








**Best Scapulothoracic Exercises (Based on EMG Studies):**

(Feldman, 2009; Reinold et al., 2009; Reinold et al., 2004)

Muscle	Best Exercises Based on EMG	Exercise Pictures
<p><b>Lower Trapezius</b></p>	<p>1- Prone "Y"                      2- Prone ER at 90° Abd                      3- Prone "T"*</p> <p>*Good Low Trap to Upper Trap ratio of activation</p>	
<p><b>Middle Trapezius</b></p>	<p>1- Prone Row                      2- Prone "T"</p>	
<p><b>Rhomboids &amp; Levator Scapula</b></p>	<p>1- Prone Row                      2- Prone "T"                      3- Prone "I"</p>	
<p><b>Serratus Anterior</b></p>	<p>1- Pushup "Plus"                      2- Dynamic "Hug" (&lt; 90° Abd)                      3- "Punch" at 120° Abd</p>	

**Best Rotator Cuff Exercises (Based on EMG Studies):**

(Feldman, 2009; Reinold et al., 2009; Reinold et al., 2004)

Muscle	Best Exercises Based on EMG	Exercise Pictures
<b>Supraspinatus</b>	1- Scaption 2- Prone "Y"	
<b>Infraspinatus &amp; Teres Minor</b>	1- ER in sidelying 2- Prone ER at 90° Abd	
<b>Subscapularis</b>	1- IR at 0° Abd 2- IR at 90° Abd	

**References:**

- Feldman D. Electromyographic Analysis of the Supraspinatus and Deltoid Muscles During 3 Common Rehabilitation Exercises. *Yearbook of Sports Medicine*. 2009;2009:90-91.
- Reinold MM, Wilk KE, Fleisig GS, et al. Electromyographic Analysis of the Rotator Cuff and Deltoid Musculature During Common Shoulder External Rotation Exercises. *RESEARCH REPORT*. 2004;34(7):10.
- Reinold MM, Escamilla R, Wilk KE. Current Concepts in the Scientific and Clinical Rationale Behind Exercises for Glenohumeral and Scapulothoracic Musculature. *J Orthop Sports Phys Ther*. 2009;39(2):105-117.