



ANATOMY TEAM

ANATOMY OF THE SHOULDER REGION

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OBJECTIVES

At the end of the lecture, students should:

- *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, relations & movements.*

Done By:

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Notes:

1- All of the muscle of the shoulder region has the same origin (scapula).

Remember: it is the same insertion of superficial back muscle EXCEPT latissimus dorsi

2- Supraspinatus and infraspinatus fibers run toward the humerus.

3- The muscle which comes from the behind and attach to the bone do lateral rotation.

4- Deltoid control the shoulder, big origin and small insertion, do all movement expect adduction.

5- Deltoid ORIGIN : **lateral 1/3 of clavicle + acromion and spine of scapula.**

Remember: trapezius INSERTION : **lateral 1/3 of clavicle + acromion and spine of scapula.**

6- SUPRASPINATUS & INFRASPINATUS are different in action and origin

7- TERES MINOR, TERES MAJOR origin is the lateral border of scapula but the minor is above the major.

Remember: insertion of the Levator scapulae, Rhomboid minor & major is medial border of scapula.

8- TERES MAJOR insert in medial lip of bicipital groove and have the same action of latissimus dorsi.

Remember: in bicipital groove in the floor latissimus dorsi, lateral lip pectoralis major and TERES MAJOR in the medial lip.

9- Two muscles supply by axillary nerve: DELTOID, TERES MINOR.

10- Two muscles supply by suprascapular nerve: SUPRASPINATUS, INFRASPINATUS.

11- Two muscles supply by lower subscapular nerve: TERES MAJOR and subscapularis.

12- 3 muscles attached to greater tuberosity of humerus: SUPRASPINATUS, INFRASPINATUS, and TERES MINOR.

13-The type of shoulder joint is synovial (ball & socket).

14-The shape of the bones in shoulder joint do not help in the stability.

15-The shoulder joint is covered by weak capsule; ligaments are few, not strong and not very supported to the joint.

16-The shoulder joint is very mobile and not stable >>> easy to get dislocation.

17- Rotator cuff: 4 muscles cover the shoulder joint (anterior, posterior and superior).

Help in stabilizing of the shoulder joint.

18-There are many important muscles (rotator muscles) helping in the shoulder joint stability, they make expanded sheet around the joint before they reach their insertions.

19-The cuff is deficient inferiorly >>> the common place to get dislocation.

20-Rotator cuff damage due to trauma or disease.

21-Supraspinatus tendon is the most common site to get rotator cuff injury.

22-Patient with rotator injury will present with: pain, shoulder instability and the mobility will be affected.

23-Supraspinatus is the most affected because abduction is mainly done by it.

23- Bursa: bag contains fluids, like synovial membrane. Synovial membrane inside the joint but bursa outside the joint (between the joint and muscle).

24- Bursa reduce friction.

25- Subacromial bursa get injury more than the other bursa.

Movement of shoulder

Movement	Muscles
Flexion	Anterior fibers of deltoid Pectoralis major Coracobrachialis Short head of biceps brachii
Extension	Posterior fibers of deltoid Latissimus dorsi Teres major
Abduction	From 0° - 15°: Supraspinatus (over 30° it will not work) From 15° - 90°: Middle fibers of deltoid
Adduction	Pectoralis major Latissimus dorsi Teres major
Medial rotation	Pectoralis major Latissimus dorsi Teres major Anterior fibers of deltoid Subscapularis
Lateral rotation	Posterior fibers of deltoid Infraspinatus Teres minor

Review:

1- What is the origin of DELTOID?

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

2- What are the actions of deltoid?

1. Anterior fibers: flexion & medial rotation of humerus (arm, shoulder joint)
2. Middle fibers: abduction of humerus from 15° - 90°.
3. Posterior fibers: extension & lateral rotation of humerus.

3- What is the Insertion and Nerve supply of SUPRASPINATUS & INFRASPINATUS?

Greater tuberosity of humerus, suprascapular nerve .

4- What is the origin of SUPRASPINATUS & INFRASPINATUS?

1. Supraspinatus: supraspinous fossa.
2. Infraspinatus: infraspinous fossa.

5- What is the origin of SUPRASPINATUS & INFRASPINATUS?

1. Supraspinatus: supraspinous fossa.
2. Infraspinatus: infraspinous fossa.

6- What is the action of SUPRASPINATUS & INFRASPINATUS?

1. Supraspinatus: abduction of humerus from 0° - 15°.
2. Infraspinatus: lateral rotation of humerus.

7- What is the Nerve supply in origin of TERES MINOR?

Axillary nerve, lateral border of scapula.

8- What is the insertion and action of TERES MAJOR?

Bicipital groove of humerus - extension, adduction & medial rotation of humerus

9- What is the origin and insertion of SUBSCAPULARIS?

Origin: subscapular fossa.

Insertion: lesser tuberosity of humerus.

10- What is the type of the shoulder joint?

Synovial (ball&socket).

11- What is the articular surface of shoulder joint?

1. Head of humerus.
2. Glenoid cavity of scapula.

12- Is the shoulder joint stable? Why?

