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Rehabilitation Protocol: Reverse Total Shoulder Arthroplasty

PHASE I: *Immediate Post-Op (0-3 WEEKS AFTER SURGERY)*

Rehabilitation Goals	<ul style="list-style-type: none"> ● Protect surgical repair ● Reduce swelling, minimize pain ● Maintain UE ROM in elbow, hand, and wrist ● Gradually increase shoulder PROM ● Minimize muscle inhibition ● Patient education
Sling	<ul style="list-style-type: none"> ● Neutral rotation ● Use of abduction pillow in 30-45 degrees abduction ● Use at night while sleeping
Precautions	<ul style="list-style-type: none"> ● No shoulder AROM ● No reaching behind back, especially in to internal rotation ● No excessive shoulder external rotation or abduction ● No lifting of objects ● No supporting of body weight with hands ● Place small pillow/towel roll under elbow while lying on back to avoid shoulder hyperextension
Intervention	<p><i>Swelling Management</i></p> <ul style="list-style-type: none"> ● Ice, compression <p><i>Range of motion/Mobility</i></p> <ul style="list-style-type: none"> ● PROM: ER ≤ 30 degrees in the scapular plane, IR to belt line in scapular plane, Flex/Scaption to tolerance, ABD ≤ 90 degrees, pendulums, seated GH flexion table slide, seated horizontal table slide ● AAROM: none ● AROM: elbow, hand, wrist <p><i>Strengthening (Week 2)</i></p> <ul style="list-style-type: none"> ● Periscapular: scap retraction, prone scapular retraction, standing scapular setting, supported scapular setting, inferior glide, low row ● Ball squeeze
Criteria to Progress	<ul style="list-style-type: none"> ● Gradual increase in shoulder PROM ● 0 degrees shoulder PROM in to IR ● Pain < 4/10 ● No complications with Phase I

PHASE II: Intermediate Post-Op (4-6 WEEKS AFTER SURGERY)

Rehabilitation Goals	<ul style="list-style-type: none"> • Continue to protect surgical repair • Reduce swelling, minimize pain • Gradually increase shoulder PROM • Initiate shoulder AAROM/AROM • Initiate periscapular muscle activation/strength • Initiate deltoid activation (avoid shoulder extension when activating posterior deltoid) • Patient education
Sling	<ul style="list-style-type: none"> • Use at night while sleeping • Gradually start weaning sling over the next two weeks during the day
Precautions	<ul style="list-style-type: none"> • No reaching behind back, especially in to internal rotation • No lifting of objects heavier than a coffee cup • No supporting of body weight with hands • Place small pillow/towel roll under elbow while lying on back to avoid shoulder hyperextension
Intervention <i>-Continue with Phase I interventions</i>	<p><i>Range of motion/Mobility</i></p> <ul style="list-style-type: none"> • AAROM: Active assistive shoulder flexion, shoulder flexion with cane, cane external rotation stretch, washcloth press, seated shoulder elevation with cane • AROM: supine flexion, salutes, supine punch <p><i>Strengthening</i></p> <ul style="list-style-type: none"> • Periscapular: scap retraction, standing scapular setting, supported scapular setting, low row, inferior glide • Deltoid: isometrics in the scapular plane
Criteria to Progress	<ul style="list-style-type: none"> • Gradual increase in shoulder PROM, AAROM, AROM • 0 degrees shoulder PROM in to IR • Palpable muscle contraction felt in scapular musculature • Pain < 4/10 • No complications with Phase II

PHASE III: Intermediate Post-Op Continued (7-8 WEEKS AFTER SURGERY)

Rehabilitation Goals	<ul style="list-style-type: none"> • Minimize pain • Gradually progress shoulder PROM, initiate shoulder PROM IR in the scapular plane • Gradually progress shoulder AAROM • Gradually progress shoulder AROM • Progress deltoid strengthening • Progress periscapular strengthening • Initiate motor control exercise • Patient education
Sling	<ul style="list-style-type: none"> • Discontinue

