Dr. Harold Schock III, MD
Total Shoulder or Reverse Arthroplasty Protocol

Phase 1 – Maximum Protection (0-6 weeks)

Goals for phase 1

- Minimize pain and inflammation
- Protect integrity of the repair
- Initiate shoulder PROM
- Prevent muscular inhibition

Precautions

- Check op note- if subscapularis repair or reverse arthroplasty, no forced passive or active assist IR for 12 weeks

Criteria for progression to Phase 2

- Minimal pain with Phase 1exercises
- Passive shoulder flexion ≥ 110°
- Passive shoulder abduction ≥ 60°
- Passive shoulder internal andexternal rotation at 45° abduction in scapular plane to 45° each

Immobilization

- Sling immobilization for 6 weeks except for bathing and therapeutic exercises as provided at prehab visit.
  - **No abductor pillow for sling**

Initial Post-op Exercises

- Elbow, forearm, wrist, hand (grip) AROM exercises; pendulum (Codman's) exercise; scapular squeezes; upper trapezius stretching; postural correction.
- Remove ABD sling 3 times per day for performance of home exercise program

Post-op Physical/Occupational Therapy

- **1st therapy visit to occur 6 weeks post-op**
  - Ensure appropriate fit of sling and reinforce on proper use
  - Review initial post-operative exercises and reinforce on proper performance
  - PROM check performed
    - Goal 90°FLEX, 60°ABD, 30°IR and ER at 45°ABD
    - Limit 120°FLEX, 90°ABD, 45°IR and ER at 45°ABD

Manual Therapy

- Initiate pain dominant glenohumeral joint mobilization (grade 1-2)
- Initiate scar mobilization, soft tissue mobilization, lymphedema massage
- Initiate other shoulder, scapular, and cervicothoracic manual therapy techniques, as needed

PROM

- Initiate manual shoulder PROM in all planes of motion within limitations
  - Limit 120°FLEX, 90°ABD, 45°IR and ER at 45°ABD
  - Avoid sustained end range stretching

AAROM

- Initiate shoulder ER AAROM with wand at 45° ABD
  - Limit to 45° ER
- Initiate shoulder FLEX and ABD AAROM
  - Table slides, U.E. Ranger, physio-ball, wand, etc.
  - Avoid pulleys

Modalities

- Utilize cryotherapy, thermotherapy, and electrical modalities, as needed

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Phase 2 – Active Range of Motion (6-12 weeks)

Goals for Phase 2

- Minimize pain and inflammation
- Restore full shoulder PROM
- Restore full shoulder AROM
- Initiate sub-maximal rotator cuffactivation and neurodynamic stabilization exercises
    - No shoulder shrug sign with elevation AROM

Precautions

- Continue Phase 1 precautions- if subscapularis repair or reverse arthroplasty, no forced passive or active assist IR for 12 weeks.

Criteria for Progression to Phase 3

- Minimal pain with Phase 2 exercises
- Full shoulder PROM withminimal pain
- Full shoulder AROM withminimal pain
- Demonstrate neurodynamicstabilization of the shoulder
- No evidence of shoulder shrug with elevation AROM

Manual Therapy

- Continue pain dominant glenohumeral joint mobilization (grade 1-2), as needed
- Initiate stiffness dominant glenohumeral joint mobilization (grade 3-4), as needed
    - Utilize stiffness dominant glenohumeral joint mobilization (grade 3-4) to facilitate specific AROM and PROM deficits
- Continue scar mobilization, soft tissue mobilization, lymph edema massage, as needed
- Continue other shoulder, scapular, and cervicothoracic manual therapy techniques, as needed

PROM

- Continue manual shoulder PROM, as tolerated, with consideration for surgical precautions.
    - Initiate sustained end range stretching with consideration for surgical precautions
    - No forced passive or active assisted IR with subscapularis repair or reverse arthroplasty

AAROM

- Continue shoulder ER AAROM with wand at 45°ABD
    - Progress from 45° to 60° to 90° ABD
- Continue shoulder FLEX and ABD AAROM
    - Table slides, wall slides, U.E. Ranger, physio-ball, wand, pulleys, etc.

AROM

- Initiate shoulder AROM in all planes of motion as tolerated
    - Gradually progress from gravity reduced to full gravity positions
    - Gradually progress from below shoulder height to above shoulder height
    - Consider single-planar and multi-planar movement patterns
- Do **NOT** exercise through shoulder shrug sign

Strengthening

- Initiate sub-maximal shoulder isometrics for FLEX, ABD, EXT, IR, and ER
- Initiate light isotonic scapular strengthening
    - supine press, serratus press outs, prone row, etc.
- Initiate light isotonic biceps and triceps strengthening
- Initiate sub-body weight closed-chain strengthening exercises
    - Wall press outs, countertop press outs, etc.
- Avoid sub-body weight suspension training exercises
    - TRX, GTS, assisted chin or dip machine, etc.

