BEN MAYO, MD
SHOULDER, ELBOW, HIP, AND KNEE SURGERY

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Surgical Rehabilitation Protocol
Anatomic Total Shoulder Arthroplasty

The following information is to help make your recovery from surgery as smooth and rapid as possible. If you have any questions or concerns, contact the Dr. Mayo's team at the number above. You will have appointments with Dr. Mayo at ~1-2 weeks and ~4 weeks postop.

Phase 1: Recovery from Surgery – 0-4 Weeks After Surgery

Goals	• Protect the shoulder replacement • Ensure wound healing and early healing of capsule • Educate patient on rehab progression, position of dislocation with the arm in internal rotation/adduction/extension. Tucking in shirt or performing bathroom hygiene with the operative arm is particularly dangerous. Restriction in place effect for at least 12 weeks postoperatively. • Diminish joint swelling and pain • Increase passive range of motion and prevent stiffness • Restore active range of motion of the elbow, hand, and wrist • Maximize activities of daily living (ADL) with modifications and precautions in mind • Reduce muscle atrophy and prevent rotator cuff inhibition
Precautions	• ***Sling***: Sling for first 2 weeks except for hygiene, changing clothes, and therapy program. Then ok to come out as tolerated. • ***Weight Bearing***: No putting weight through your operative arm or lifting anything • ***Range of Motion***: Avoid shoulder extension with adduction, internal rotation. Avoid shoulder hyperextension. No cross body adduction. • ***No External Rotation past neutral for 4 weeks*** • Progress flexion to 60 for first 2 weeks, then to 90 • **Wound Care**: Leave dressing on until followup. No swimming or submerging in water until wounds healed (4 weeks minimum). • ***Call Dr. Mayo if***: Significant wound drainage or dehiscence, purulence, erythema.
Therapeutic Exercises *See last page for example exercises*	• ***Strengthening***: Submaximal scapular exercises, submaximal pain free deltoid isometrics • ***Motion:*** Pendulums, passive and active assist range of motion forward flexion and external rotation at side • ***Conditioning***: Stationary bike, walking • ***Modalities***: Cryotherapy, NMES • ***Manual Therapy***: At therapist discretion
Home Instructions	• ***Wound Care***: Leave bandage in place until followup unless • ***Bathing***: OK to shower right away with postop dressing on. OK to shower after the bandage removed allow water to run over, pat dry. No submerging in water (bath/pool/lake/etc.) for 4 weeks. • ***Driving***: Must be off all narcotic pain meds when operating vehicle ○ No driving until 4 weeks • ***Sleeping***: May be more comfortable to sleep propped up in a chair or pillows in bed • ***Ice and Elevation***: Ice for 20 minutes every hour for the first week. • ***Home Exercise***: As instructed by physical therapy.
Criteria to Progress	☐ 4 weeks postop

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Phase 2: Early Strengthening/Neuromuscular Control – 4-12 Weeks After Surgery

Goals	• Protect the shoulder replacement and capsule • Avoid position of dislocation with the arm in internal rotation/adduction/extension. Tucking in shirt or performing bathroom hygiene with the operative arm is particularly dangerous. Restriction in place effect for at least 12 weeks postoperatively. • Increase active range of motion • Regain function for normal activities of daily living (ADL) with precautions in mind
Precautions	• ***Sling***: None • ***Weight Bearing***: No putting weight through your operative arm or lifting anything more than cup of coffee weight • ***Range of Motion***: Avoid shoulder extension with adduction, internal rotation. Avoid shoulder hyperextension. No cross body adduction. • Full flexion, external rotation to 30 until 6 weeks, then full. • ***Call Dr. Mayo if***: Significant wound drainage or dehiscence, purulence, erythema. Complaints of feeling instability
Therapeutic Exercises *See last page for example exercises*	• ***Strengthening***: Active range of motion, external rotation at side and in scapular plane, deltoid strengthening at week 8 • ***Motion:*** Progress active range of motion with restrictions • ***Conditioning***: Stationary bike, walking • ***Modalities***: Cryotherapy, NMES • ***Manual Therapy***: At therapist discretion
Home Instructions	• Resume normal ADL as tolerated • ***Driving***: OK to drive • ***Home Exercise***: As instructed by physical therapy.
Criteria to Progress	☐ Tolerates AAROM/AROM/strengthening ☐ ~120^0 AROM flexion ☐ ~100^0 AROM abduction ☐ ~40^0 AROM ER

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The following information is to help make your recovery from surgery as smooth and rapid as possible. If you have any questions or concerns, contact the Dr. Mayo's team at the number above. You will have appointments with Dr. Mayo at ~4 months and ~6 months postop.

