Total Shoulder Arthroplasty

Rehabilitation Guideline

This rehabilitation program is designed to return the individual to their activities as quickly and safely as possible. It is designed for rehabilitation following total shoulder arthroplasty. Modifications to this guideline may be necessary depending on physician-specific instructions, location of repair, concomitant injuries or procedures performed. This evidence-based total shoulder arthroplasty guideline is criterion-based. Timeframes and visits in each phase will vary depending on many factors including patient demographics, goals and individual progress. This guideline is designed to progress the individual through rehabilitation to full sport and activity participation. The therapist may modify the program appropriately depending on the individual's goals for activity following total shoulder replacement.

This guideline is intended to provide the treating clinician with a frame of reference for rehabilitation. It is not intended to substitute clinical judgment regarding the patient's postoperative care based on exam or treatment findings, individual progress and/or the presence of concomitant procedures or postoperative complications. If the clinician should have questions regarding postoperative progression, they should contact the referring physician.

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General Guidelines/Precautions:

- Outcome measure reporting (FOTO, Quick DASH, SPADI, simple shoulder test).
- PROM only for the first 4 weeks, AAROM at 4 weeks, strengthening starts at 10 weeks.
- Avoid ER beyond 30° to protect subscapularis repair in first 4-6 weeks.
- Avoid excessive extension beyond 0°.
- Avoid excessive external rotation with abduction to avoid dislocation risk.
- Sling/immobilizer to be worn at all times except while doing exercises for 6 weeks.
- If extensive work was done on rotator cuff during TSA, follow physician's special instructions and/or rotator cuff guideline.
- Avoid light activities with wrist and hand for 2 weeks other than prescribed exercises.
- Expect return to moderate functional activities gradually at 3-4 months post-op.
- Expect return to more challenging activities (i.e., golfing and racquet sports) 4-6 months.
- 20 lb. lifting restriction with operative arm extended away from body or overhead per physician preference.

Total Shoulder Arthroplasty Rehabilitation Guideline

PHASE	SUGGESTED INTERVENTIONS	GOALS/MILESTONES FOR PROGRESSION
Phase I: *Patient Education / Pre-op Phase* *Expected visits: 1-2*	***Discuss:*** • Anatomy, existing pathology, post-op rehab schedule, wearing of sling/immobilizer and expected progression ***Education and Instruction on Pre-op Exercises and Expectations:*** Prospective joint replacement candidates will participate in pre-op education individually or in a class setting which includes instruction in: • Home safety and assistance • Equipment recommendations • Pre-surgical UE exercises • Donning/doffing immobilizer • Dressing techniques • Post-op pain expectations	***Goals of Phase:*** 1. Improve ROM and strength prior to surgery 2. Patient should feel comfortable with plans for after surgery.

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Phase II:
Acute Care Stay
 	
(Post-op 0-1 days)
	Immediate Post-operative instructions:
	Patient and family/coach education and training in an individual or group setting for:
	• Safety with mobilization and transfers
	• HEP
	• Donning/doffing immobilizer
	• Dressing techniques
	• Instruct in precautions:
	  • No active motion of surgical shoulder
	  • Sling/immobilizer to be worn except when performing exercises
	  • No support of body weight with involved hand
	  • Keep incisions clean and dry
	• No passive ER beyond 30°
	• Avoid excessive shoulder extension beyond 0°
	Exercises
	• PROM flexion and scaption to tolerance
	• PROM ER to 20-30° (in scapular plane), IR to chest wall
	• Pendulum exercises if able
	• AROM elbow flexion, extension, wrist flexion/extension, hand opening/closing, gripping
		Goals of Phase:
		1. Instruct in HEP
		2. Assess and provide education on mobility, dressing and self care
		3. Educate patient on restrictions
		Suggested Criteria to Advance to Next Phase:
		1. SBA for transfers, bed mobility and household ambulation distances with appropriate AD, shower/toilet transfers
		2. CGA for stairs with appropriate AD
		3. MIN A for bathing, dressing, sling/immobilizer.

