The AC-joint

Basics and biomechanics

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What is the AC-joint?

Anatomy

Articulation distal end clavicle – acromion
Synovial joint
Fibrocartilaginous tissue
Intra-articular discus

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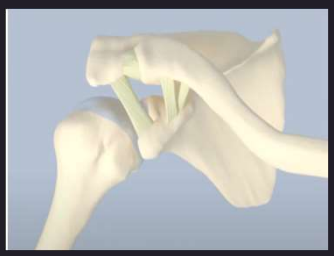
Motion of the AC-joint



Motion

GOAL = let shoulder girdle follow ROM of GH joint

Multiaxial joint
Gliding motion
Clavicle 50° P rotation
ACJ 8° rotation

Scapuloclaviculaire synchronicity = guided by CC suspensatory ligaments

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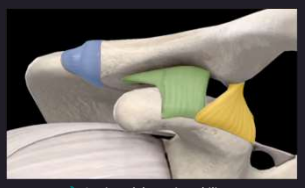
What defines stability?



1. AC ligaments + capsule

4 bands
AP STABILITY : Superior 50% - Posterior 25%
Constraint to posterior displacement

Coracoclavicular ligaments

2. Conoid ligament (CC)

Medial – 4.5 cm from ACJ
VERTICAL STABILITY
Constraint to superior displacement

3. Trapezoid ligament (CC)

Lateral – 3 cm from ACJ
VERTICAL STABILITY (C > T)
Constraint to axial compression

→ Static and dynamic stabilizers

4. Dynamic : D and T fascial attachments

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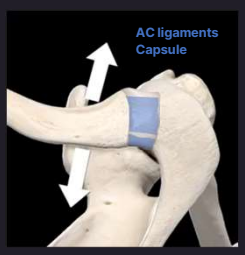
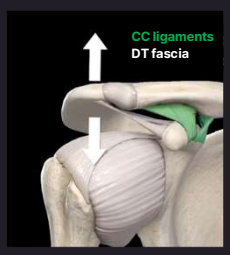
Stability summary





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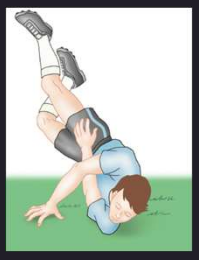
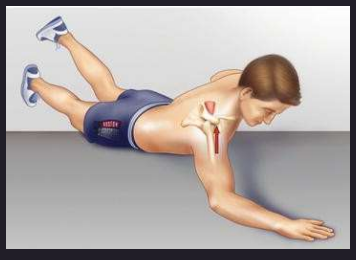
AC-joint injuries





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Anatomical injury classification (Rockwood)



Type 1		Type 2		Type 3	
AC	Sprain	AC	Tear	AC	Tear
CC	Intact	CC	Sprain	CC	Tear
RX	Sprain	RX	CC distance <25%	RX	CC distance >25%

Type 3A – 3B

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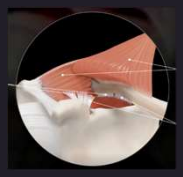
Anatomical injury classification (Rockwood)



Type 4		Type 5		Type 6	
AC	Tear	AC	Tear	AC	Tear
CC	Tear	CC	Tear	CC	Tear
RX	Dislocated in trapezius	RX	CC distance >100%	RX	Dislocated inferiorly

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Changes in biomechanics with AC-joint injury

1. Downward displacement shoulder girdle
2. Altered scapular kinematics : loss of SC synchronicity
3. RW type 3 or > : altered GH kinematics

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