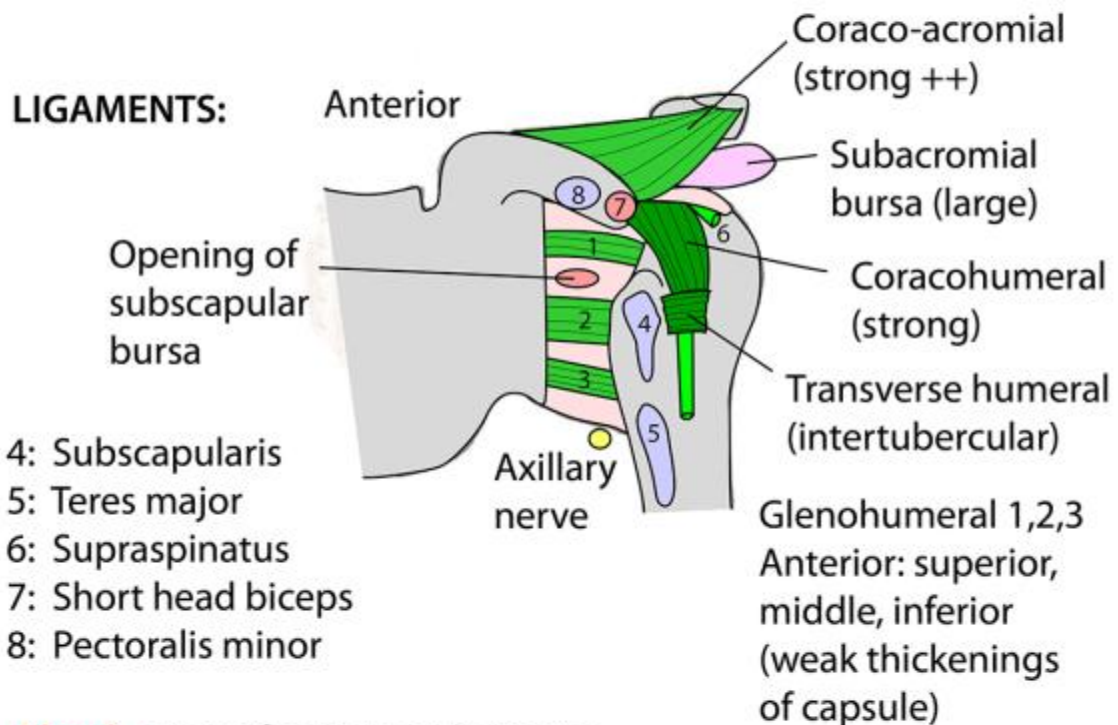


## SHOULDER JOINT (GLENOHUMERAL)

- Shallow glenoid fossa - deepened by glenoid labrum
- Synovial, Ball and socket
- Humeral head is 1/3 hemisphere
- Capsule: Strong & taut superiorly (anti-sag), inferiorly lax and inserted lower to allow wide abduction, flexion and extension
- Synovium: Envelops biceps tendon, communicates with bursae anteriorly and posteriorly



**Blood:** circumflex humeral arteries

**Nerves:** Subscapular, suprascapular, axillary (Hilton's law)

**Bursae:** Subscapular, subacromial, infraspinatus, supraspinatus

**Stability:** Bones (poor), Capsule (relatively poor), Muscles +++  
ligaments +++

**Support:** Rotator cuff (subscapularis, supraspinatus, infraspinatus, teres minor), long head biceps, triceps in abduction, muscles from chest to arm

