

# Minimally Invasive Total Shoulder Arthroplasty

## Physical Therapy Protocol

### General Considerations

#### Surgical Overview

Minimally invasive **total shoulder arthroplasty (TSA) with subscapularis-sparing** involves preserving the subscapularis tendon, allowing for:

- **Immediate use of the shoulder** after the nerve block wears off.
- Early engagement in daily tasks **without the need for a sling**.

#### Primary Goals

- Protect the surgical site and facilitate healing.
- Gradually restore **functional range of motion (ROM)** and strength.
- Promote early, **gentle shoulder activity**.

#### Precautions

- **No heavy lifting (>5 lbs)** for the first **6 weeks**.
- Avoid **internal rotation (IR) beyond neutral** and **extreme overhead motion** during the first **6–8 weeks**.

## Phase I: Immediate Post-Operative Recovery (Weeks 0–6)

### Key Focus and Precautions

- **No sling required.**
- **Gentle use** of the shoulder is allowed once the nerve block wears off (e.g., eating, dressing, light activities).
- **No lifting >5 lbs** until cleared.
- Avoid extreme **internal rotation (IR)** and **overhead motions** during the first **6 weeks**.

### Interventions

- **Pain Management:** Cryotherapy and proper positioning to reduce swelling.
- **Hand/Wrist/Elbow AROM:** Gentle mobility exercises for the distal joints.
- **Gentle Scapular Exercises:** Light scapular retraction, elevation, and depression.
- **PROM (Performed by PT):**
  - **Forward elevation:** 0°–90°.
  - **External rotation (ER):** 0°–20°.

### Criteria to Progress

- **Pain and swelling controlled.**
- **PROM:** Forward elevation  $\geq 90^\circ$ , ER  $\geq 20^\circ$ .

## Phase II: Active-Assisted Range of Motion and Early Strengthening (Weeks 6–12)

### Key Focus and Precautions

- Begin **Active-Assisted Range of Motion (AAROM)** while avoiding **IR and extension beyond neutral**.

- No lifting >5 lbs.

## Interventions

- **AAROM:** Supine forward elevation and ER (gentle assistance).
- **Strengthening:** Begin **isometric deltoid exercises** (flexion, abduction) without resistance.
- **Functional Mobility:** Encourage **gentle use** of the shoulder for daily activities.

## Criteria to Progress

- **AAROM without compensations.**
- **PROM:** Forward elevation  $\geq 120^\circ$ , ER  $\geq 30^\circ$ .

## Phase III: Active Range of Motion and Strengthening (Weeks 12–16)

### Key Focus and Precautions

- Gradually increase **active range of motion (AROM)** while protecting healing tissues.
- Begin **strengthening the deltoid and scapular stabilizers.**
- Avoid lifting heavy loads or high-stress overhead activities.

## Interventions

- **AROM Progression:** Forward flexion, abduction, ER to full ROM.
- **Strengthening:** Light resistance (**1–2 lbs**) for deltoid and scapular muscles.
- **Functional Movements:** Start **functional tasks** such as dressing, light lifting, and reaching.

## Criteria to Progress

- **Full AROM without pain.**
- **Strength  $\geq 4/5$**  in deltoid and scapular stabilizers.

## Phase IV: Strengthening and Functional Progression (Weeks 16–24)

### Key Focus and Precautions

- Continue **strengthening shoulder muscles**, focusing on functional activities.
- Gradually return to **overhead motions** and more dynamic tasks.
- Avoid **high-stress overhead motions** until 24 weeks.

### Interventions

- **Strengthening:** Continue **light resistance** for deltoid, scapular muscles, and rotator cuff.
- **Functional Training:** Start **functional activities** like **lifting light items overhead, carrying, and reaching.**
- **Sport-Specific Training:** Begin **light sport-specific activities** (e.g., swimming, tennis, or golf).

### Criteria to Progress

- **Full pain-free ROM.**
- **Strength sufficient** for ADLs and light recreational activities.

## Phase V: Advanced Strengthening and Return to Activity (Weeks 24–36+)

### Key Focus and Precautions

- Return to **higher-level activities** once the shoulder has regained **strength and stability**.
- Full return to **overhead lifting** and **sport-specific movements** once strength and ROM allow.

### Interventions

- **Advanced Strengthening:** Continue **progressive resistance** for deltoid, scapular stabilizers, and rotator cuff muscles.
- **Sports-Specific Training:** Continue **sports-specific activities** such as **swimming, light tennis, and golf**.
- **Functional Lifting:** Gradually increase **overhead lifting** and carrying heavier items.

### Criteria for Full Return

- **Pain-free function** in ADLs and recreational activities.
- **Shoulder strength**  $\geq 85\%$  of the contralateral side.
- **Ability to perform overhead tasks** and sport-specific movements **without limitations**.

### Key Notes for Progression

- **Patient Education:** Immediate **light use is allowed post-surgery**, but avoid **heavy lifting or high-stress overhead motions** for at least **6 weeks**. Use the shoulder for daily activities but in a **gentle, controlled manner**.
- **Criteria for Advancement:** Strength  $\geq 4/5$ , AROM  $\geq 90\%$  of contralateral side, **pain-free function**.

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- **Red Flags: Increased pain, swelling, or difficulty with ROM** should prompt reassessment.

## Final Considerations

- Follow all precautions to ensure a smooth recovery.
- Gradual strengthening and controlled movement will maximize surgical success.
- Reach out to your healthcare provider if you experience concerns or setbacks.

## How to Use This Guide

- Adhere to the outlined progression phases
- Monitor pain and ROM improvements
- Communicate any concerns to your surgeon or therapist

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