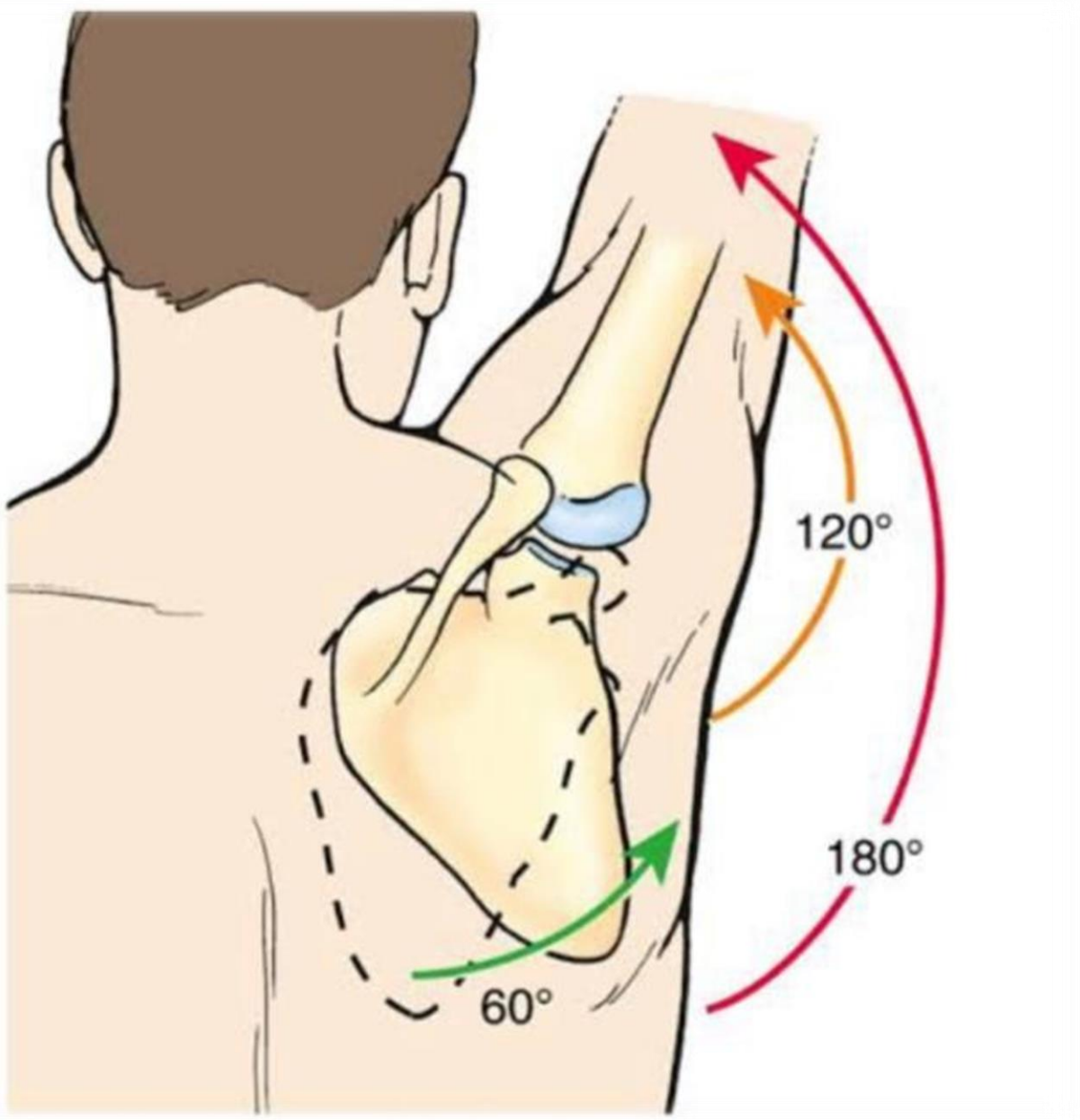
SCAPULOHUMERAL RHYTHM

Presented by: Archana K

Assistant professor

SNS COLLEGE OF PHYSIOTHERAPY



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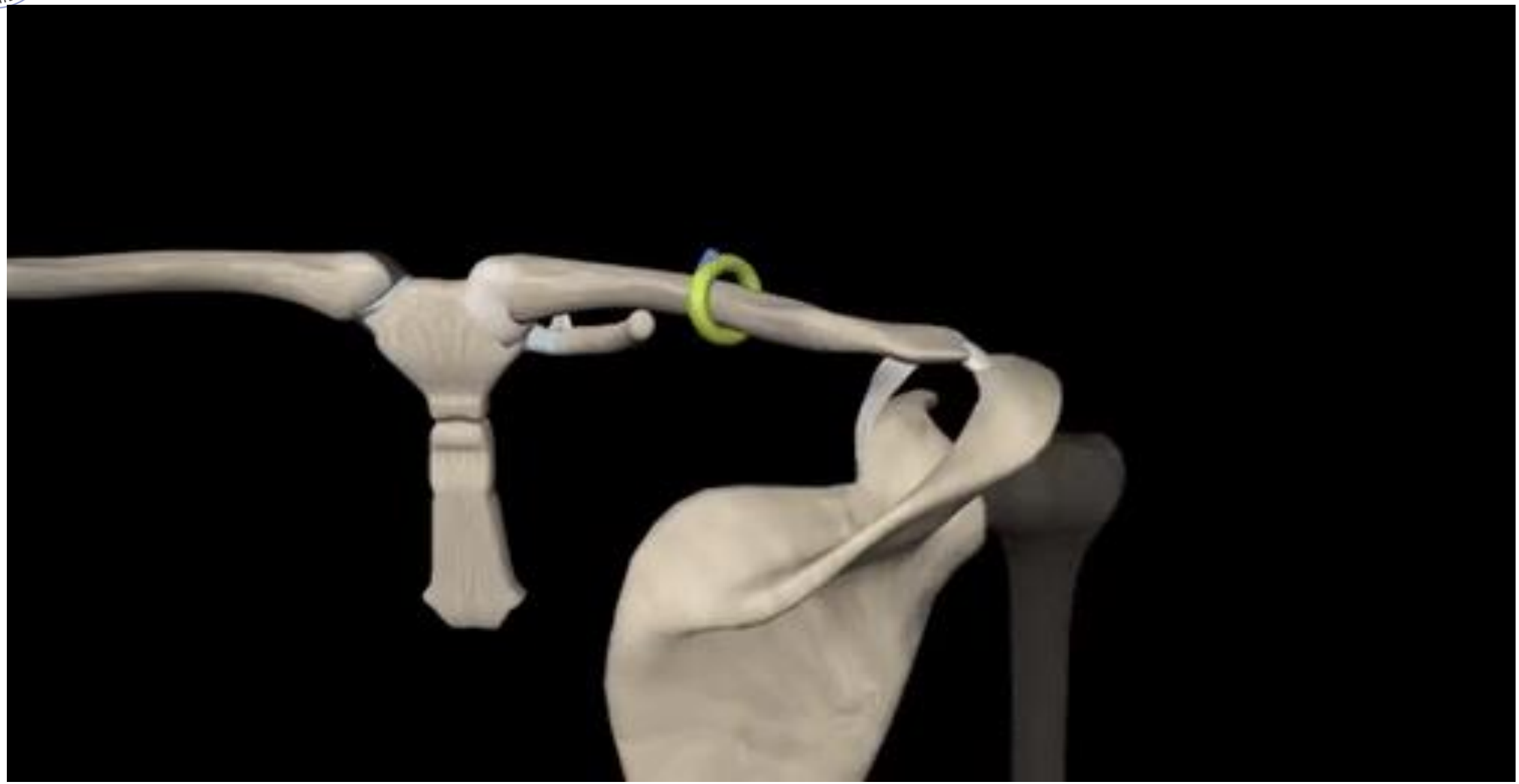
SCAPULOHUMERAL RHYTHM

- Scapulohumeral rhythm is also called as the Glenohumeral rhythm
- It is the coordinated movements of scapula and the humerus increasing the range of motion at the glenohumeral joint

  -Most noticeable during complete flexion and abduction of the shoulder

- It occur at a ratio of 2:1 (2 degrees of humeral flexion/ abduction to 1 degree of scapular upward rotation).

- The overall ratio of **2 of GH (120)** to 1 of **ST (60)** motion during arm elevation is commonly used, and the combination of concomitant GH and ST motion most commonly referred to as **scapulohumeral rhythm**.