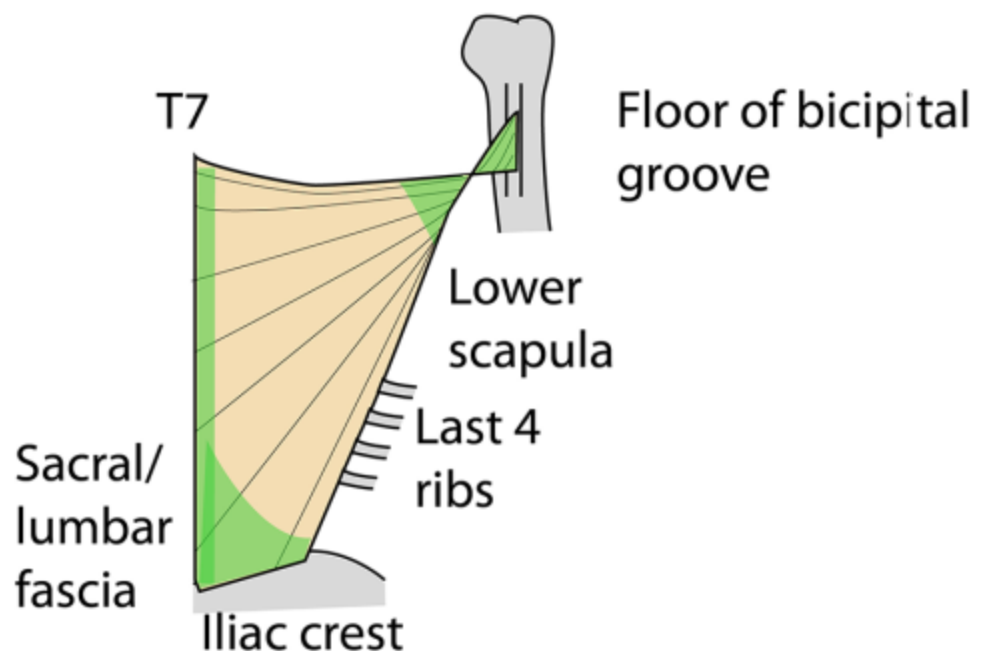
# LATISSIMUS DORSI

Origin: Spines & supraspinous ligament T7 down to sacrum, lumbar fascia, posterior third of iliac crest, last 4 ribs & inferior angle of scapula

Insertion: Flat tendon into floor of bicipital groove

Action: Adducts, extends & medially rotates shoulder. Aids both inspiration & expiration

Nerve supply: Thoracodorsal nerve from posterior cord

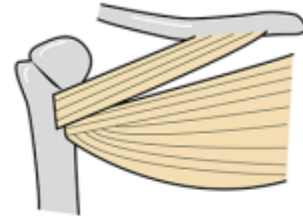


# PECTORALIS MAJOR

## Clavicular head

**Origin:** Medial half of clavicle

**Insertion:** Anterior lamina (of trilaminar insertion) & lateral lip of bicipital groove, deep fascia, anterior lip of deltoid tuberosity



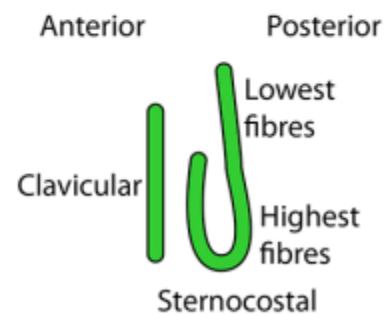
## Sternocostal head

**Origin:** Anterior & lateral manubrium, body of sternum, aponeurosis of external oblique, upper 7 costal cartilages (not always 1st or 7th)

**Insertion:** Manubrial fibres to intermediate lamina. Sternocostal fibres to posterior lamina with highest fibres into capsule of shoulder

