JOINTS OF SHOULDER GIRDLE

Shoulder girdle joints mainly include:

- Sternoclavicular joint (SC joint)
- Acromioclavicular joint (AC joint)

These allow movement of the upper limb by transmitting forces between the axial skeleton and scapula.

STERNOCLAVICULAR JOINT (SC JOINT)

- Articulation

Between:

Medial end of clavicle
→ Clavicular notch of manubrium sterni
→ Upper surface of 1st costal cartilage

It is the only true bony articulation between upper limb and axial skeleton.

- Type of Joint

Synovial saddle type

(Functionally behaves like ball-and-socket)

- Articular Surfaces

Clavicular Surface

→ Covered by fibrocartilage

→ Convex

Manubrial Surface

→ Concavoconvex

→ Smaller than clavicular surface

- Articular Disc (Very Important)

SC joint

→ Contains fibrocartilaginous articular disc

→ Divides joint into two compartments

Disc attachments:

Articular disc

→ Superiorly → Medial end of clavicle

→ Inferiorly → Junction of manubrium & 1st costal cartilage

→ Fused with capsule anteriorly & posteriorly

Functions:

→ Shock absorber

→ Increases joint stability

→ Prevents medial displacement of clavicle

- Capsule

Capsule

→ Attached laterally to margins of clavicular articular

surface

→ Attached medially to margins of sternum & 1st costal cartilage

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- Ligaments

SC Joint Stability depends mainly on ligaments.

Sternoclavicular joint

→ Interclavicular ligament

→ Anterior sternoclavicular ligament

→ Posterior sternoclavicular ligament

→ Costoclavicular ligament (strongest stabilizer)

Costoclavicular Ligament

→ Between inferior clavicle & 1st rib

→ Limits elevation

- Blood Supply

→ Internal thoracic artery

→ Suprascapular artery

- Nerve Supply

→ Medial supraclavicular nerve

- Movements of SC Joint

SC joint allows clavicle movements in 3 planes:

Clavicle

→ Elevation & Depression

→ Protraction (Forward) & Retraction (Backward)

→ Axial rotation

- Protraction (Forward Movement)

Clavicle moves anteriorly

Muscles:

→ Serratus anterior

→ Pectoralis minor

- Retraction (Backward Movement)

Muscles:

→ Trapezius

→ Rhomboids

- Elevation

Muscles:

→ Sternocleidomastoid

→ Upper trapezius

→ Rhomboids

→ Levator scapulae

- Depression

Muscles:

→ Pectoralis minor

→ Subclavius

ACROMIOCLAVICULAR JOINT (AC JOINT)

- Articulation

Between:

Lateral end of clavicle and medial margin of acromion process of scapula

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- Type

Synovial plane (gliding) joint

Articular surfaces covered by fibrocartilage.

- Articular Disc

→ May partially or completely divide cavity

→ Often perforated

- Capsule & Ligaments

AC Joint

→ Capsule (weak inferiorly)

→ Acromioclavicular ligament (horizontal stability)

→ Coracoclavicular ligament (main stabilizer)

- Coracoclavicular Ligament

Between coracoid process & clavicle

Coracoid process → Coracoclavicular ligament (two parts)

i) Conoid ligament (posteromedial)

ii) Trapezoid ligament (anterolateral)

Prevents vertical displacement of clavicle.

- Blood Supply

Suprascapular artery

Thoracoacromial artery

- Nerve Supply

Lateral supraclavicular nerve

- Movements

AC joint allows:

Scapula movement

→ Small gliding movements

→ Rotation of scapula during arm elevation

Occurs when:

→ Scapula rotates

→ Clavicle elevates/depresses

ABDUCTION OF SHOULDER (Scapulohumeral Rhythm)

Abduction

First 0–15° → Supraspinatus
15–90° → Deltoid (main)
Beyond 90–180° → Scapular rotation

Nerves involved:

→ Suprascapular nerve
→ Axillary nerve
→ Spinal accessory nerve
→ Long thoracic nerve

🔥 APPLIED ANATOMY

☐ SC Joint Dislocation (Rare)

- Rare due to strong ligaments

- Posterior dislocation dangerous → May compress:
  → Trachea
  → Esophagus
  → Great vessels

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2 AC Joint Dislocation (Common)

AC ligament torn
→ Coracoclavicular ligament torn
→ Clavicle displaced upward
→ "Step deformity"

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3 Injury to Long Thoracic Nerve

Serratus anterior paralysis
→ Winged scapula
→ Inability to abduct above 90°

🔥 VIVA POINTS

- SC joint = only bony connection to axial skeleton
- SC joint has articular disc
- AC joint = plane joint
- Coracoclavicular ligament = main stabilizer of AC joint
- Abduction above 90° requires scapular rotation

Resources:

i) Snell's Clinical Anatomy by Regions (Book by Lawrence E. Wineski)

ii) BD Chaurasia's Human Anatomy: Regional and Applied Dissection and Clinical

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-> The End <-