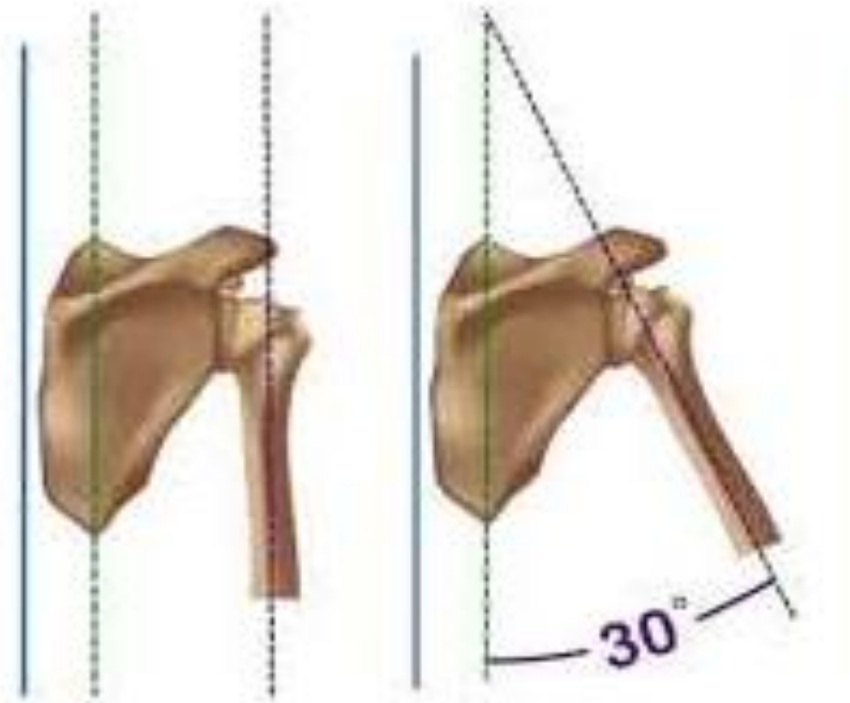
During 180 degree of abduction, there is a 2:1 ratio of movement of humerus to the scapula with 120 degree of movement occuring at the GH joint and 60 degree at the ST joint.

PHASES OF SCAPULOHUMERAL RHYTHM

- The rhythm can be divided into 3 phases:

1) **30° of Humeral Abduction**

- **Humerus- 30 degree abduction**
- **Scapula -shows minimal movement**.
- Clavicle - 0^{o} – 5^{o} elevation at sternoclavicular and acromioclavicular joint.



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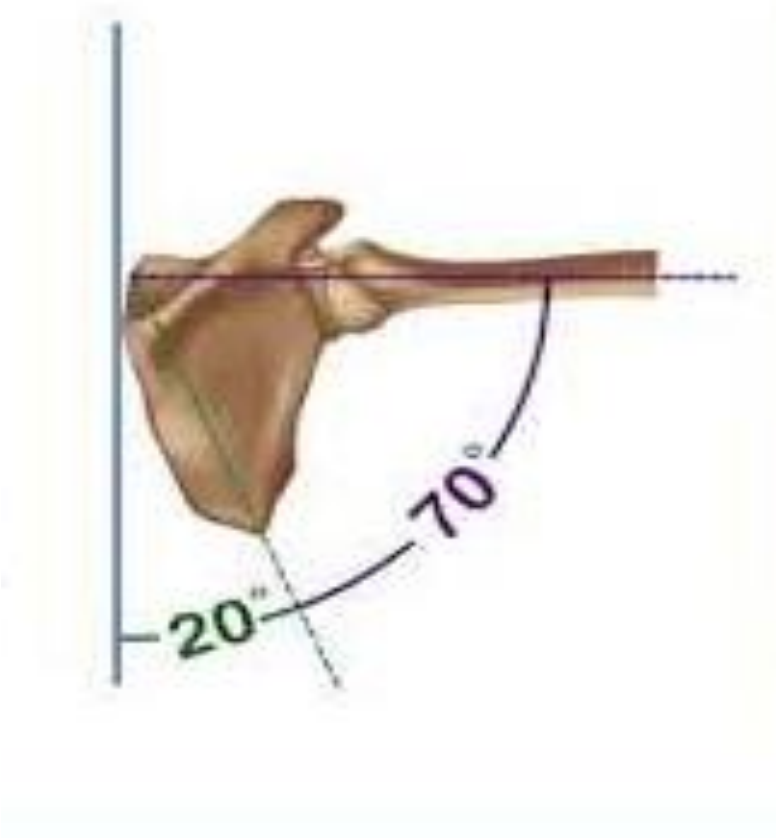
2)After the first 30 ° of Abduction

- The humerus and scapula move in relation to the 2:1 ratio
- **Here the humerus abduct – 40 degree(70 °)**
- **scapula- 20^{o}upward rotation**
- The clavicle -elevates 15 ^{o} because of scapular rotation