**Action:** Flexion, adduction, internal rotation

**Nerve supply:** lateral & medial pectoral nerves



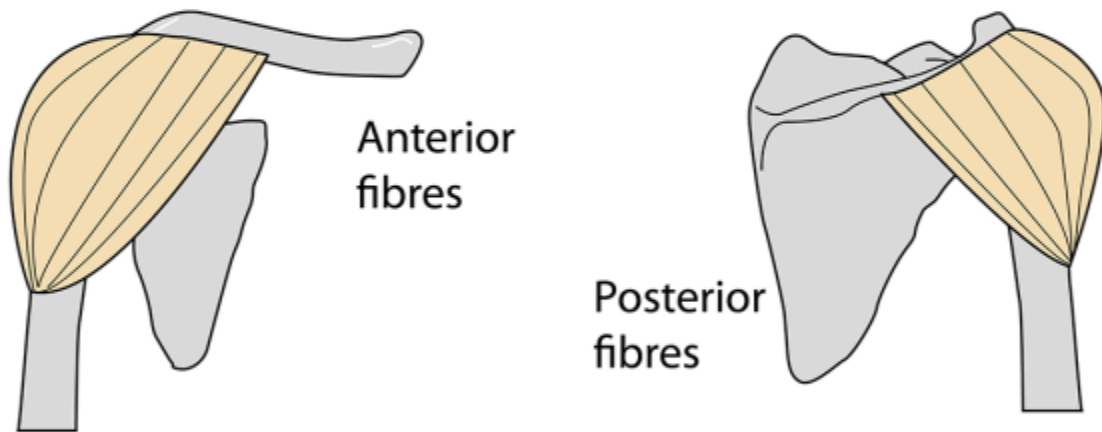
## DELTOID

**Origin:** Lateral third clavicle, acromion, spine of scapula as far as deltoid tubercle of scapula

**Insertion:** Deltoid tubercle of humerus

**Action :** Abducts arm. Anterior fibres flex & medially rotate. Posterior fibres extend & laterally rotate

**Nerve supply:** Axillary (C5,6 posterior cord)



Special note: There is little doubt that the lateral fibres of deltoid helps supraspinatus to initiate abduction of the shoulder but from the images above it is obvious that the anterior and posterior fibres cross the joint more effectively as soon as abduction begins and thus give more power to abduction

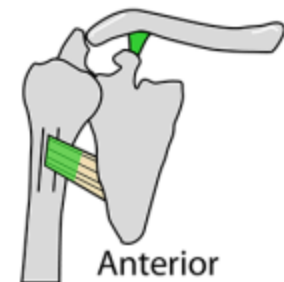
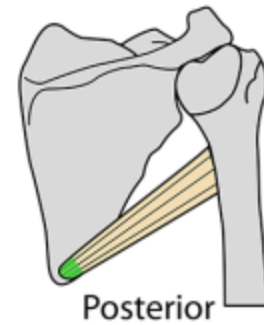
## TERES MAJOR

