St. Francis Rehabilitation Center

ISOLATED SUBACROMIAL DECOMPRESSION, EXCISION OF THE DISTAL CLAVICLE, AND/OR ACROMIOPLASTY REHABILITATION GUIDELINE WITH OR WITH OUT BICEPS TENODESIS OR TENOTOMY

St. Francis Orthopaedic Institute and St. Francis Rehabilitation Center

All information contained in this protocol is to be used as a general guideline only. Specific variations might be appropriate for each patient and might be specified by the physician. In all cases, it is acceptable to advance the program more slowly than stated. If the patient experiences excessive pain, discontinue exercise until the physician is contacted. ***Achieving and maintaining a low level of pain and inflammation and protecting the surgical repair are the guiding principles in all stages of rehabilitation, even if less passive and active range of motion are accomplished.***

SYMBOLS AND ABBREVIATIONS

AAFE, active-assistive forward elevation
AAROM, active-assistive range of motion
AASEP, assistive-to-active shoulder elevation progression
ADLs, activities of daily living
AFE, active forward elevation
AROM, active range of motion
CPM, continuous passive motion
ER, external rotation
FE, forward elevation
IR, internal rotation
MMT, manual muscle testing
NA, not applicable
PER, passive external rotation
PFE, passive forward elevation
PNF, proprioceptive neuromuscular facilitation
POD, postoperative day
POM, postoperative month
POW, postoperative week
PRN, as needed
PROM, passive range of motion
ROM, range of motion
T-Band, Thera-Band
(The Hygenic Corporation, Akron, OH)
WNL, within normal limits

Forward elevation, either active or passive, is the plane of motion in which an individual naturally lifts his or her arm that is anterior to the plane of the scapula and lateral to flexion.

STAGED GOALS FOR RANGE OF MOTION

Specific limits might be specified by the physician. These are approximate targets for range of motion. These ranges can be exceeded, but care must be taken to ensure that all ROM stretching remains comfortable.

Time	PFE	PER at 20° of Abduction	PER at 90° of Abduction	AFE
POD 1	70°	0°–20°	NA	NA
POW 1	115°	20°–40°	NA	NA
POW 3	135°–150°	35°–60°	45°–75°	NA
POW 6	155°–WNL	60°–70°	80°–WNL	120°+
POW 9	WNL	WNL	WNL	145°+
POW 12	WNL	WNL	WNL	WNL

PHASE 1

Goals

- Minimize pain and inflammatory response
- Achieve staged ROM goals
- Maximally protect the healing tissue

°Establish a stable scapula
°Patient education

POD 1 to POW 3

°Elbow, wrist, and hand AROM with no weight
°Scapular elevations and retractions (no weight) in or out of the sling
°Pendulum exercises
  °Lean over a table a comfortable amount
  °Let the arm hang down relaxed
  °Keep the body still
  °As able, move the arm in small comfortable circles only
°Upright PER in slight abduction until mild stretch and discomfort
  °10 to 15 repetitions 2-4 times per day
  °Preferred exercises
    °Sit with family member or rehabilitation provider rotating the arm
    °PER walk-around (stand with the arm supported on a table and rotate the body) (Figure 1)
°PFE in the plane of the scapula until mild stretch and discomfort
  °10 to 15 repetitions 2-4 times per day
  °Preferred exercises
    °Sit with family member or therapist lifting the arm (Figure 2)
    °Table step-back exercise (Figure 3)
    °+/- Kinex (Kinex Medical Company, LLC, Waukesha, WI) shoulder CPM machine
    °After achieving 110° to 130° of PFE, progress to self-assisted AAFE in the supine position (Figure 4) and rope-and-pulley AAFE (elbow straight and thumb up) as tolerated
°Ice for pain reduction
°Patient education
  °Primary focus of phase 1: decrease pain and inflammation and achieve staged PROM
  °Use of sling
    °As instructed by physician; typically, full time in the community and when up for more than 5 to 10 minutes at home
°Minimal use of the arm for light waist-level activities as comfortable
  °Ensure the level of pain is not increasing because of excessive use of the arm for ADLs or work

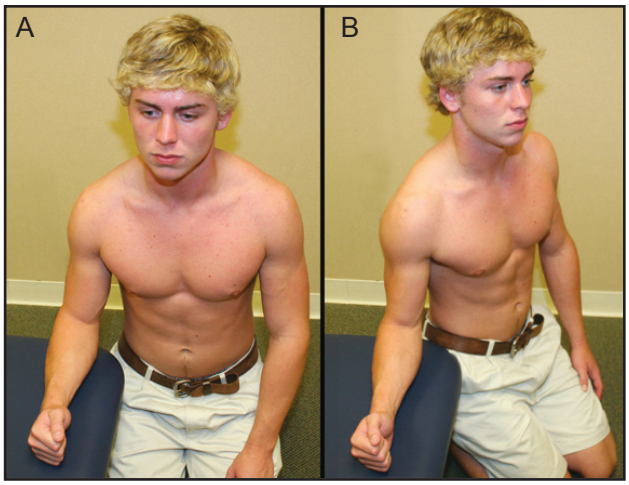

Figure 1 A and B. Passive external rotation walk-around exercise.


