ORTHOPEDICS & SPORTS MEDICINE
BAYCARE CLINIC

DR. JOHN AWOWALE
TOTAL SHOULDER OR REVERSE ARTHROPLASTY POST-OP THERAPY PROTOCOL

Phase 1 – Maximum Protection (0-6 weeks)
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Goals for Phase 1	Precautions for Phase 1	Criteria for Progression to Phase 2
• Minimize pain and inflammation • Protect integrity of the repair • Initiate shoulder PROM • Prevent muscular inhibition	• Check op note- if subscapularis repair or reverse arthroplasty, no forced passive or active assist IR for 12 weeks	• Minimal pain with Phase 1exercises • Passive shoulder flexion • ≥ 110° • Passive shoulder abduction • ≥ 60° • Passive shoulder internal and external rotation at 45° abduction in scapular plane to 45° each

Immobilization
- Sling immobilization with abduction pillow for 6 weeks except for bathing and therapeutic exercises as provided at prehab visit

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 4 weeks post-op**
  - Therapy 2-3 times per week to start at 4 weeks. If not able to obtain ROM as stated, please provide progress notes for review and update for ortho at 6 weeks and 12 weeks
  - 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 (limit ER to 30° if therapy were to start before week 4)

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

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Phase 1 – Maximum Protection (0-6 weeks)

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)
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Goals for Phase 2	Precautions for Phase 2	Criteria for Progression to Phase 3
• Minimize pain and inflammation • Restore full shoulder PROM • Restore full shoulder AROM • Initiate sub-maximal rotator cuff activation and neurodynamic stabilization exercises • No shoulder shrug sign with elevation AROM	• Continue Phase 1 precautions- if subscapularis repair or reverse arthroplasty, no forced passive or active assist IR for 12 weeks	• Minimal pain with Phase 2 exercises • Full shoulder PROM with minimal pain • Full shoulder AROM with minimal pain • Demonstrate neurodynamic stabilization 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

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

- 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.
    - Do **NOT** exercise through shoulder shrug sign

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

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Phase 3 – Strengthening (12+ weeks)
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Goals for Phase 3	Precautions for Phase 3	Criteria for Progression to Phase 4
• 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 • With strengthening exercises	• None	• 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, plyo-back, etc.

Phase 3 – Strengthening (12+ weeks)

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)
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Goals for Phase 4	Precautions 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	• None

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

Phase 4 – Return to Activity (18+ weeks)

Criteria for Return to Activity

- Minimal pain with phase 4 exercises
- Full, pain free shoulder PROM and AROM
- 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