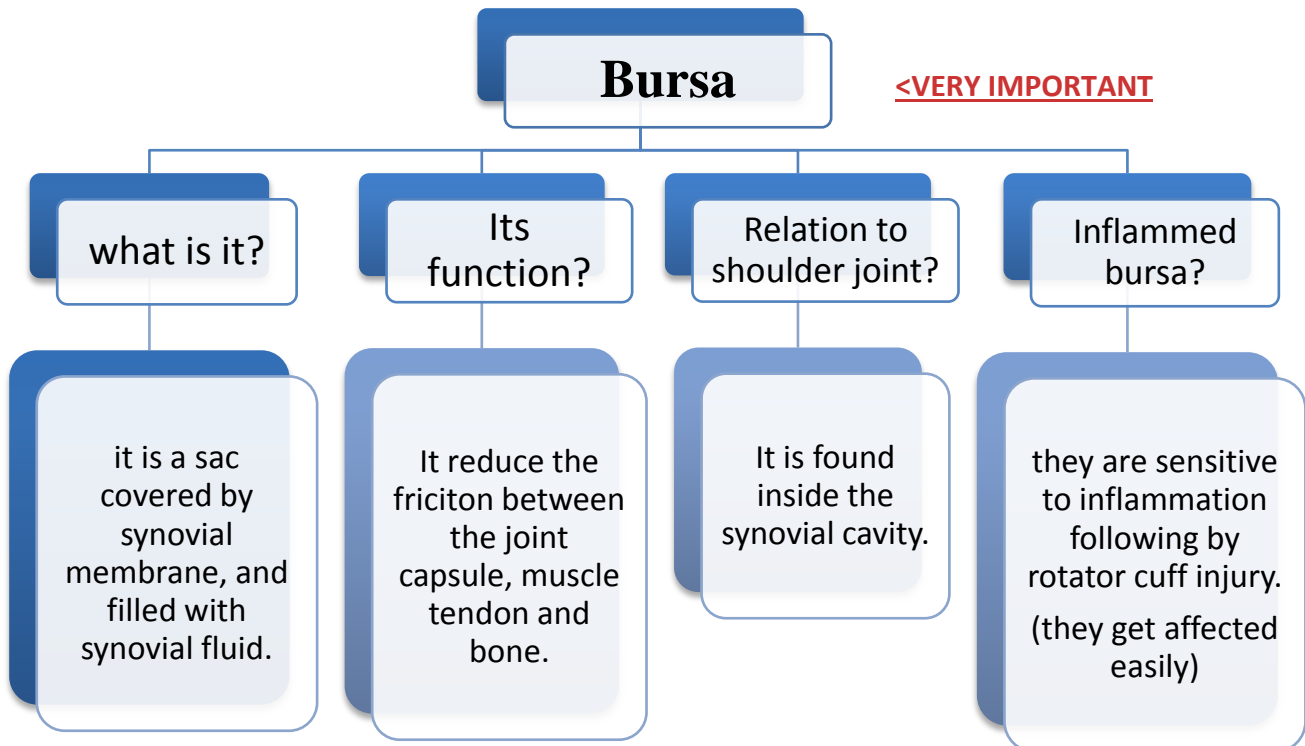
Patient with rotator cuff damage will present with:

- Pain
- Restricted movement
- Shoulder instability



Shoulder joint:

- ✓ **Type:** Multiaxial, synovial and “ball&socket” joint
- ✓ **Articulation:** between **glenoid cavity** (lateral angle of scapula) & **head of humerus**
- ✓ **Stability:** Depend on Rotator cuff muscles

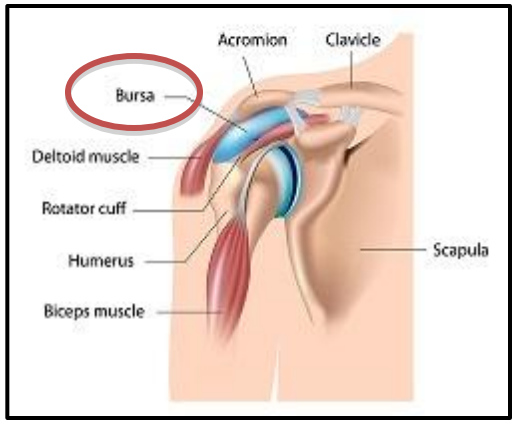


3 bursae found in the shoulder joint

subscapularis bursae:
between subscapularis tendon and capsule.

