

## SHOULDER ARTHROPLASTY PROTOCOL

This rehabilitation protocol has been developed for the patient following a shoulder arthroplasty (replacement) procedure. This protocol will vary in length and aggressiveness depending on factors such as:

- Presence of a functional rotator cuff (intact or repaired)
- Type of shoulder replacement (anatomic or reverse)
- Presence of a glenoid resurfacing component
- Arthroplasty performed for arthritis versus fracture
- Strength/pain/swelling/range of motion status
- Rehabilitation goals and expectations

Early passive range of motion is highly beneficial to prevent stiffness, but must be performed within the limits defined during surgery to allow healing. The protocol is divided into phases. Each phase is adaptable based on the individual and special circumstances. The **overall goals** of the surgical procedure and rehabilitation are to:

- Relieve pain associated with arthritis
- Regain or improve upon pre-operative shoulder range of motion
- Regain upper extremity strength and endurance
- Achieve a level of function based on the pre-operative goals

Physical therapy may be initiated the day after surgery in the hospital. After discharge, a supervised rehabilitation program may be prescribed, and is to be supplemented by a home fitness program where the patient performs the given exercises at home or at a gym facility. **Important post-op signs** to monitor:

- Swelling of the shoulder and surrounding soft tissue
- Abnormal pain response, hypersensitive-an increase in night pain
- Severe range of motion limitations
- Weakness in the upper extremity musculature
- Persistent drainage from the incision

**Rehabilitation** requires both time and clinical evaluation. To optimize function post-operatively, the patient requires adequate strength, flexibility, and endurance. Symptoms such as pain, swelling, or instability should be closely monitored by the patient.

**Phase 1: Week 1-6  
 Shoulder Arthroplasty**

<b>WEEK</b>	<b>EXERCISE</b>	<b>GOAL</b>
1-6	ROM	
	<b>NO active shoulder motion for the first 3 weeks</b>	
	Begin active flexion, extension, abduction and external rotation week 3-4	
	Pendulum exercises	
	Elbow, wrist and hand range of motion	
	Gentle posterior capsular stretching (Anatomic only)	
	Passive ROM and AAROM	
	If rotator cuff intact or repaired:	
	Forward flexion	0-120° week 1 0-140° week 2
	External rotation at side	0-20° week 1 0-40° week 2
	Abduction at 0° rotation	0-75° weeks 1-2
	If rotator cuff deficient:	
	Forward flexion	0-90° week 4
	External rotation at 30° abduction	0-20° week 4
	Internal rotation at 30° abduction	0-30° week 4
	For Reverse arthroplasty:	
	Forward Flexion	>120° week 4 >140° week 6
	External rotation at side	>30° week 4 Full week 6
	NO internal rotation until 4 weeks, then gentle increase	
	STRENGTH	
	Grip strengthening with putty or ball	
	BRACE	
	Shoulder brace for 7-10 days or as instructed	
	Brace removed to perform exercises above	
	MODALITIES	
	E-stim and ultrasound as needed	
	Moist heat before, ice after for 15-20 minutes	

**GOALS OF PHASE:**

- Promote healing of subscapularis +/- rotator cuff if repaired
- Control pain and inflammation
- Restore nearly full ROM
- Delay muscle atrophy

**Phase 2: Week 6-12  
 Shoulder Arthroplasty**

<b>WEEK</b>	<b>EXERCISE</b>	<b>GOAL</b>
6-12	ROM Increase active ROM in all planes Grade I-II joint mobilizations Pendulum exercises Elbow, wrist and hand range of motion Rope/Pulley (flex/abd/scaption) Posterior capsular stretching Initiate gentle ER stretching Anatomic arthroplasty: Forward flexion External rotation at side Abduction in 40° ER and IR Reverse arthroplasty: Forward flexion External rotation at side Avoid active internal rotation STRENGTH – limit cuff strengthening to 3x/week Continue grip strengthening as needed Initiate submaximal isometrics in external rotation and abduction at week 6 Initiate supine AROM exercises without resistance Theraband strengthening External rotation and abduction only Done with elbow at side and flexed to 90° Performed through arc of 45° Start with minimum resistance, advance to higher resistance bands, then light dumbbells Initiate scapular stabilizer strengthening Shrugs and scapular depression Scapular protraction and retraction MODALITIES E-stim and ultrasound as needed Moist heat before, ice after for 15-20 minutes	0-160° 0-60° 0-90° 0-140° 0-45°

**GOALS OF PHASE:**

- Reach goal ROM without pain
- Initiate strengthening of rotator cuff while allowing healing
- Initiate scapular stabilization

**Phase 3: Week 12-24  
Shoulder Arthroplasty**

<b>WEEK</b>	<b>EXERCISE</b>
12-24	<p>ROM</p> <p>Continue all ROM from previous phases Posterior capsule stretching Initiate Grade II-IV joint mobs as needed</p> <p>STRENGTH – limit to 3x/week</p> <p>Continue with all strengthening from previous phases increasing resistance and repetition Add internal rotation and extension strengthening Continue scapular stabilizer strengthening Deltoid strengthening Plyometric exercises</p> <p>MODALITIES</p> <p>Continue as needed</p>

**GOALS OF PHASE:**

- Gradual return to functional activities
- Reach full ROM
- Improve upper extremity strength, power and endurance
- Enhance neuromuscular control and shoulder proprioception
- Home program with daily ROM exercises and strengthening 3x/week
- If rotator cuff is deficient, ROM and strengthening to be done within available limits