The Shoulder Breakdown

Understand and Apply Scapular Mechanics in Yoga Asana

Keri Bergeron, MSPT, ERYT
Shoulder Joint(s)

- Four joints in one
  - Scapulothoracic: where scapula moves on ribcage
  - Glenohumeral joint: where humerus meets scapula (green here)
  - Acromioclavicular joint: where acromion meets collar bone
  - Sternoclavicular joint: where collar bone meets sternum

- Glenohumeral joint is primary mover
  - Ball and socket joint
  - Primary movements: Flex/Ext, IR/ER, ABD/ADD

- Designed for stability or mobility? Why?
Scapula

Anterior View Left Scapula

Posterior View Right Scapula
Shoulder Motions Defined

• **Flexion**: raise arm forward and up overhead
  • The general rule is that flexion decreases the angle at a joint
  • Bending your elbow is the clearest example

• **Extension**: reach or pull arms back behind the plane of your body
  • The general rule for extension is to increase the angle at a joint
  • Straightening the elbow from a bent position

• **Abduction**: movement away from the midline of the body

• **Adduction**: movement in towards the midline of the body

• **External rotation**: rotation away from the center

• **Internal rotation**: rotation towards the midline

• Keep in mind: there are four joints that are working together to make these motions occur!
Scapular Motions Defined

• **Protraction**: spread shoulder blades away from the spine.
  • Also called abduction

• **Retraction**: draw shoulder blades together towards the spine
  • Also called retraction

• **Lateral rotation**: rotation away from the midline

• **Medial rotation**: rotation towards the midline

• **Elevation**: draw shoulder blades up towards ears

• **Depression**: draw shoulder blades down toward waist

• Keep in mind that these motions most often occur in combination with each other
• The labrum of the shoulder is a flexible cartilage ring that makes the socket, the glenoid, a little deeper and in turn, the shoulder slightly more stable.

• Also the insertion for the long head of the biceps
Function of Rotator Cuff:
- Together they hold humerus in the glenoid and stabilize the humerus in glenoid through all aspects of ROM

Individual function:
- Supraspinatus: initiates shoulder abduction
- Infraspinatus and Teres Minor: external rotation
- Subscapularis: internal rotation
Trapezius

• O: superior nuchal line, ligamentum nuchae, C6-T12 spinous processes

• A: scapular spine (lower and middle fibers), lateral end of clavicle/acromion (upper fibers)

• Action:
  • Upper: elevate, laterally rotate scapula
  • Middle: retraction
  • Lower: depress, assists is lateral rotation with upper fibers
Rhomboids

- Major and Minor
- O: C6-T5 spinous processes
- A: medial border of scapula
- Action: strong retractors, medially rotate scapulae, can elevate as well
Levator Scapulae

- **O:** tranverse processes of C1-C4
- **A:** superior angle of scapula
- **Action:** elevates and assists with medial rotation of scapula
Latissumis Dorsi

- **O:** T6-T12 spinous processes, lumbar fascia, iliac crest
- **A:** intertubercular groove of humerus
- **Action:** strong IR, adduction, and extension
Pectoralis Major

- Origin (O): almost full length of sternum and medial half of clavicle
- Attachment (A): anterior humerus
- Action: strong IR, horizontal adduction, can assist with flexion
Pectoralis Minor

• **O:** ribs 3-5
• **A:** coracoid process of scapula
• **Action:** protraction of scapula, assists with depression, accessory muscle of inspiration
Teres Major

• O: inferior angle of scapula (posterior side)
• A: anterior humerus
• Action: strong IR of shoulder, extension
Deltoid

- **O:**
  - Anterior: lateral end of clavicle (red)
  - Middle: acromion (green)
  - Posterior: spine of scapula (blue)

- **A:** deltoid tuberosity of humerus

- **Action:** passive stabilizer of shoulder joint, shoulder abduction
  - Anterior: flexion, IR, horizontal adduction
  - Middle: abduction
  - Posterior: extend, horizontal abduction, assist with ER
Serratus Anterior

- O: medial border of scapulae on anterior surface
- A: ribs 2-10
- Action: protracts scapula, keeps scapula engaged on back (no winging)
Scapulohumeral Rhythm

• https://youtu.be/rpzBGIOEW4E
• https://youtu.be/3VygGuBObVc
• https://youtu.be/H_8xYrT8YcQ
Let’s talk Asana
Sources

• Books:
  • Atlas of Human Anatomy, Frank Netter
  • The Key Muscles of Yoga, Ray Long
  • The Key Poses of Yoga, Ray Long

• Photos:
  • www.physio-pedia.com
  • www.kenhub.com
  • www.motionplusosteo.com
  • www.Wikipedia.com

• YouTube:
  • Manager3pleta Mps
  • Daily Bandha
  • Muscle and Motion
Contact Information

• Website: www.keribergeron.com
• IG: keribergeron
• FB: Keri Bergeron