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**ANATOMIC TOTAL SHOULDER ARTHROPLASTY REHABILITATION GUIDELINES**

PHASE	PRECAUTIONS AND GUIDELINES	GOALS	EXERCISES	CRITERIA TO ADVANCE	EXAMINATION
<p><b>1</b>            (Post-operative day 1 to Post-operative week 6)</p>	<p>Sling 24/7 X 2 weeks (remove for grooming and home exercise program 3-5x/day)</p> <p><b>May</b> remove sling at home after 2 weeks – wear for sleep and in community; <b>may</b> remove abduction pillow</p> <p>Avoid hand behind the back and external rotation at 90 degrees</p> <p>Avoid ER &gt;30 deg with arm at side</p> <p>No shoulder active elevation</p> <p>No submersion in water until after 4 weeks</p> <p>No weight bearing on shoulder</p>	<p>Protect healing subscapularis, joint capsule and biceps tenodesis</p> <p>Prevent infection</p> <p>Promote distal circulation and control swelling</p> <p>Proper sling fit</p> <p>PROM: 130 elevation and 30 ER (unless other specified limit by surgeon)</p> <p>PROM to 140/40 (elevation/ER) after week 4</p>	<p>Pendulum</p> <p>Active elbow, wrist and hand, scapular retraction</p> <p>Passive elevation to 130 deg in scapular plane (eg. Rope and pulley; table slide; supine well-arm assisted)</p> <p>ER to 30 deg in scapular plane with arm at side (eg. Well arm or dowel assisted, or table supported and rotate away – can progress to active as tolerated within 30 degree limit</p> <p>Non-impact aerobic activities: walking; stationary bike when incision is healed</p>	<p>Pain less than 3/10 with PROM</p> <p>Healing incision without signs of infection</p> <p>Clearance by surgeon after radiograph assessment at post-operative visit</p>	<p>Wound assessment</p> <p>Swelling assessment of upper extremity</p> <p>Neurovascular assessment of upper extremity</p> <p>Sling fit and ability to donn/doff properly</p> <p>Patient reported outcome measure</p> <p>Pain level</p> <p>Range of motion for elevation (passive only) and external rotation (passive and active) in range of motion constraints (0-30)</p>

PHASE	PRECAUTIONS AND GUIDELINES	GOALS	EXERCISES	CRITERIA TO ADVANCE	EXAMINATION
<p><b>2</b> (Post-operative week 6 to 12)</p>	<p>Discontinue sling at all times – wean as tolerated</p> <p>Motion recovery without excessive force</p> <p>May begin ER at 90 degrees of abduction in scapular plane to 60 degree limit</p> <p>May begin functional IR with hand behind back <b><u>gently – avoid forceful overpressure</u></b></p> <p>Weight-bearing on the UE for use of assistive device allowed</p> <p>No closed chain exercise</p> <p>Advance arm use in ADLs gradually</p>	<p>Wean from sling at 6 weeks</p> <p>Optimize PROM</p> <p>Develop AROM to equal PROM</p> <p>Establish dynamic stability of shoulder with deltoid, rotator cuff and peri-scapular strengthening through AROM against gravity</p>	<p>Stretching gently beyond Phase 1 precautionary limits for elevation and ER(0) without excessive force</p> <p>Begin ER(90) to 60 degree limit in scapular plane</p> <p>Active forward elevation progression when passive motion restored to expected level: supine, gradual incline to vertical, short to long lever arm (bent to straight elbow)</p> <p>Active ER/IR with arm at side: sitting to side-lying</p> <p>Scapular AROM against gravity (eg prone extension to hip with scapular retraction/depression; prone horizontal abduction to neutral)</p> <p>IR behind back gently without forceful overpressure</p> <p>Aerobic activities: walking; elliptical without UE resistance, stationary bike</p>	<p>AROM against gravity equals PROM</p> <p>No pain</p> <p>Need higher level demand than ADL functions (eg sport or work)</p>	<p>AROM shoulder elevation, ER(0), and functional IR (highest spinal level achieved with thumb behind back without overpressure</p> <p>PROM shoulder elevation, ER(0), ER(90) up to 60 degrees; and IR(90)</p> <p>Patient reported outcome measure</p> <p>Pain level</p>

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<p><b>3</b> (Post-operative month 3-5)</p>	<p>May begin to add resistance to shoulder – low loading with more repetition advised</p> <p>Keep weight training below shoulder level and anterior to the frontal plane</p> <p>Avoid impact loading such as sledgehammer, wood chopping, bench pressing, push-ups</p>	<p>Achieve functional demands for work and/or sport – patient specific</p> <p>Gradual increase in deltoid and peri-scapular muscle strength</p> <p>Maintain functional mobility of shoulder</p> <p>Pain-free use of shoulder in ADLs and leisure activities</p>	<p>Gentle end range stretching especially in forward elevation as part of a daily lifelong routine</p> <p>Deltoid, rotator cuff, scapular muscle and other upper body strengthening with light resistance (free weights, elastic bands, or gym machines)</p> <p>Biceps strengthening with weighted elbow flexion</p> <p>Functional sports specific training considering total body (eg core, endurance)</p> <p>Aerobic activities: walking, stationary bicycle, elliptical, jogging, swimming when strength is normalized in rotator cuff and scapular stabilizers</p>	<p>Strength and mobility needed for specific sport (for patients with higher level goals)</p>	<p>PROM for elevation, ER(0); ER(90); IR(90)</p> <p>AROM for elevation, ER(0) and functional IR</p> <p>Scapulohumeral rhythm/biomechanics of active movement strategies</p> <p>Strength testing for deltoid, rotator cuff, scapular muscles</p> <p>Sports specific analysis (eg trunk and hip rotation for golf)</p> <p>Patient reported outcome measure</p> <p>Pain</p>

PHASE	PRECAUTIONS AND GUIDELINES	GOALS	EXERCISES	CRITERIA TO ADVANCE TO NEXT PHASE	EXAMINATION
<p><b>4</b> (Post-operative month 5+)</p>	<p>Higher level exercise such as flow yoga allowed</p> <p>Initiate sports progression: golf, tennis – full return <b>after 6 months</b></p> <p><b>No lifting &gt; 25 lbs</b></p>	<p>Pain-free use of shoulder in sport/activity such as golf, yoga, swimming</p>	<p>Daily stretching</p> <p>Maintenance rotator cuff, scapular, core and sports-specific exercise</p>	<p>NA</p>	<p>ROM, strength</p> <p>Sports specific motion analysis</p> <p>Patient reported outcome measure</p> <p>Pain</p>

Created: June Kennedy, PT, DPT, and shoulder surgery team, June 2020