Figure 2. Assisted seated passive forward elevation.

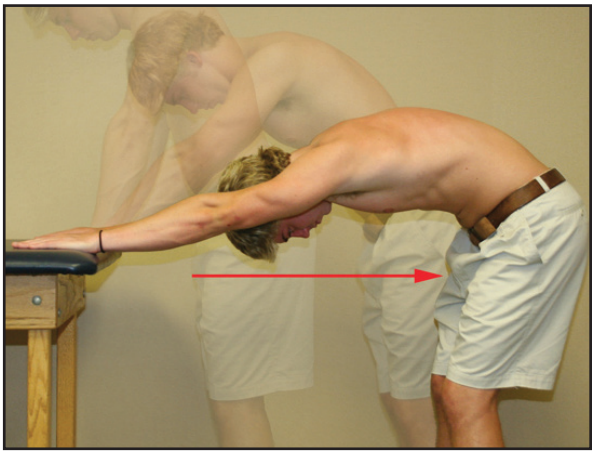
Figure 3. Table step-back exercise for passive forward elevation.

- °Sleep in a recliner
  - °3 weeks (required)
  - °6 weeks (preferred)
- °if biceps tenodesis or tenotomy active flexion of the elbow should be minimized during Phase 1. PPOM is allowed. Resistive biceps activity is not suggested during Phase 1.

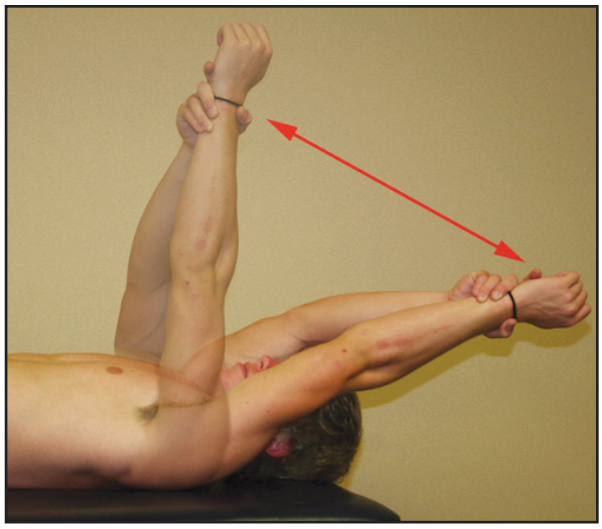

Figure 4. Self-assisted supine active-assistive forward elevation.

Adjunctive Exercises

- °Therapist-assisted supine PROM within a comfortable ROM to
  - °Decrease muscle guarding
  - °Gain patient confidence
  - °Achieve staged PROM goals
- °Cervical spine AROM
- °Moist heat before exercise (after POW 1)
- °Pain-control agents PRN
- °Aquatic therapy for AAROM progression to AROM (no swimming strokes) after incision has healed completely

Interventions To Avoid

- °Exercises that result in moderate or severe pain
- °Exercises that result in excessive guarding or splinting of muscles
- °Weighted exercises
- °Full-motion straight-plane abduction
- °Repetitive activity with affected extremity

POW 3 to POW 6

- °Achieve staged ROM goals in FE
  - °Preferred exercises
    - °Rope-and-pulley exercise (elbows remain straight in the plane of the scapula)
    - °Patient-assisted supine AAFE exercise (use unaffected arm for assistance)

Figure 5. Supine hand-behind-head stretch.

- °Achieve staged ROM goals in ER at 20° using upright exercises
- °Initiate the horizontal adduction and/or sleeper stretch PRN
- °Progressive exercises to increase ER at 90° of abduction
  - °Initiate supine hand-behind-head stretch (Figure 5)
  - °Progress to gentle ER stretching in 70° to 90° of abduction using a wand
- °Therapist-assisted PROM to achieve staged ROM goals with mobilizations PRN
- °Horizontal dusting
- °Submaximal isometrics
- °Patient education
  - °Increase frequency of stretching if difficulty achieving staged goals
  - °Sling use PRN

°Use of the arm as tolerated for waist-level activities and limited use of the arm for shoulder-level and over head ADLs