**Origin:** Oval area on lower third lateral side of inferior angle of scapula

**Insertion:** Medial lip of bicipital groove

**Action :** Medial rotation, adduction, stabilisation of shoulder

**Nerve supply:** Lower subscapular (posterior cord C5,6)



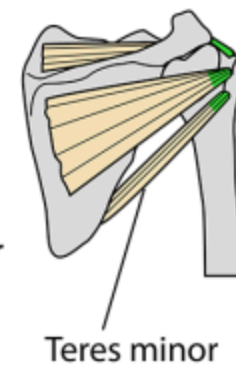
## TERES MINOR

**Origin:** Middle third lateral border of scapula

**Insertion:** Inferior facet of greater tuberosity & joint capsule

**Action :** Lateral rotation & stabilisation of shoulder

**Nerve supply:** Axillary nerve (C5,6 (posterior cord))



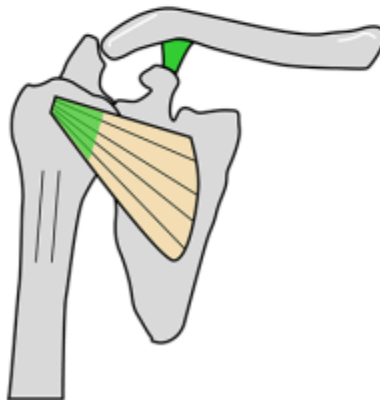
# SUBSCAPULARIS

**Origin:** Medial 2/3 subscapular fossa

**Insertion:** Lesser tuberosity of humerus, half medial lip of bicipital groove & joint capsule

**Action :** Medial rotation stabilisation of shoulder

**Nerve supply:** Upper & lower subscapular (posterior cord C6,7)



## SUPRASPINATUS

**Origin:** 3/4 supraspinous fossa & upper spine of scapula

**Insertion:** Superior facet of greater tuberosity of humerus & joint capsule

**Action :** Abducts & stabilises shoulder

**Nerve supply:** Suprascapular (C5,6 upper trunk)

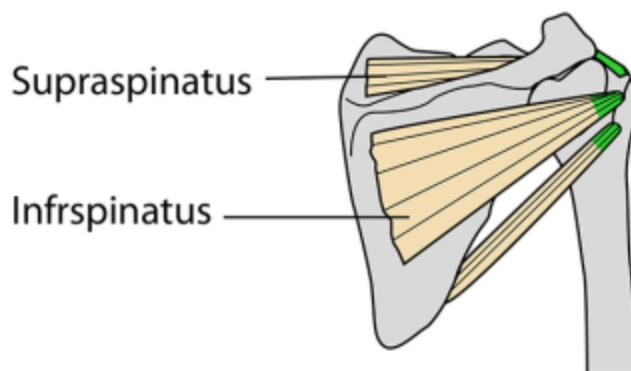
## INFRASPINATUS

**Origin:** Medial 3/4 infraspinous fossa & intermuscular septum

**Insertion:** Medial facet of greater tuberosity of humerus & joint capsule

**Action :** Lateral roatation & stabilisation of shoulder

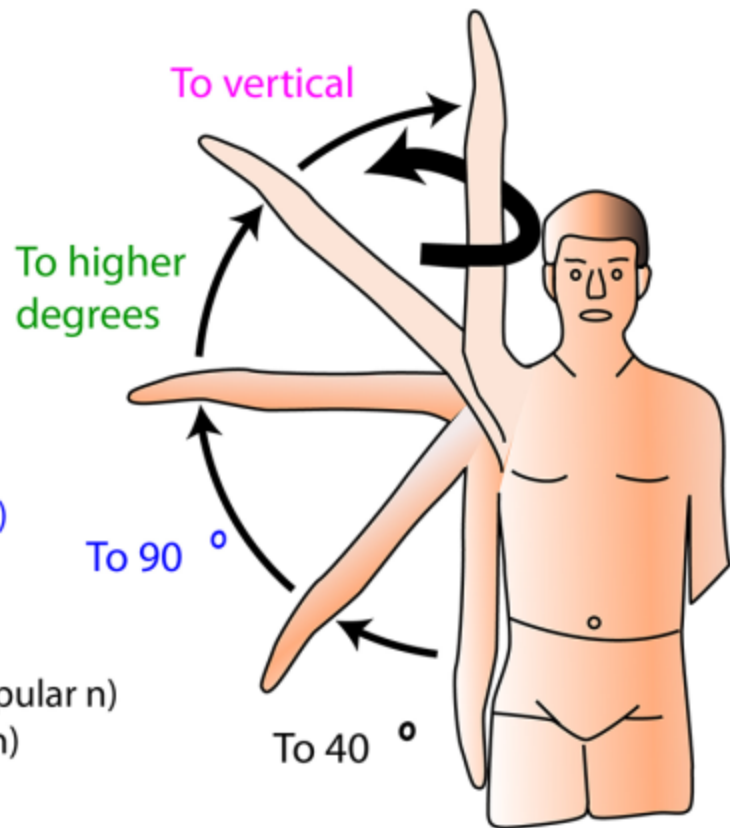
**Nerve supply:** Suprascapular (C5,6 upper trunk)