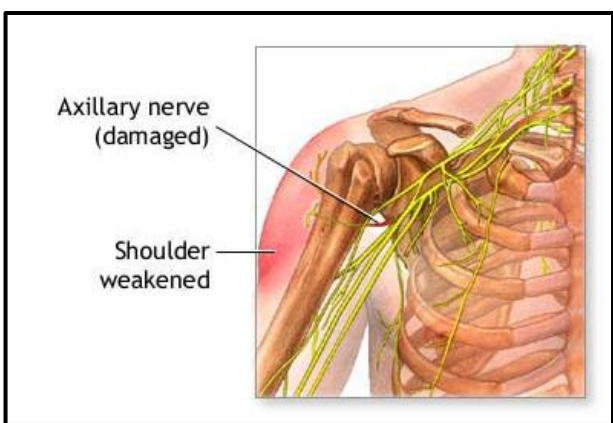
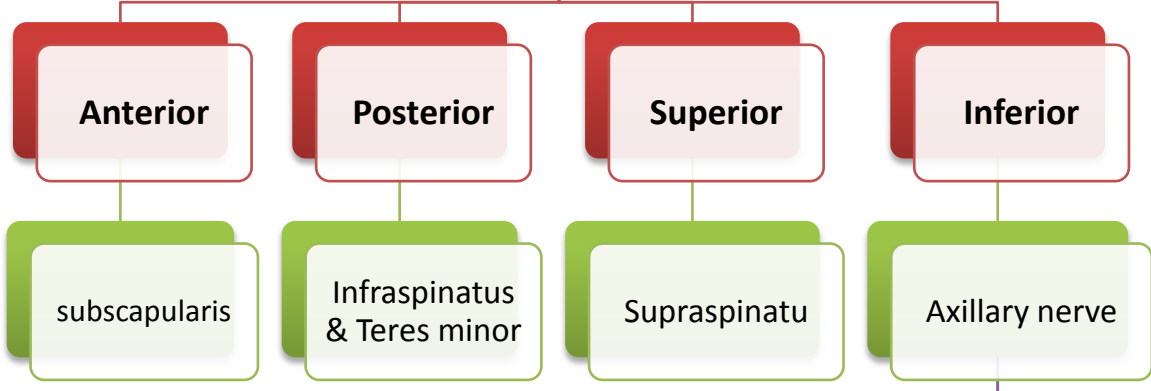
Infraspinatus bursae:
between infraspinatus tendon and capsule.

subacromial bursae:
between deltoid, supraspinatus tendon and capsule.



Any injury in each area will affect the involved structures

Relations of shoulder joint



the axillary nerve is passing through cervicoaxillary canal inferior to shoulder joint.

Result: paralysis of teres minor and deltoid.

Movement of shoulder joint

Flexion

1. Anterior fiber of deltoid
2. Pectoralis major
3. Corachobrachialis
4. Short head of biceps brachii

Extension

1. Posterior fibers of deltoid
2. Latissimusdorsi
3. Teres major

Abduction

1. From 0° - 15°: Supraspinatus
2. From 15° - 90 °: Middle fibers of deltoid

Adduction

1. Pectoralis major
2. Latissimusdorsi
3. Teres major

Inserted in bicipital groove

Medial rotation

1. Pectoralis major
2. Latissimusdorsi
3. Teres major
4. Anterior fibers of deltoid
5. Subscapularis

Inserted in bicipital groove

Lateral Rotation

1. Posterior fibers of deltoid
2. Infraspinatus
3. Teres minor

SUMMARY

❖ MUSCLES OF SHOULDER REGION:

- ❖ Origin: scapula.
- ❖ Insertion: humerus.
- ❖ Action: move humerus (SHOULDER JOINT)
- ❖ Nerve supply: anterior rami of spinal nerves through brachial plexus.
- ❖ ROTATOR CUFF: 4 muscles in scapular region surrounds and helps in stabilization of shoulder joint (*supraspinatus, infraspinatus, teres minor, subscapularis*).
- ❖ Shoulder joint:
 - ❖ Type: synovial, ball & socket
 - ❖ Articular surfaces: head of humerus & glenoid cavity of scapula
 - ❖ Stability: depends on rotator cuff
 - ❖ Relations: rotator cuff and axillary nerve
 - ❖ Movement: flexion, extension, abduction, adduction, medial & lateral rotation

Remember That:

- ✓ There are 6 muscles in the shoulder region
- ✓ The shoulder joint is a synovial joint
- ✓ The rotator cuff muscles are the main support of the shoulder joint.
- ✓ There are 3 bursae found in the shoulder joint.
- ✓ The bursa is sensitive to injury or pain, and it involves the structures surrounding it.

Multiple Choice Questions

Q1: The prime mover of abduction of the humerus is :

a/ *Supraspinatus* b/ *Deltoid* c/ *Teres minor* d/ *trapezius*

Q2: which one of the following muscle is inserted laterally to the greater tuberosity of humerus:

1. a/ *Deltoid* b/ *Infraspinatus* c/ *Teres major*.

Q3\The tendons of the following muscles form the Rotator cuff **except** which?

a)Teres major b)Supraspinatus c)Subscapularis d)Teres minor

Q4\Which of the following nerves is related to **the inferior aspect** of the shoulder joint and may be injured in dislocation of the joint?

a)Radial b)Axillary c)Ulnar d)Median

Q5\Which of the following is responsible for **medial rotation** of the shoulder joint?

a)Infraspinatus b) Latissimusdorsi c)Subscapularis d)Deltoid

Q Ans. :

1- a 2- b
3-A 4-B 5-C

Useful videos will help you to understand in 3D:



[Anatomy Zone: shoulder joint](#)



[muscle of shoulder](#)



[Anatomy Zone: rotator cuff muscles](#)



Anatomy Team

433

For any comments Please don't hesitate

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