Brian Forsythe, M.D.
Sports Medicine
Shoulder, Elbow, Knee Arthroscopy
Shoulder Replacement Surgery

Lee DeDore, PA-C, ATC
Amanda Rey, PA-C
Bridget Williams, PA-C
Deanna Cozzi, ATC

Maryellen Gebien
708-236-2782

MIDWEST ORTHOPAEDICS AT RUSH

Midwest Orthopaedics at Rush
1611 W. Harrison St, Ste 400
Chicago, IL 60612

Munster Indiana Office
9200 Calumet Avenue
Munster, IN 46321

Rush Oak Brook
2011 York Road, Ste 1500
Oak Brook, IL 60523

DISCHARGE INSTRUCTIONS & PHYSICAL THERAPY PROTOCOL: Biceps Tenodesis

- Initial recovery after shoulder surgery entails healing, controlling swelling and discomfort and regaining some shoulder motion. The following instructions are intended as a guide to help you achieve these goals until your 1st postoperative visit.

- COMFORT

  - **Cold Therapy**
    - If you elected to receive the **circulating cooling device**, this can be used continuously for the first 3 days, (while the initial post-op dressing is on). After 3 days, the cooling device should be applied 3 times a day for 20-30 minute intervals.
    - If you elected to receive the **gel wrap**, this may be applied for 20 minutes on, 20 minutes off as needed. You may apply this over the post-op dressing. Once the dressing is removed, be sure to place a barrier (shirt, towel, cloth, etc.) between your skin and the gel wrap.
    - If you elected to use **regular ice**, this may be applied for 20 minutes on, 20 minutes off as needed. You may apply this over the post-op dressing. Once the dressing is removed, be sure to place a barrier (shirt, towel, cloth, etc.) between your skin and the gel wrap.
  - **Medication**
    - **Pain Medication-** Take medications as prescribed, but only as often as necessary. Avoid alcohol and driving if you are taking pain medication.
      - You have been provided a narcotic prescription postoperatively. Use this medication sparingly for moderate to severe pain.
      - **You are allowed two (2) refills of your narcotic prescription if necessary.**
      - When refilling pain medication, weaning down to a lower potency or non-narcotic prescription is recommended as soon as possible.
      - Extra strength Tylenol may be used for mild pain.
      - Over the counter anti-inflammatories (Ibuprofen, Aleve, Motrin, etc.) shoulder be **avoided** for the first 4 weeks following surgery.

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- **Anti-coagulation medication:** A medication to prevent post-operative blood clots has been prescribed (Aspirin, Lovenox, etc.) This is the only medication that MUST be taken as prescribed until directed to stop by Dr. Forsythe.
- **Nausea Medication –** Zofran (Odansetron) has been prescribed for nausea. You may take this as needed per the prescription instructions.
- **Constipation Medication -** Colace has been prescribed for constipation. Both your pain medication and the anesthesia can cause constipation. Take this as needed.

- **Driving –** Driving is NOT permitted as long as the sling is necessary.

❖ ACTIVITIES

- You are immobilized with a sling and abductor pillow, full time, for approximately the first 6 weeks. Your doctor can tell you when you can discontinue use of the sling at your 1st postoperative visit. The sling may be removed for exercises.
- **Range-of-Motion Exercises** –
  - While your sling is off you should PASSIVELY flex and extend your elbow and wrist as tolerated **with assistance from your opposite hand** – (3x a day for 15 repetitions) to avoid elbow stiffness
  - ***IMPORTANT*:** Avoid any resistive twisting motions of your wrist and forearm. These include opening jars, using a screwdriver, opening doorknobs, wringing out towels, etc. **These motions may put you at risk of injuring your biceps tenodesis.**
  - You can also shrug your shoulders.
  - Ball squeezes should be done in the sling (3x a day for 15 squeezes).
  - You may NOT move your shoulder by yourself in certain directions. NO active flexion (lifting arm up) or abduction (lifting arm away from body) until Dr. Forsythe or your therapist gives permission.
  - Physical therapy will begin approximately 1-2 weeks after surgery. Make an appointment with a therapist of your choice for this period of time. You have been given a prescription and instructions for therapy. Please take these with you to your first therapy visit.
  - Athletic activities such as throwing, lifting, swimming, bicycling, jogging, running, and stop-and-go sports should be avoided until cleared by Dr. Forsythe.

❖ WOUND CARE

- **Incision –** You may have a small incision in your armpit that is sealed with a special adhesive. Do not peel away or pick at the incision. When allowed to shower, you can cover this area with a band-aid. Do not soak the area.