## ABDUCTION AT SHOULDER

- External rotation:  
infraspinatus  
(suprascapular n)
- Rotation of scapula:  
Trapezius (spinal XI)  
Serratus anterior -  
lower fibres  
(long thoracic n)
- Mostly deltoid (axillary n)  
Supraspinatus  
(suprascapular n)
- Supraspinatus (suprascapular n)  
& some deltoid (axillary n)





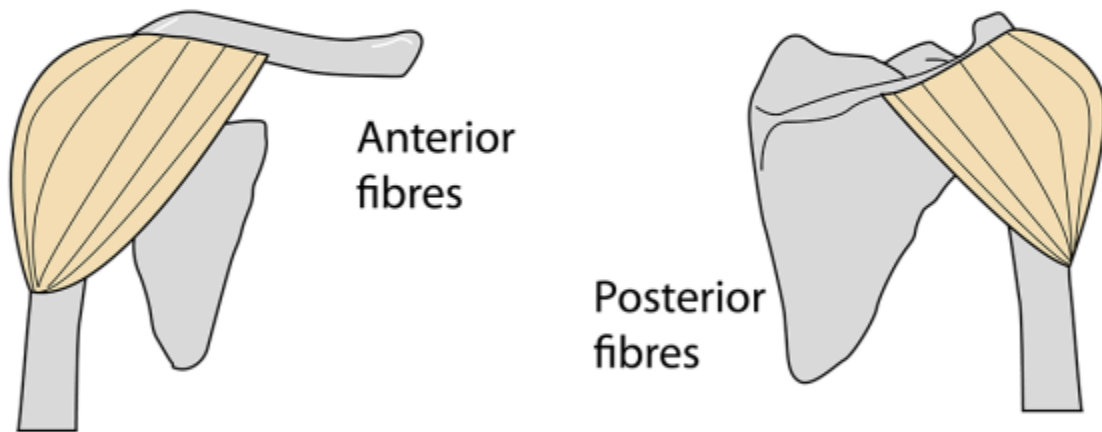
## DELTOID

**Origin:** Lateral third clavicle, acromion, spine of scapula as far as deltoid tubercle of scapula

**Insertion:** Deltoid tubercle of humerus

**Action :** Abducts arm. Anterior fibres flex & medially rotate. Posterior fibres extend & laterally rotate

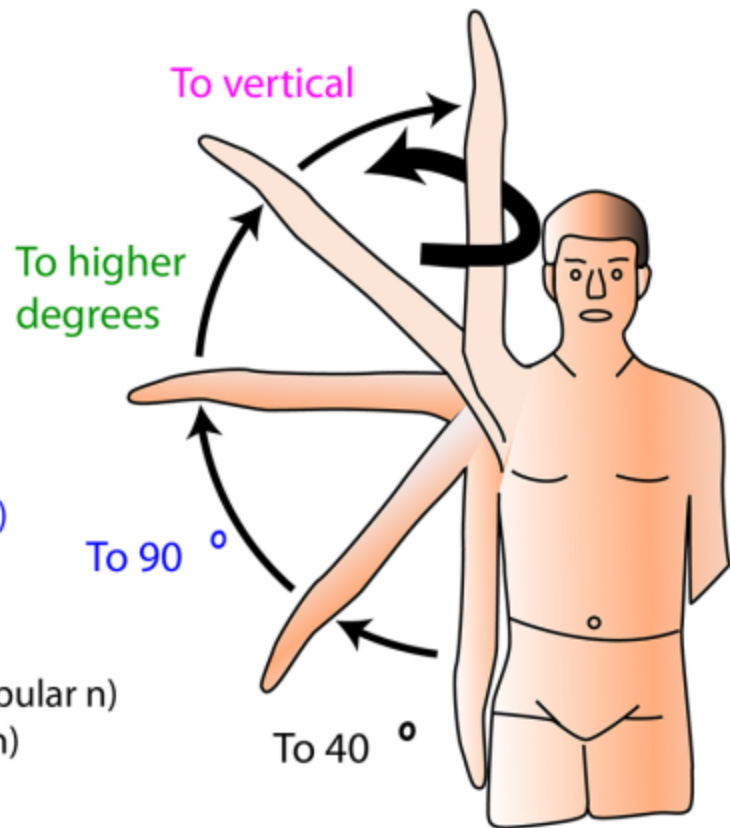
**Nerve supply:** Axillary (C5,6 posterior cord)



