Passive & Active assisted ROM¹⁰

Recommended precautions:

FF in scapular plane (wall slides⁸ wand exercises, pulleys)¹¹ ER (gentle beyond 30° to respect subscapularis healing)

FF AROM in supine

Manually resisted scapular side-lying stabilization exercises¹² Initiate PNF patterning supported such as wall slides¹³ Isometrics:

Deltoid in neutral ER (modified neutral) ROM < 30° IR (modified neutral) Aerobic conditioning including UBE⁷

Axioscapular muscle strength grades 4/5 MMT

Optimal scapulohumeral rhythm to 90\$ E/E 2atib 04 Tf1 0 0 1 439.54 473.35

Minimal pain and inflammation with application of the soreness rules 14 for intensity of exercise

Progress ROM as tolerated¹¹ Uniplanar flexibility exercises into extension and internal rotation PNF patterning

Recommended precaution: in supine or supported until week 12¹⁵ Isotonic strengthening:

Emphasis on axioscapular muscles (scapular rows¹⁶)
Continued attention to humeral head control and scapulohumeral rhythm with as load progresses

Optimal

For questions regarding

6 Sano T, Aoki M, Tanaka Y, Izumi T, Fujimiya M, Yamashita T. Glenohumeral joint motion after subscapularis tendon repair: An analysis of cadaver shoulder models. Journal of Orthopedic Surgery and Research. 2014. 9(41)

7 John Hopkins Medicine. Shoulder Replacement Surgery Rehabilitation. file:///U:/SLU%20SSM%20Ortho%20Residency/Scholarly%20Products/Kaar_Guidelines/TSA_revTSA/JHo pkins_TSA.pdf. Accessed June, 2018.

- $u \ddagger U O K - = 8 8 \%$) o the risk of shoulder dislocation after reverse shoulder arthroplasty. JSES. 2017 18, 8920896.

9 Ohio State Sports Medicine. TOTAL SHOULDER ARTHROPLASTY CLINICAL PRACTICE GUIDELINE. <a href="https://wexnermedical.osu.edu/-/media/files/wexnermedical/patient-care/healthcare-services/sports-medicine/education/medical-professionals/shoulder-and-elbow/totalshoulderarthroplasty.pdf?la=en&hash=ED0F2B267F31E3E578CE73247D4BB9215F07FDF8. Accessed June, 2019.

- 10 Bullock G, Garrigues G, Ledbetter L, Kennedy J. A systematic review of proposed rehabilitation guidelines following anatomic and reverse shoulder arthroplasty. JOSPT. 2019 49(5): 337-346.
- 11 McCann PD, Wootten ME, Kadaba MP, Bigliani LU. A kinematic and electromyographic study of shoulder rehabilitation exercises. Clin Orthop 1993;288:179-88.
- 12 Sebelski C, Guanche C. Total Shoulder Arthroplasty In Maxey L, Magnusson J eds. Rehabilitation for the Post surgical Orthopedic Patient. 3rd Ed St. Louis, MO. 2013 p128.
- 13 Wise M, Uhl T, Mattacola C, Nitz A, Kibler B. The effect of limb support on muscle activation during shoulder exercise. JSES 2004; 13:612-620.
- 14 Fees M, Decker T, Snyder-