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- **Bathing -** Tub bathing, swimming, and soaking of the shoulder **should be avoided** until allowed by your doctor - Usually 2-3 weeks after your surgery. Keep the dressing on, clean and dry for the first 3 days after surgery.
  - You may shower 3 days after surgery with WATERPROOF band-aids on. Apply new band-aids after showering.
- **Dressings -** Remove the dressing 3 days after surgery. You may apply band-aids to the small incisions around your shoulder. Keep incisions clean and dry.

❖ EATING

- Your first few meals, after surgery, should include light, easily digestible foods and plenty of liquids, since some people experience slight nausea as a temporary reaction to anesthesia

❖ CALL YOUR PHYSICIAN IF:

- Pain in your shoulder persists or worsens in the first few days after surgery.
- Excessive redness or drainage of cloudy or bloody material from the wounds (Clear red tinted fluid and some mild drainage should be expected). Drainage of any kind 5 days after surgery should be reported to the doctor.
- You have a temperature elevation greater than 101°
- You have pain, swelling or redness in your arm or hand.
- You have numbness or weakness in your arm or hand.

❖ RETURN TO THE OFFICE

- Your first return to our office will likely be within the first 1-2 weeks after your surgery. You can find your appointment date and time for the first post-operative visit in this folder. If it needs to be changed, please contact the office.

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REHABILITATION PROGRAM:
Biceps Tenodesis

NOTE: The following instructions are intended for your physical therapist and should be brought to your first physical therapy visit.

- A biceps tenodesis procedure involves cutting of the long head of the biceps just prior to its insertion on the superior labrum and then anchoring the tendon along its anatomical course more distally along the humerus. There are a number of different anchoring techniques that surgeons are currently using. We recommend the treating therapist understand the technique their referring surgeon typically uses. A biceps tenodesis is typically done when there is significant chronic long head of the biceps dysfunction either along its length or from its labral attachment. If the treating physical therapist needs to learn more about biceps tenodesis and rehabilitation, we recommend reading:

  - Krupp RJ. Kevern MA. Gaines MD. Kotara S. Singleton SB. Long Head of the Biceps Tendon Pain: Differential Diagnosis and Treatment. JOSPT. 2009; 39(2): 55-70.

- If further information regarding the various biceps tenodesis surgical techniques is needed the treating therapist should reference:

  - Mazzocca AD, Bicos J, Santangelo S, Romeo AA, Arciero RA. The biomechanical evaluation of four fixation techniques for proximal biceps tenodesis. Arthroscopy. 2005; 21(11): 1296-306.

- **Phase I – Passive Range of Motion Phase (starts approximately post op weeks 1 - 2)**

  - **Goals:**
    - Minimize shoulder pain and inflammatory response
    - Achieve gradual restoration of passive range of motion (PROM)
    - Enhance/ensure adequate scapular function
  - Precautions/Patient Education:
    - No active range of motion (AROM) of the elbow
    - No excessive external rotation range of motion (ROM) / stretching. Stop when you feel the first end feel.
    - Use of an abduction sling to minimize activity of biceps
    - Ace wrap upper forearm as needed for swelling control

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- No lifting of objects with operative shoulder.
- Keep incisions clean and dry
- No friction massage to the proximal biceps tendon / tenodesis site
- Patient education regarding limited use of upper extremity despite the potential lack of or minimal pain or other symptoms

❖ **Activity:**
- Shoulder pendulum hang exercise
- PROM elbow flexion/extension and forearm supination/pronation
- AROM wrist/hand
- Begin shoulder PROM all planes to tolerance /do not force any painful motion
- Scapular retraction and clock exercises for scapula mobility progressed to scapular isometric exercises
- Ball squeezes
- Sleep with sling as needed supporting operative shoulder, place a towel under the elbow to prevent shoulder hyperextension
- Frequent cryotherapy for pain and inflammation
- Patient education regarding postural awareness, joint protection, positioning, hygiene, etc.
- May return to computer based work

❖ Milestones to progress to phase II:
- Appropriate healing of the surgical incision
- Full PROM of shoulder and elbow
- Completion of phase I activities without pain or difficulty

Phase II – Active Range of Motion Phase (starts approximately post op week 4)

❖ **Goals:**
- Minimize shoulder pain and inflammatory response
- Achieve gradual restoration of AROM
- Begin light waist level functional activities
- Remove the pillow from the sling at the end of postoperative week 4
- Wear simple sling outside of the house for weeks 5 and 6. You may wean out of simple sling at home during these two weeks
- Return to light computer work