Special note: There is little doubt that the lateral fibres of deltoid helps supraspinatus to initiate abduction of the shoulder but from the images above it is obvious that the anterior and posterior fibres cross the joint more effectively as soon as abduction begins and thus give more power to abduction

## ABDUCTION AT SHOULDER

- External rotation:  
infraspinatus  
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Serratus anterior -  
lower fibres  
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- Mostly deltoid (axillary n)  
Supraspinatus  
(suprascapular n)
- Supraspinatus (suprascapular n)  
& some deltoid (axillary n)



# SERRATUS ANTERIOR

**Origin:** Upper 8 ribs & intercostal membranes

**Insertion:** Inner, medial border of scapula

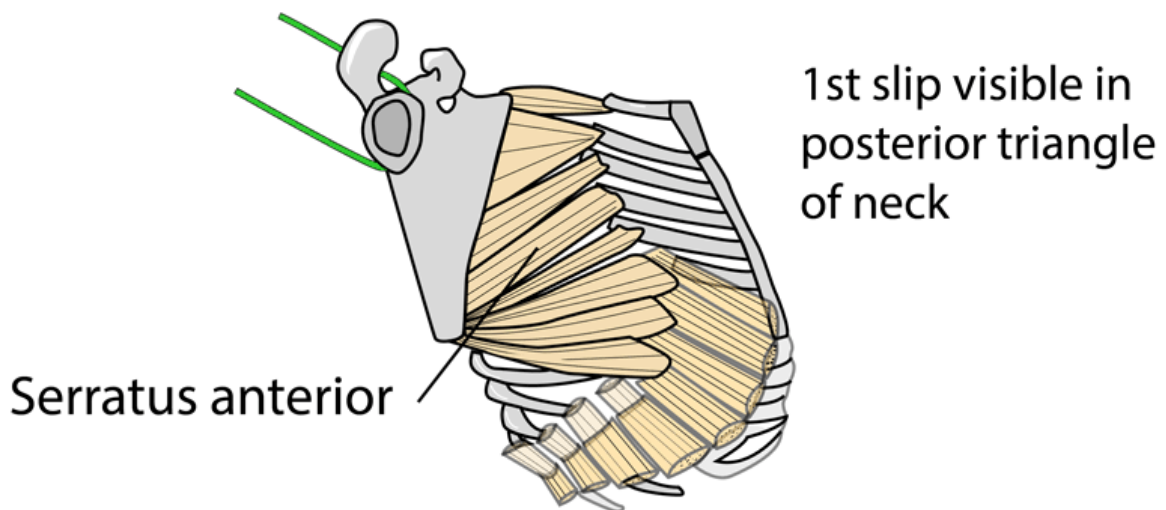
**Action :** Protracts & laterally rotates scapula

**Nerve supply:** Long thoracic nerve of Bell

C5 to slips 1 & 2

C6 to slips 3 & 4

C7 to slips 5-8



## TRAPEZIUS

**Origin:** Superior nuchal line & crest, occiput, nuchal ligament, spines & supraspinous ligaments T1-12

**Insertion:** Lateral 1/3 clavicle, medial acromion, spine of scapula around to deltoid tubercle

**Action:** Lateral rotation, elevation, depression & retraction of scapula (lowest fibres elevate body when arm is fixed. Upper fibres extend & laterally flex head & neck. Rotation is aided by serratus anterior)

**Nerve supply:** Spinal root of accessory n (XI)

Superior nuchal line