Phase 3: Return to Activity Phase – 12+ Weeks After Surgery

Goals	• Return to full activities
Precautions	• None
Therapeutic Exercises	• Progress strengthening and active motion as tolerated
Home Instructions	• ***Home exercises*:** Workouts in gym, focus per physical therapist
Criteria to Progress	☐ When able to tolerate activities as needed

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Sample Rehabilitation Exercises by Phase

Phase I	Phase II
Week 0-4	**Week 4-12**
• **Posture**: active seated and standing thoracic extension and scapular sets (retraction to neutral), depression and protraction, cervical ROM/upper trapezius stretch as needed • **Pendulum**: for first two weeks, emphasize passive motion • **PROM**: self-assisted with non-operative UE, bent elbow supine elevation in scapular plane; or seated table top supported elevation in scapular plane in established PROM constraints (0-90); NO pulley or cane assisted elevation in this phase • **AROM**: Active assist for shoulder when tolerating with ROM restrictions. Elbow, wrist and hand; only PROM (opposite UE assisted) for elbow flexion and supination if concomitant biceps tenodesis/tenotomy performed • Grade I/II mobilization as indicated for pain relief • Seated or supine self-assisted or wand assisted ER in scapular plane in established PROM constraints (0-40) • NO ROM behind the back in this phase; No Cross body adduction past midline • Avoid position of dislocation	• Continue thoracic extension and scapular set (retraction to neutral plus depression) prior to any passive or active exercise for optimal positioning • **PROM** to tolerance with gentle overpressure in all planes; may begin cross body adduction, hand slide up spine, etc, in range without muscle splinting/guarding; may begin ER at 90 deg. abduction in scapular plane. Integrate grade 3/4 glenohumeral mobilization as needed prior to PROM • **AAROM**: cane assisted forward elevation in supine - begin with bent elbow, progress to straight as able to control the short lever arm through the range without pain; progress to inclined table 3 Rotator Cuff Repair Rehab Guidelines top AROM (bent then straight elbow); progress to vertical supported on wall (bent then straight elbow); then vertical unsupported • **AROM**: ER in sidelying; prone extension to hip (not past 20 degrees extension) with end range scapular retraction; supine serratus punches; supine long lever arm motion in controlled range from balanced position • **Aquatic**: no range restrictions; may add “hug yourself” activity and “hook and rotate” and may progress speed as directed by PT/MD • Submaximal isometrics for ER; IR; abduction; flexion; extension • Rhythmic stabilization in balanced position (90 degrees elevation in supine) with submaximal force. Gradually increase force and move out of balanced position: 60, 120, 150 degree positions of elevation • Sideling manually resisted scapular protraction and retraction

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Phase III

Weeks 13-24

- UBE for active warm up
- Continued end range stretching and mobilizations as needed, particularly posterior capsule (cross body adduction, sleeper stretch with scapula stabilized, ER > 90 degrees for throwers/tennis)
- Rotator cuff strengthening: “full can” scaption, initially to 90, then throughout range, no weight, to max 3-5 lb. resistance; ER and IR strengthening with hand weights or theraband, initially below shoulder level, progressing to above shoulder level as needed for work or sport. Emphasize high repetitions (30-50) with low resistance (1-5 lbs); progress in increments of one pound when 30-50 repetitions are easy and painless
- Scapular stabilization exercises: Extension to hip and horizontal abduction with ER, either prone with hand weights, or standing with theraband; serratus presses in supine with hand weight; serratus wall presses with shoulder in neutral and in ER, progressing to co-contraction on air disc, plyoball, then progress to weight bearing on incline.
- Deltoid: forward and lateral raises to 90 degrees with light hand weight
- Use of weight lifting machines (chest press, lat pull downs, seated row...) only anterior the plane of the body; incorporate scapular work to end range; low resistance and high reps 4 Rotator Cuff Repair Rehab Guidelines
- Combined muscle patterns: PNF diagonals progressing from supine to standing, seated on ball for core added, progressing resistance from none to theraband or hand weight
- Aquatics: may do full motion for all exercises, with cupped hand, progressing to use of gloves or paddle for added resistance and then increasing speed of movement
- Advanced strengthening activities (not needed for all patients - must have 4/5 in cuff and scapular mm) useful for overhead athletes or heavy laborers: plyoball chest passes on minitramp; body blade ER neutral, 90 deg elevation in scapular plane; sports specific arm movement simulation with theraband or Body blade (eg. tennis swing)