



EDUCATA

Your Online Continuing Education Resource

The Shoulder Complex Mechanics, Muscle Function and Exercise

Marilyn M. Pink PT, Ph.D.

Note to Participants: There are interactive pop-up questions throughout this lecture. If you choose to pause the lecture and return at a later time, a natural break time would be after answering the interactive questions. (You are able to pause at any time and the presentation will "remember" where you were. It's just a more natural time to pause after the interactive questions.) For your convenience, this outline reflects where/when within the lecture the interactive questions occur.

This lecture has 100 slides and is 77 minutes in duration.

I. The shoulder story

- A. Axis of rotation
- B. Labrum and humeral head
- C. Glenoid
- D. Capsule and ligaments
- E. Stretching

Interactive Questions – slide 14 @ 12 minutes

II. Dynamic stability: The 4 P's of the scapulohumeral muscles

- A. Glenohumeral PROTECTORS: Rotator cuff
 - 1. Live anatomy
 - 2. Rotator cuff muscles
- B. Arm PLACERS: Deltoids
 - 1. Scaption
 - 2. Performance during sports
 - a. Normal shoulder during freestyle swimming
 - b. Early cocking in baseball pitching
 - 3. The arm in the dependent position
 - 4. Interaction between the placers and protectors
 - 5. Anatomy of/exercises for
 - a. Infraspinatus
 - b. Teres minor
 - c. Subscapularis

Interactive Questions – slide 47 @ 38 minutes

C. Scapular PIVOTERS: Scapular muscles

- 1. Anatomy
 - a. Levator scapulae
 - b. Trapezius
 - c. Serratus anterior
 - i. Scapular winging
 - d. Rhomboids

Notes

-
2. Scapular rotation
 - a. Force couples
 3. What is scapular lag?

Notes

Interactive Questions – slide 62 @ 51 minutes

- D. POWER drivers: Lats and pecs
 1. Anatomy
 - a. Pectoralis major
 - b. Latissimus dorsi
 2. Normal shoulder during freestyle swimming
 3. Directional pull
 4. Axis of rotation in:
 - a. Normal shoulders
 - b. Dysfunctional shoulders

Interactive Questions – slide 73 @ 58 minutes

- III. How these muscles work together
 - A. The myth of muscle balance: measuring physiological cross-sectional area (PCSA)

Interactive Questions – slide 78 @ 61 minutes

- B. What can we do about sloppy shoulders?
- C. Studying the shoulder
 1. Townsend 1991: protectors, placers and power drivers
 - a. Muscle function
 - b. Injury prevention: Exercises
 2. Moseley 1992: scapular muscles
 - a. Muscle function
 - b. Injury prevention: Exercises

Interactive Questions – slide 93 @ 71 minutes

IV. Summary