Not stable, because:

1. Head of humerus is 3 times larger than glenoid cavity.
2. Capsule is redundant.
3. Few ligamentous supports: glenoid labrum, coracohumeral.
4. Wide range of movement.
5. **THE Main support:** muscles around the joint (ROTATOR CUFF)

13- What are the muscles of rotator cuff?

Supraspinatus, infraspinatus, teres minor & subscapularis (SITS).

14- What are the symptoms of rotator injury?

Pain, shoulder instability, and limited range of motion.

15- What are the bursas that present around the shoulder joint?

1. Subscapularis bursa: between subscapularis tendon & capsule.
2. Infrapinatus bursa: between infrapinatus tendon & capsule.
3. Subacromial bursa: between deltoid, supraspinatus and capsule.

16- What are relations of shoulder joint?

- ANTERIOR: subscapularis.
- POSTERIOR: infrapinatus, teres minor.
- SUPERIOR: supraspinatus.
- INFERIOR: axillary nerve.

17- What are the muscles inserted in bicipital groove THAT FORMS ADDUCTION?

1. Pectoralis major.
2. Latissimus dorsi.
3. Teres major.

18- What is the easiest place to get dislocation? Why?

Inferior, The cuff is deficient.

Quiz:

1- The Nerve supply of deltoid muscle is:

- A. Axillary nerve.
- B. Lower subscapular nerve.
- C. Upper & lower subscapular nerves.
- D. Medial Nerve.

2- Deltoid muscle Inserted in:

- A. Lesser tuberosity of humerus.
- B. Greater tuberosity of ulna.
- C. Bicipital groove of humerus.
- D. Deltoid tuberosity of humerus.

3- What is the action of supraspinatus?

- A. Flexion.
- B. Abduction of humerus from 0° - 15° .
- C. Abduction of ulna from 0° - 15° .
- D. Abduction of humerus from 20° - 90° .

4- What is the action of Infraspinatus?

- A. Lateral rotation of humerus.
- B. Medial rotation of humerus.
- C. Flexion.
- D. Extension & lateral rotation of humerus.

5- What is the Nerve supply and insertion of SUPRASPINATUS & INFRASPINATUS?

- A. Lesser tuberosity of humerus, suprascapular nerve.
- B. Greater tuberosity of humerus, scapular nerve.
- C. Greater tuberosity of humerus, suprascapular nerve.
- D. Greater tuberosity of humerus, axillary nerve.

6- What is the action and insertion of TERES MINOR?

- A. Lateral rotation of humerus, greater tuberosity of humerus.
- B. Medial rotation of humerus, greater tuberosity of humerus.
- C. Lateral rotation of humerus, lesser tuberosity of humerus.
- D. Extension, adduction.

7- What is the origin and nerve supply of TERES MAJOR?

- A. Lateral border of scapula, lower subscapular nerve.
- B. Axillary nerve.
- C. Upper & lower subscapular nerves.
- D. Medial border of scapula, lower subscapular nerve.

8- What is the nerve supply for SUBSCAPULARIS?

- A. Medial nerve.
- B. Axillary nerve.
- C. Upper & lower subscapular nerves.
- D. Upper subscapular nerves.

9- What is the action of SUBSCAPULARIS?

- A. Medial rotation of humerus.
- B. Lateral rotation of humerus.
- C. Adduction & medial rotation of humerus.
- D. Abduction & medial rotation of humerus.

10- The type of shoulder joint is:

- A. Hinge.
- B. Pivot.
- C. Saddle.
- D. Ball & socket.

11- Which of the following is not from rotator cuff?

- A. Supraspinatus.
- B. Latissimus dorsi.
- C. Infraspinatus.
- D. Subscapularis.

12- The common site to get dislocation for shoulder joint is:

- A. Anterior.
- B. Posterior.
- C. Inferior.
- D. Superior.

13- The main support of shoulder joint depends on:

- A. Rotator cuff.
- B. The shape of joint.
- C. Ligament.
- D. MOVEMENT

14- The common site to get injury in rotator cuff is:

- A. Supraspinatus tendon.
- B. Infraspinatus tendon.
- C. Teres minor tendon.
- D. Subscapularis tendon.

15- The site of Infraspinatus bursa is:

- A. Between subscapularis tendon & capsule.
- B. Between infraspinatus tendon & capsule.
- C. Inside the joint.
- D. Between deltoid, supraspinatus and capsule.

16- The relation between subscapularis and shoulder joint is:

- A. Subscapularis is anterior of shoulder joint.
- B. Subscapularis is posterior of shoulder joint.
- C. Shoulder joint is anterior of subscapularis.
- D. Shoulder joint is inferior of subscapularis.

17- **Downward dislocation of shoulder joint may cause injury to:**

- A. Ulnar nerve.
- B. Radial nerve.
- C. Medial nerve.
- D. Axillary nerve.

18- Deltoid do all movement except:

- A. Flexion.
- B. Adduction.
- C. Abduction.
- D. Rotation.

N.Q	Answer
1	A
2	D
3	B
4	A
5	C
6	A
7	A
8	C
9	A
10	D
11	B
12	C
13	A
14	A
15	B
16	A
17	D
18	B

GOOD LUCK ;)