PHASE 2

Goals

°Normalize PROM and AROM
°Minimize shoulder pain
°Begin to increase strength and endurance
°Increase functional activities

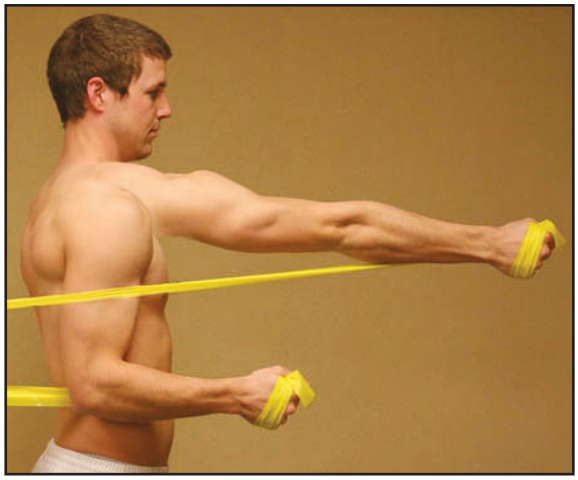
Figure 6. Forward reach with an elastic band.

POW 6 to 12

°Continue PROM in all planes as described above PRN
°Initiate functional IR AAROM and stretching PRN as tolerated
°Initiate base strengthening progression
°Includes standard rotator cuff, deltoid, and scapular strengthening program
°2 times per day at most with light resistance and increasing repetitions
°T-Band ER and IR strengthening with the arm near the side
°5- to 6-foot band length and light or no pretension in a 3- to 6-inch arc of motion
°Can use side-lying ER instead of T-Band
°T-Band forward reach (Figure 6)
°Initially, 5- to 6-foot band length and light or no pretension
°Start with the elbow bent and by the side and the band tied behind the patient
°Reach **forward** with the hand at waist level, progressing to reaching **forward** at chest level
°Do not initiate until forward reach at waist level is pain-free and can be accomplished without resistance
°If forward reach is painful or difficult, replace with a gravity-minimized exercise from the AASEP (described below) until the forward reach can be done comfortably
°Scapular strengthening emphasizing scapular retractions and scapular upward rotators
°Low-level closed chain strengthening
°No prone FE, abduction, or ER
°Initiate the AASEP as comfortable
°A stepwise progression in difficulty of strengthening exercises from PFE to active elevation of the arm (or AFE) against gravity
°Goal of the progression is to achieve pain-free full AFE
°All exercises are performed in the plane of the scapula (FE)
°If scapular or glenohumeral substitutions or pain are present, choose an easier exercise in the progression
°The order of the exercise sequence has some variability
°The goal of exercise selection is to select an exercise that is pain-free but fatiguing
°Usually not all exercises need to be performed
°Not necessary if AFE can be performed in full, pain-free ROM without substitution
°Ensure that these exercises do not increase signs and symptoms
°Exercises are divided into 3 levels of difficulty

1. Gravity-minimized exercises
    - °Horizontal dusting
        - °Perform straight ahead
        - °Perform at 20° angles medially and laterally if comfortable
    - °T-Band supine FE
        - °Must start the involved arm at 90° of elevation
        - °Pull the arm into FE
    - °Side-lying, gravity-eliminated AFE
        - °Lie on the uninvolved side
        - °Place the involved arm on an ironing board
        - °Slide the hand on the board
    - °Supine reaching progression
        - °Begin at 0° of elevation with the elbow bent and end at 90° of elevation with the elbow extended
            - °Start with the assistance of a cane or wand
            - °Progress to active (Figure 7)
            - °Can progress to using 1 to 2 pounds of weight
        - °Can progress to inclined position, continuing to reach to ceiling

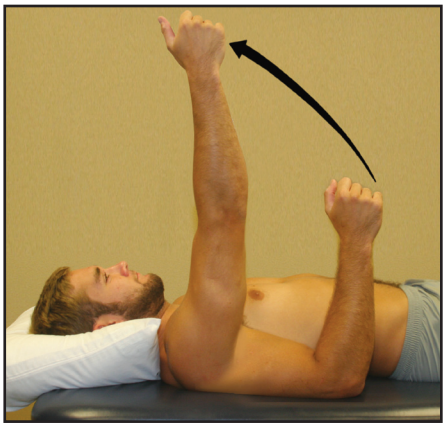

Figure 7. Supine active reaching. In all levels of the progression, reaching begins with the elbow bent and ends with the elbow straight, from 0° to 90°.

