## THE SHOULDER REGION

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## **OBJECTIVE**

# ✓ Shoulder Muscles✓ Rotator Cuff

- ✓ Anatomical Spaces of the Shoulder Region
- $\checkmark$  Arterial Anastomosis around the scapular

Joint & scapular anastomosis

Divided into:

- Extrinsic Muscles (5 M)
  1. Superficial Extrinsic Muscles (2 M)
  2. Deep Extrinsic Muscles (3 M)
- Intrinsic Muscles (6 M)

#### **1. Superficial Extrinsic muscles:**

#### Trapezius and Latissimus Dorsi Muscles.



#### 2. Deep Extrinsic Muscles:

Levator scapulae, Rhomboideus Major and Minor Muscles.



#### **3. Intrinsic Muscles:**

Deltoid, Supraspinatus, Infraspinatus, Teres Major and Minor, and Subscapularis Muscles.



## **Trapezius Muscle**

It's somewhat triangular in shape.

*Origin:* from external occipital protuberance, ligamentum nuchae, spines of 7 cervical vertebrae, spines of all thoracic vertibrae and the supraspinous ligaments.

*Insertion:* upper fibers into lateral third of clavicle; middle and lower fibers into acromion and spine of scapula.



### **Trapezius Muscle**

# **Nerve supply:** Spinal part of accessory nerve (XI cranial nerve).

![](_page_7_Picture_2.jpeg)

#### **Function:**

Elevate the scapula (shrugging up), scapular adduction (pull scapulae medially to each other), and scapular depression (pull the scapula downward).

### Latissimus Dorsi Muscle

*Origin:* fromIliac crest, lumbar fascia, spines of lower six thoracic vertebrae, lower three or four ribs, and inferior angle of scapula.

*Insertion*: Floor of bicipital groove of humerus.

*Nerve supply:* Thoracodorsal nerve.

*Function:* Extends, adducts, and medially rotates the arm.

![](_page_8_Picture_5.jpeg)

#### **Levator Scapulae Muscle**

*Origin:* from Transverse processes of 1st four cervical vertebrae.

*Insertion:* into the medial border of scapula.

*Nerve supply:* dorsal scapular nerve.

*Function:* Raises medial border of scapula.

![](_page_9_Picture_5.jpeg)

## **Rhomboid Major Muscle**

It's flat muscle.

**Origin:** From spinous processes of  $2^{nd}$  to 5th thoracic vertebrae.

*Insertion:* To the medial border of scapula.

*Nerve supply:* Dorsal scapular nerve.

*Function:* Raises medial border of scapula upward and medially.

![](_page_10_Picture_6.jpeg)

#### **Rhomboid Minor Muscle**

It's flat muscle lies deep to the trapezius muscle.

*Origin:* from spine of the 7<sup>th</sup> cervical

& 1<sup>st</sup> thoracic vertebra.

*Insertion:* into medial border of scapula.

Nerve supply: dorsal scapular nerve.

*Function:* raises medial border of scapula upward and medially.

![](_page_11_Picture_7.jpeg)

#### **Deltoid (Deltoideus) muscle**

It's a large, thick, triangular muscle, which covers the shoulder joint in front, behind and laterally.

*Origin:* from the lateral third of clavicle, acromion and spine of scapula.

*Insertion:* deltoid tuberosity on the middle of lateral surface of shaft of humerus.

![](_page_12_Picture_4.jpeg)

#### **Deltoid (Deltoideus) muscle**

Nerve supply: axillary nerve.

#### **Function:**

Lateral fibers: abducts arm. Anterior fibers: flex & medially rotate arm.

Posterior fibers: extend & laterally rotate arm.

![](_page_13_Figure_5.jpeg)

## **Supraspinatus Muscle**

It's occupies the whole of the supraspinous fossa of the scapula. *Origin:* from the supraspinous fossa.

*Insertion:* into the greater tuberosity of humerus and capsule of the shoulder joint.

**Nerve supply: s**uprascapular nerve.

**Function:** Abduction of arm (initiation) & joint stabilization.

![](_page_14_Picture_5.jpeg)

### **Infraspinatus Muscle**

It's a thick triangular muscle, occupies most of the infraspinous fossa of scapula.

Origin: From the infraspinous fossa.

*Insertion:* Greater tuberosity of humerus and the capsule of the shoulder joint.

Nerve supply: Suprascapular nerve.

*Function:* laterally rotates arm & stabilizes shoulder joint.