❖ **Precautions:**
- No lifting with affected upper extremity
- No friction massage to the proximal biceps tendon / tenodesis site

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- **Activity:**
  - Begin gentle scar massage and use of scar pad for anterior axillary incision
  - Progress shoulder PROM to active assisted range of motion (AAROM) and AROM all planes to tolerance
  - Lawn chair progression for shoulder
  - Active elbow flexion/extension and forearm supination/pronation (No resistance)
  - Glenohumeral, scapulothoracic, and trunk joint mobilizations as indicated (Grade I - IV) when ROM is significantly less than expected. Mobilizations should be done in directions of limited motion and only until adequate ROM is gained.
  - Begin incorporating posterior capsular stretching as indicated
  - Cross body adduction stretch
  - Side lying internal rotation stretch (sleeper stretch)
  - Continued Cryotherapy for pain and inflammation
  - Continued patient education: posture, joint protection, positioning, hygiene, etc.

- Milestones to progress to phase III:
  - Restore full AROM of shoulder and elbow
  - Appropriate scapular posture at rest and dynamic scapular control with ROM and
  - functional activities
  - Completion of phase II activities without pain or difficulty

Phase III - Strengthening Phase (starts approximately post op week 6-8)

- **Goals:**
  - Normalize strength, endurance, neuromuscular control
  - Return to chest level full functional activities

- **Precautions:**
  - Do not perform strengthening or functional activities in a given plane until the patient has near full ROM and strength in that plane of movement
  - Patient education regarding a gradual increase to shoulder activities

- **Activity:**
  - Continue A/PROM of shoulder and elbow as needed/indicated
  - Initiate biceps curls with light resistance, progress as tolerated
  - Initiate resisted supination/pronation
  - Begin rhythmic stabilization drills
  - External rotation (ER) / Internal Rotation (IR) in the scapular plane
  - Flexion/extension and abduction/adduction at various angles of elevation

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- Initiate balanced strengthening program
  - Initially in low dynamic positions
  - Gain muscular endurance with high repetition of 30-50, low resistance 1-3lbs)
  - Exercises should be progressive in terms of muscle demand / intensity, shoulder elevation, and stress on the anterior joint capsule
  - Nearly full elevation in the scapula plane should be achieved before beginning elevation in other planes
  - All activities should be pain free and without compensatory/substitution patterns
  - Exercises should consist of both open and closed chain activities
  - No heavy lifting should be performed at this time
- Initiate full can scapular plane raises with good mechanics
- Initiate ER strengthening using exercise tubing at 30° of abduction (use towel roll)
- Initiate sidelying ER with towel roll
- Initiate manual resistance ER supine in scapular plane (light resistance)
- Initiate prone rowing at 30/45/90 degrees of abduction to neutral arm position
- Begin subscapularis strengthening to focus on both upper and lower segments
- Push up plus (wall, counter, knees on the floor, floor)
- Cross body diagonals with resistive tubing
- IR resistive band (0, 45, 90 degrees of abduction
- Forward punch
- Continued cryotherapy for pain and inflammation as needed
- Milestones to progress to phase IV:
- Appropriate rotator cuff and scapular muscular performance for chest level
- activities
- Completion of phase III activities without pain or difficulty

Phase IV – Advanced Strengthening Phase (starts approximately post op week 10)

❖ **Goals:**
- Continue stretching and PROM as needed/indicated
- Maintain full non-painful AROM
- Return to full strenuous work activities
- Return to full recreational activities

❖ **Precautions:**
- Avoid excessive anterior capsule stress
- With weight lifting, avoid military press and wide grip bench press.

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- **Activity:**
  - Continue all exercises listed above
    - Progress isotonic strengthening if patient demonstrates no compensatory strategies, is not painful, and has no residual soreness
  - Strengthening overhead if ROM and strength below 90 degree elevation is good
  - Continue shoulder stretching and strengthening at least four times per week
  - Progressive return to upper extremity weight lifting program emphasizing the larger, primary upper extremity muscles (deltoid, latissimus dorsi, pectoralis major)
    - Start with relatively light weight and high repetitions (15-25)
  - May initiate pre injury level activities/ vigorous sports if appropriate / cleared by MD

- **Milestones to return to overhead work and sport activities:**
  - Clearance from MD
  - No complaints of pain
  - Adequate ROM, strength and endurance of rotator cuff and scapular musculature for task completion
  - Compliance with continued home exercise program