2. Assistive elevation exercises
    - °Rope-and-pulley AAFE
    - °Incline dusting (Figure 8)
    - °Standing AAFE (assistive elevation and descent via T-bar or unaffected arm)
    - °Standing AAFE and active independent eccentric lowering
    - °Wall-walk AAFE
    - °Ensure that the patient is in FE and is not in flexion
    - °Must be pain-free and natural when performing
3. Unsupported elevation exercises
    - °Overhead wall taps
    - °AFE (Figure 9)

Figure 8. Incline dusting.

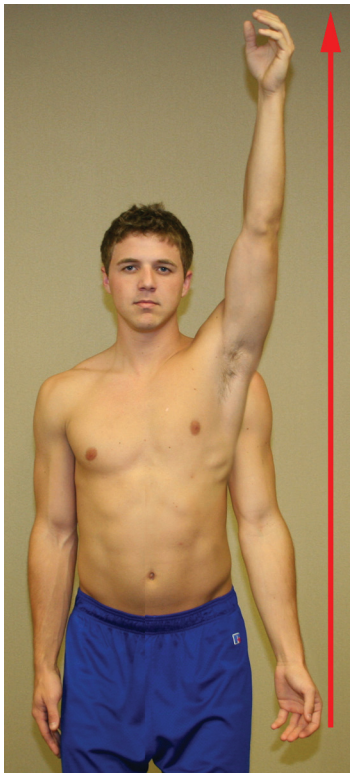

Figure 9. Active forward elevation.

- **Initiate AFE after the AASEP is complete**
  - Only perform if full or nearly full AROM is possible and comfortable
  - Eventually progress to 1 to 3 pounds for resistance, depending on body size
- Gradually progress T-Band resistance for base strengthening

Adjunctive Exercises

- Moist heat or ice
- Aquatic exercises: AAROM, AROM, and light strengthening
- Spine therapy assessment and mobilization if
  - Nonneurogenic cervical or scapular pain or
  - Limitation in end-range shoulder FE
- Trunk stabilization and strengthening
- Initiate return-to-golf progression beginning with chipping and putting
- Initiate progressive replication of moderate-intensity ADLs and work at the end of this phase

Interventions To Avoid

- No resistive biceps strenthening if biceps tenodesis or tenotomy has been performed
- Initiating base strengthening program or overhead strengthening progression before overall level of pain is low
- Exercises that significantly increase signs and symptoms
- Strengthening if PROM is significantly below staged ROM
- Heavy lifting with the elbows away from the body
- Highly repetitive rehabilitation activities with the elbow at or above chest level, including the upper extremity ergometer
- Strengthening into straight-plane abduction

PHASE 3

Goals

- **Normalize strength, endurance, and power**
- Return to full participation in ADLs, work, and recreation

POM 3 to 4

- PROM, stretching PRN, and warm-up stretching
- Continue base strengthening program
- Continue AFE with progressive but light weight
- **Discharge when functional goals are met**
  - **Many patients, especially those who are elderly or have lower demands, do not progress to any of the rehabilitation described below**
- Participate in dumbbell overhead shoulder press **PRN**
  - Must meet the criteria to start the advanced strengthening progression (described below)
  - Place hands in front of the shoulder with elbows bent and naturally reach overhead
  - Sets of 15 to 20 repetitions with 3 pounds or more 3 to 7 times per week
- Initiate the advanced strengthening progression **PRN**
  - **Strict criteria to start program**
    - **Approval of physician**
    - MMT at least 4+/5 of shoulder girdle

- °Pain-free with basic ADLs and all phase 2 strengthening activities
- °Full AFE
- °Goal of returning to participation in sports, heavy labor, or repetitive or heavy overhead work
- °Use of the following principles to develop exercises to gradually progress the patient from the current level of functioning to desired goals

°Exercise principles

- °Decrease the amount of external stabilization provided to the shoulder girdle
- °Integrate functional patterns
- °Increase speed of movements
- °Integrate kinesthetic awareness drills into strengthening activities
- °Decrease rest time to improve endurance
- °Initiate prone strengthening PRN
- °Train larger upper extremity muscles wisely

°Sample exercises

- °T-Band standing PNF-type patterns
- °T-Band IR and ER at 90° of abduction with or without arm support
- °T-Band simulation of batting, golf, or tennis forehand and backhand
- °Modified weight training

°Initiate progressive replication of demanding ADLs and work

°Initiate modified return-to-weight-training program

°Initiate plyometric program **(PRN and when approved by physician)**

°Can begin interval throwing program after 2 to 4 weeks of plyometrics **(PRN and when approved by physician)**

Interventions To Avoid

°Any rehabilitation activity that is significantly more demanding than daily or expected activities

°Any rehabilitation activity that is a moderate to large increase in demand compared with previous rehabilitation

°Any rehabilitation activity that results in a level of pain high enough that the patient needs to use modalities

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