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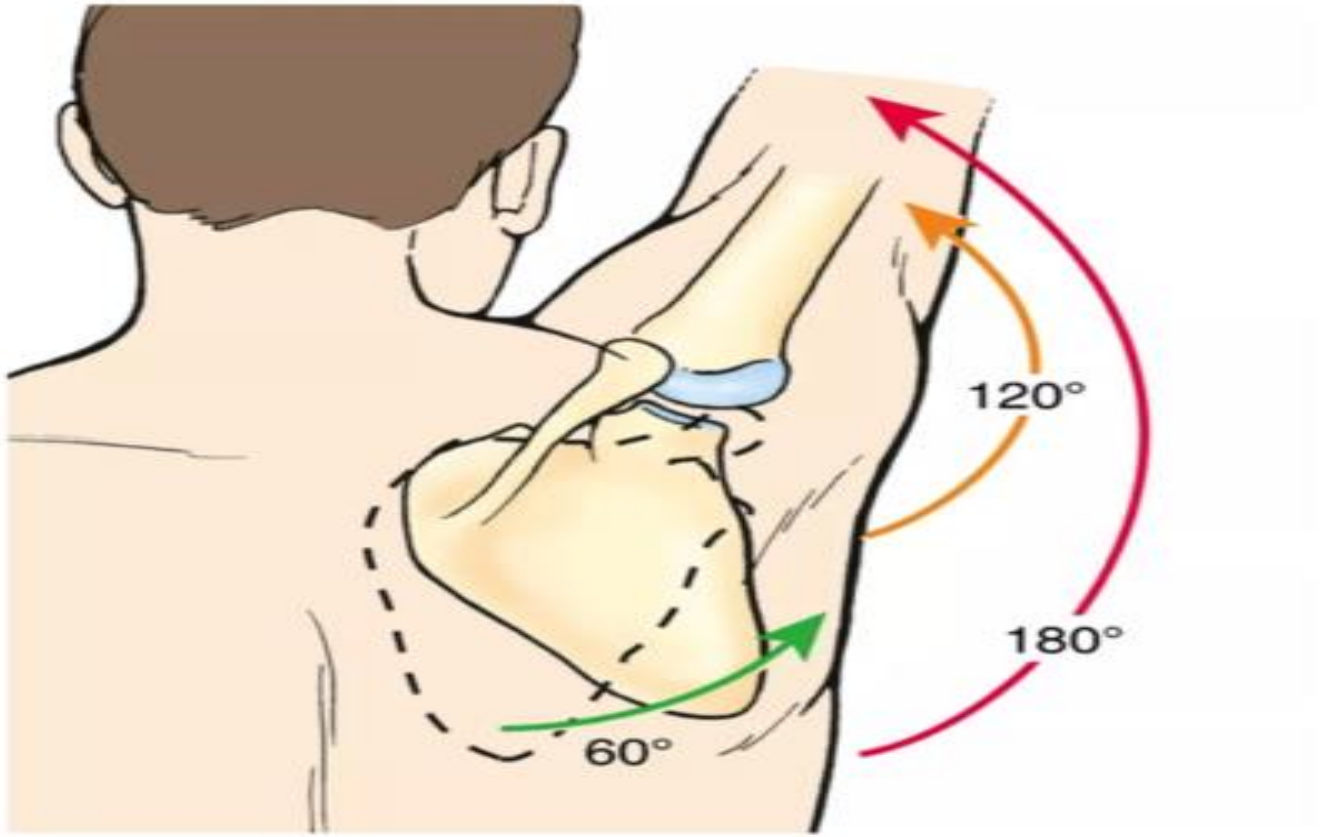
https://images.app.goo.gl/KUnoDQzcq6PqQwid

3) 90° – 180° of Elevation

- **Humerus- 50degree abduction**
- **Scapula -30° -40 ° lateral rotation and begins to elevate**
- Clavicle 30°- 50° of posterior rotation, 15° of elevation



(C) Scapulo-humeral rhythm. The scapula and humerus move in 1:2 ratio. When the arm is abducted 180 degrees, 60 degrees occurs by rotation of the scapula, and 120 degrees by rotation of the humerus at the shoulder joint.

Image taken from : https://images.app.goo.gl/fghyfhDQzcq6PqQwid

Advantages of scapulohumeral rhythm

- Shared load between two joints.
- Increases range of motion.

MUSCLES CONTRIBUTING

- **Deltoid Muscle**

-Largest and most important glenohumeral muscle

-when the humerus is in the plane of scapula, anterior and middle deltoid produce elevation of humerus

-Posterior deltoid serves as a joint compressor

- **Supraspinatus muscle**

-The primary function of this muscle is abduction with secondary motion being external rotation

-Exerts maximum effort at 30 degrees of abduction