Phase III:
Maximum Protection Phase
 	
Weeks 0-4
 	
Expected visits: 4-10
	Specific Instructions:
	• No active motion of surgical shoulder
	• No passive ER beyond 30°
	• Avoid excessive shoulder extension beyond 0°
	• Sling to be worn except when performing exercises
	• No support of body weight with involved hand
	• Keep incisions clean and dry
	Suggested Treatments:
	• Modalities:
	  • Cryotherapy, E-stim,
	  • Avoid heat for 2 weeks
	• Range of Motion:
	  • Shoulder PROM
	  • Elbow, wrist, and hand AROM
	  • C-spine AROM
	• Manual Therapy:
	  • Soft tissue mobilization, scapular mobilization, light GH mobilization grade 1 for pain control.
	Exercise Examples:
	• Shoulder PROM: Flexion and scaption as tolerated in **pain-free ranges**, ER no greater than 30° in scapular plane or as directed by MD), IR to chest wall
	• Pendulum exercise as tolerated
	• Continue elbow, wrist, and hand AROM exercises with no resistance
	• C-spine AROM, upper trapezius relaxation, scapular retraction
	• Scapular stabilization
	Other Activities:
	• Walking program
		Goals of Phase:
		1. Reduce pain and edema
		2. Initiate early PROM with goal of 90° flexion and 30° of ER in scapular plane
		3. Educate patient on restrictions
		4. PROM flexion to 120° weeks 3-4 post-op.
		Suggested Criteria to Advance to Next Phase:
		• Tolerates PROM to involved shoulder acceptable pain levels

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Phase IV:
Motion and Muscle Activation Phase
 	
Weeks 4-8
 	
Expected visits: 8-12
	Specific Instructions:
	• Wean from sling as tolerated and as directed by physician (6-8 weeks)
	• Avoid overhead activities
	• Continue protecting the subscapularis repair
	Suggested Treatments:
	• ROM:
	  • AAROM **at 4 weeks** and AROM **at 6 weeks**
	• Manual Therapy:
	  • Soft tissue mobilization, scar mobilization, light GH mobilization, scapular mobilization.
	Exercise Examples:
	• Rhythmic stabilization, reverse Codman's
	• At 4 weeks, **submaximal pain-free isometrics**
	• At 4 weeks, begin AAROM exercises (cane, wand, etc.)
	• 6 weeks, AROM in all planes with focus on reducing compensation patterns and scapulohumeral rhythm
	• Functional reaching patterns PNF diagonals
	• Thoracic mobility
	• Ball stabilization drills on the wall
	• Pulleys and UBE with no resistance
		Goals of Phase:
		1. Active flexion 100-120°, ER to 45-60°, IR reach to belt line
		2. Grade 3/5 strength for flexion and abduction in the scapular plane
		3. Resume use of involved UE with light ADL's
		Suggested Criteria to Advance to Next Phase:
		1. Minimal pain with AROM or isometrics
		2. No compensation in movement patterns of AROM

Phase V:
Moderate Strengthening
 	
Weeks 8-12
 	
Expected visits: 6-12
	Specific Instructions:
	• Continue previous exercises
	• Use of involved UE with most ADLs
	Suggested Treatments:
	• ROM:
	  • Continue to progress with AROM in all planes
	• Strength:
	  • **At 10 weeks**, initiate light resistance exercises (1-2 lbs) as tolerated
	• Manual Therapy:
	  • Joint mobilizations continued if impingement signs or ROM is lacking
	Exercise Examples:
	• Light resistance exercises as tolerated into cardinal and functional planes avoiding compensation patterns
	• Continue rhythmic stabilization and alternating isometric stability drills
	• Functional movement patterns with slight resistance avoiding pain and/or compensation patterns
	• Progress scapular strength
	• Aquatic therapy
		Goals of Phase:
		1. Active flexion 130-160°, IR to thoracic spine, ER to 80° understanding not every patient will obtain this based on diagnosis/co-morbidities
		2. 4/5 grade strength for flexion, abduction, ER
		3. Return to all ADLs with minimal pain
		Suggested Criteria to Advance to Next Phase:
		1. No pain with ADLs or light recreational or work activities
		2. Consider discharge if goals are met and patient is not returning to advanced movement or high-velocity activities (i.e., golfing, throwing, racquet sports, heavy yard work, physically demanding job)

Phase VI: *Advanced Movement and High Velocity* *Months 3-6* *Expected Visits: 0-4*	***Specific Instructions:*** • Avoid high-velocity throwing or swinging activities until 4-6 months, per physician preference ***Suggested Treatments:*** • Continue ROM exercises as needed • Progress resistance exercises as needed • Sessions consist of monitoring HEP, giving cues, and modifying as needed ***Exercise Examples:*** • Initiate light throwing activities • Progress to moderate resistance exercises • Body weight supported exercises on shoulder • Sport replicating motions at progressive velocities and resistance as tolerated	***Suggested Criteria for Discharge:*** 1. Return to advanced functional activities with no restrictions. 2. ROM within 90% opposite side 3. Strength (measured with HHD) within 90% of opposite side

**NOTE: Progression of functional activities should be performed only as pain and proper biomechanics and movement patterns allow.

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