Precautions	<ul style="list-style-type: none"> No reaching behind back beyond pant pocket No lifting of objects heavier than a coffee cup No supporting of body weight with hands Avoid shoulder hyperextension
Intervention -Continue with Phase I-II interventions	<p><i>Range of motion/Mobility</i></p> <ul style="list-style-type: none"> PROM: Full in all planes, gradual PROM IR in scapular plane ≤ 50 degrees AAROM: incline table slides, wall climbs, pulleys, seated shoulder elevation with cane with active lowering AROM: seated scaption, seated flexion, supine forward elevation with elastic resistance to 90 deg <p><i>Strengthening</i></p> <ul style="list-style-type: none"> Periscapular: Row on physioball, serratus punches Deltoid: seated shoulder elevation with cane, seated shoulder elevation with cane with active lowering, ball roll on wall <p><i>Motor Control</i></p> <ul style="list-style-type: none"> IR/ER in scaption plane and Flex 90-125 (rhythmic stabilization) in supine <p><i>Stretching</i></p> <ul style="list-style-type: none"> Sidelying horizontal ADD, triceps and lats
Criteria to Progress	<ul style="list-style-type: none"> ROM goals**: <ul style="list-style-type: none"> Elevation ≤ 140 degrees ER ≤ 30 degrees in neutral IR ≤ 50 degrees in scapular plane or back pocket **PROM and AROM expectations are individualized and dependent upon ROM measurements attained in the OR post-operatively Minimal to no substitution patterns with shoulder AROM Pain $< 4/10$

PHASE IV: Transitional Post-Op (9-11 WEEKS AFTER SURGERY)

Rehabilitation Goals	<ul style="list-style-type: none"> Maintain pain-free ROM Initiate RTC strengthening with a concomitant repair Improve shoulder strength and endurance Enhance functional use of upper extremity
Precautions	<ul style="list-style-type: none"> No lifting of heavy objects (> 10 lbs)
Intervention -Continue with Phase II-III interventions	<p><i>Range of motion/Mobility</i></p> <ul style="list-style-type: none"> PROM: Full ROM in all planes <p><i>Strengthening</i></p> <ul style="list-style-type: none"> Periscapular: Resistance band shoulder extension, resistance band seated rows, rowing, robbery, lawnmowers, tripod, pointer Deltoid: gradually add resistance with deltoid exercise

	<p><i>Motor Control</i></p> <ul style="list-style-type: none"> ● IR/ER and Flex 90-125 (rhythmic stabilization) ● Quadruped alternating isometrics and ball stabilization on wall ● Field goals ● PNF – D1 diagonal lifts, PNF – D2 diagonal lifts
Criteria to Progress	<ul style="list-style-type: none"> ● Performs all exercises demonstrating symmetric scapular mechanics ● Pain < 2/10

PHASE V: *Advanced Strengthening Post-Op (12-16 WEEKS AFTER SURGERY)*

Rehabilitation Goals	<ul style="list-style-type: none"> ● Maintain pain-free ROM ● Initiate RTC strengthening with a concomitant repair ● Improve shoulder strength and endurance ● Enhance functional use of upper extremity
Precautions	<ul style="list-style-type: none"> ● No lifting of objects > 15 lbs
<p>Intervention -Continue with Phase II-IV interventions</p>	<p><i>Strengthening</i></p> <ul style="list-style-type: none"> ● Periscapular: Push-up plus on knees, “W” exercise, resistance band Ws, prone shoulder extension Is, dynamic hug, resistance band dynamic hug, resistance band forward punch, forward punch, T and Y, “T” exercise ● Deltoid: continue gradually increasing resisted flexion and scaption in functional positions ● Elbow: Bicep curl, resistance band bicep curls, and triceps ● Rotator cuff: internal external rotation isometrics, side-lying external rotation, Standing external rotation w/ resistance band, standing internal rotation w/ resistance band, internal rotation, external rotation, sidelying ABD→standing ABD <p><i>Motor Control</i></p> <ul style="list-style-type: none"> ● Resistance band PNF pattern, PNF – D1 diagonal lifts w/ resistance, diagonal-up, diagonal-down, wall slides w/ resistance band
Criteria to Progress	<ul style="list-style-type: none"> ● Clearance from MD and ALL milestone criteria have been met ● Maintains pain-free PROM and AROM ● Performs all exercises demonstrating symmetric scapular mechanics

Protocol adapted from Mass General Sports Medicine Physical Therapy Rehabilitation Protocols. See <https://www.massgeneral.org/orthopaedics/sports-medicine/physical-therapy/sports-rehab-protocols>