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

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
      a. Muscle function
      b. Injury prevention: Exercises

Interactive Questions – slide 93 @ 71 minutes

IV. Summary
Bibliography

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* These articles are available to download from our library page at [www.educata.com/articles.aspx](http://www.educata.com/articles.aspx).

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