Aquatics

- Utilize aquatics for patients who are significantly painful, stiff, or guarded
    - Initiate when surgical incisions have healed
    - Initiate buoyancy assisted ROM exercises within limitations
    - Consider alternating land- and aquatic-based physical therapy visits

Neuromuscular Control

- Initiate sub-maximal rhythmic stabilization drills
    - Gradually progress shoulder FLEX from 100°to 90°to 60°to 30°
    - Gradually progress shoulder IR and ER from 30°to 60°to 90°ABD

NMES

- Utilize NMES to facilitate rotator cuff and scapular activation and strengthening

Modalities

- Utilize cryotherapy, thermotherapy, and electrical modalities as needed

Phase 3 – Strengthening (12+ weeks)

Goals for Phase 3

- Minimize pain and inflammation
- Maintain full shoulder PROM and AROM
- Improve shoulder, scapular, and total arm strength
- Improve neurodynamic stabilization of the shoulder
- No shoulder shrug sign withstrengthening exercises

Criteria for Progression to Phase 4

- Minimal pain with Phase 3 exercises
- Full, pain free shoulder PROM and AROM
- Shoulder, scapular, and total arm strength ≥ 80% of the uninvolved side (4/5)

Manual Therapy

- Continue stiffness dominant glenohumeral joint mobilization (grade 3-4), as needed
- Continue other shoulder, scapular, and cervicothoracic manual therapy techniques, as needed

PROM

- Continue manual shoulder PROM and stretching, as needed
- For subscapularis repair or reverse arthroplasty, initiate IR PROM and stretch as needed

Strengthening

- Initiate gradual progression of isotonic rotator cuff strengthening exercises
  - Gradually progress from gravity reduced to full gravity positions
  - Gradually progress from below shoulder height to above shoulder height
  - Gradually progress internal and external rotation from 30° to 60° to 90° abduction and from supported to unsupported conditions
  - Consider single-planar and multi-planar movement patterns
- Progress isotonic scapular strengthening exercises
  - Progress from isolated to functional movement patterns
- Progress isotonic biceps and triceps strengthening exercises
  - Progress from isolated to functional movement patterns
- Progress closed-chain strengthening exercises
  - Gradually progress from sub-body weight to full body weight positions
  - Gradually progress from stable to unstable surfaces
  - Do **NOT** exercise through shoulder shrug sign

Neuromuscular Control

- Progress rhythmic stabilization exercises to more functional positions and dynamic movement patterns
  - Gradually progress from mid-range to end range positions
  - Gradually progress from open-chain to closed-chain positions
- Initiate gradual progression of other neuromuscular control exercises
  - Body blade, wall dribbles, ball flips, plyoback, etc.

Core Stabilization

- Incorporate core integrated exercises with strengthening and neuromuscular control progression

NMES

- Utilize NMES to facilitate rotator cuff and scapular activation and strengthening

Modalities

- Utilize cryotherapy, thermotherapy, and electrical modalities as needed

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Phase 4 – Return to Activity (18+ weeks)

Goals for Phase 4

- Minimize pain and inflammation
- Maintain full shoulder PROM and AROM
- Restore shoulder, scapular, and total arm strength, power, and endurance
- Restore neurodynamic stabilization of the shoulder
- Safe and effective return to previous level of function for occupational, sport, or desired activities

Criteria for Return to Activity

- Minimal pain with phase 4 exercises
- Full, pain free shoulder PROM andAROM
- Shoulder, scapular, and total arm strength ≥ 90% of the uninvolved side (4+/5)

OR

- Demonstrate neurodynamic stabilization of the shoulder
- Successful completion of functional capacity evaluation if physical laborer
- Quick Disability Arm Shoulder Hand Index score ≤ 15% disability

Manual Therapy

- Continue stiffness dominant glenohumeral joint mobilization (grade 3-4), as needed
- Continue other shoulder, scapular, and cervicothoracic manual therapy techniques, as needed

PROM

- Continue manual shoulder PROM and stretching, as needed

Strengthening

- Continue Phase 3 strengthening exercises
- Consider specific demands of occupational, sport, or desired activities

Neuromuscular Control

- Continue Phase 3 neuromuscular control exercises
- Consider specific demands of occupational, sport, or desired activities

Core Stabilization

- Continue incorporate core integrated exercises with strengthening and neuromuscular control progression

Weight Lifting

- Initiate traditional weight-lifting exercises
  - Educate patient to strengthen prime movers **AND** secondary stabilizers
  - Educate patient to balance anterior **AND** posterior musculature

Work Specialty Rehabilitation Program

- Transition to work re-conditioning if physical laborer
- Transition to work re-conditioning if specific occupational demands
  - Lifting requirements, overhead tasks, repetitive tasks, tool or machine work, etc.

Modalities

- Utilize cryotherapy, thermotherapy, and electrical modalities, as needed

HEP

- Establish HEP for long-term self-management

Protocol was updated by Rebecca Donnay, PT, DPT, SCS and Harold Schock III, MD on 10/12/2023.