![](_page_15_Picture_6.jpeg)

#### **Teres Minor Muscle**

It's a narrow, elongated muscle.

*Origin:* upper two thirds of lateral border of scapula.

*Insertion:* on greater tuberosity of humerus and capsule of the shoulder joint.

Nerve supply: Axillary nerve.

*Function:* Laterally rotates arm and stabilizes shoulder joint.

![](_page_16_Picture_6.jpeg)

### **Teres Major Muscle**

It's a thick flattened muscle.

*Origin:* From lower third of lateral border of scapula.

*Insertion:* Into medial lip of bicipital groove of humerus.

*Nerve supply:* Lower subscapular nerve.

*Function:* Medially rotates & adducts arm and stabilizes shoulder joint.

![](_page_17_Picture_6.jpeg)

## **Subscapularis Muscle**

It's a large triangular muscle which fills the Subscapular fossa of scapula. *Origin:* Subscapular fossa.

*Insertion:* lesser tuberosity of humerus and capsule of the Shoulder joint.

*Nerve supply:* Upper and lower subscapular nerves.

*Function:* Medially rotates and stabilizes shoulder joint.

![](_page_18_Picture_5.jpeg)

## ROTATOR CUFF

The rotator cuff is the name given to the tendons of the subscapularis, supraspinatus, infraspinatus, and teres minor muscles, which are fused to the underlying capsule of the shoulder joint.

![](_page_19_Figure_2.jpeg)

## ROTATOR CUFF

This cuff plays a very important role in stabilizing the shoulder joint.

The tone of these muscles assists in holding the head of the humerus in the glenoid cavity of the scapula during movements at the shoulder joint.

![](_page_20_Figure_3.jpeg)

## ANATOMICAL SPACES OF THE SHOULDER REGION

- Quadrangular Space
- Triangular Space
- Triangular Interval

![](_page_21_Figure_4.jpeg)

## **Quadrangular Space**

#### Borders

- Medial: long head of triceps.
- Lateral: humeral shaft.
- Superior: teres minor.
- Inferior: teres major.

#### Triangular Space with Circumflex Scapular Artery Teres Major Teres Major

#### Contents:

- Axillary nerve

passes through the quadrilateral space on its path to innervate the teres minor and deltoid mucles and provide sensation to the lateral arm.

- Posterior humeral circumflex artery.

#### **Triangular Space**

#### Borders:

- Superior: lower border of teres minor muscle.
- Inferior: teres major muscle.
- Lateral: long head of triceps.

#### Contents:

- Scapular circumflex artery.

![](_page_23_Figure_7.jpeg)

#### **Triangular Interval**

Borders:

- Superior: teres major mucle
- Lateral: lateral head of the triceps or the humerus.
- Medial: long head of the triceps.

Contents:

- Profunda brachii artery.
- Radial nerve.

![](_page_24_Figure_8.jpeg)

#### ARTERIAL ANASTOMOSIS AROUND THE SHOULDER JOINT & SCAPULAR ANASTOMOSIS

The extreme mobility of the shoulder joint may result in kinking of the axillary artery and a temporary occlusion of its lumen. To compensate for this, an important arterial anastomosis exists between the branches of the subclavian artery and the axillary artery, thus ensuring that an adequate blood flow takes place into the upper limb irrespective of the position of the arm.

### ARTERIAL ANASTOMOSIS AROUND THE SCAPULAR JOINT SCAPULAR ANASTOMOSIS

**1- Branches from the Subclavian Arte** 

• Suprascapular Artery: distributed to the supraspinous and infraspinous fossae.

Superficial Cervical Artery: gives off a deep branch that runs down the medial border of the scapula.

![](_page_26_Figure_4.jpeg)

#### ARTERIAL ANASTOMOSIS AROUND THE SHOULDER JOINT & SCAPULAR ANASTOMOSIS

2- Branches from the Axillary Artery:

■ Subscapular artery and its circumfles scapular branch supply the subscapular ( infraspinous fossae, respectively.

Anterior and posterior circumflex humeral artery. Both the circumflex arteries form an anastomosing circle around the surgical neck of the humerus.

![](_page_27_Picture_4.jpeg)

### ARTERIAL ANASTOMOSIS AROUND THE SHOULDER JOINT & SCAPULAR ANASTOMOSIS

![](_page_28_Figure_1.jpeg)

![](_page_29_Picture_0.jpeg)