

Biceps Tenodesis

With and without

Regeneten Bioinductive Implant: (Patch)

Rehabilitation Protocol

Paul B. Roache MD



Phase IA: Home Exercise program Immediate post-op phase (day 2-14days after surgery, prior to starting ROM Kit and PT)

Goals:

1. Protect the surgical site
2. Ensure wound healing
3. Diminish pain and inflammation
4. Prevent stiffness and regain motion

Precautions:

- No lifting of objects . Cell phone ok
- Avoid shoulder extension (reaching behind you)
- No supporting of body weight by hands(pushing up from bed or chair)
- No active ROM elevating the shoulder
- No active Biceps contraction more than cell phone weight

Activities:

1. Sling: Use your sling for 24-48 hours. Remove the sling 4 or 5 times a day to do pendulum exercises. You will need to sleep with your sling and pillow in place. It is often more comfortable to sleep in a recliner or on several pillows.
2. Use of the affected arm: You may use your hand on the affected arm in front of your body at waist level. It is all right for you to flex your arm at the elbow without force or without lifting a weight. Continue to move your elbow wrist and hand to help circulation and motion.
3. Continue to ice on a regular basis. At least 20 minutes at a time, 4-5 times per day.
4. Your first therapy appointment should be by 5-7 weeks after surgery
5. Home exercise program from day 2 to 14 is Pendulum and elbow and wrist exercises.

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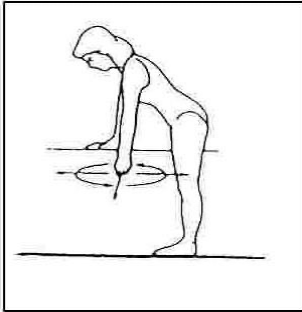
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Pendulum exercise-modified

Remove your sling, bend over at the waist and let the arm hang down. Without using your body to initiate movement, swing the arm gently forward and backward and in a circular motion. Using a small circle the size of a small dinner plate.



Phase 1B: 10-14 days postop

Continue Home exercise program. Work the Forward flexion and scapula

Exercises at home:

Program: 7 days per week, 4-5 times per day

Pendulum exercises (small circles)	1-2 sets	20-30 reps
Table Stretch in forward flexion (gentle)	1 set	2 min stretch
Scapular retraction	1-2 sets	5-10 reps
Shoulder shrug	1-2 sets	10-15 reps

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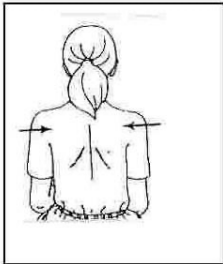
Table Stretch (not table Slide)

Hands wider than shoulder width, gently push palms down on table and lean forward. You may need to slide the chair back to give you room to stretch. Hold for 90 to 120 secs. Should have stretch discomfort & only a little pain.



Shoulder blade pinches and Shoulder Shrugs

While standing, pinch shoulder blades backward and together. Can also be done with hands on table before table stretch .
In same position Raise Shoulder blades to Ears Shrugging Shoulders



Phase 1C: at 3-4 weeks postop

Continue Home exercise program. Work the Forward flexion and rotation planes.

***Avoid ABD plane to prevent edge abrasion on implant. (if Regeneten implanted)**

Home exercise program (at least 3 x's a day, no more than 5 x's a day)

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Exercises with equipment

1. Pendulum exercises (small circles)	1-2 sets	2 mins
2. Table Stretch in forward flexion	1 set	2 min stretch
3. Pulley forward flexion	1-2 sets	10-20 reps
4. Supine passive arm forward elevation	1-2 sets	5-10 reps
5. Supine or standing external rotation	1-2 sets	10-15 reps
With shoulder wand		
6. Scapular retraction	1-2 sets	5-10 reps
7. Shoulder shrug	1-2 sets	10-15 reps

Pulley passive forward flexion

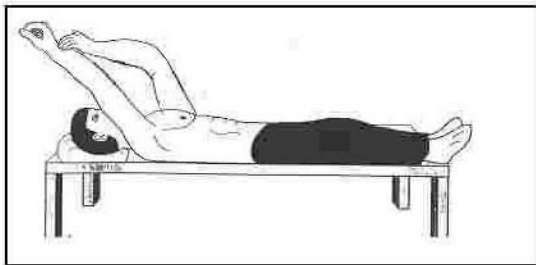
Seated in a chair with your back against the door and the pulley overhead
 Use the the unaffected arm to pull down on the handle and passive elevate
 The affected arm overhead. In the beginning start with the affected are bent
 At the elbow to make it easier.



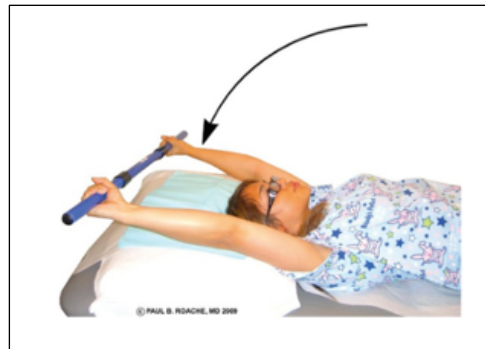
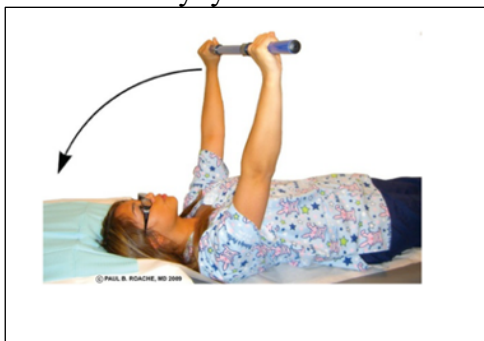
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Supine passive forward elevation

Lie on your back. Hold the affected arm at the elbow with the opposite hand. Assisting with the opposite arm, lift the operated arm upward, as if to bring the arm overhead. Slowly lower the arm back to the bed.



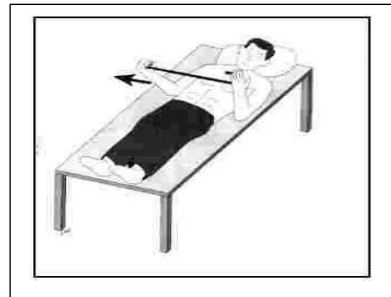
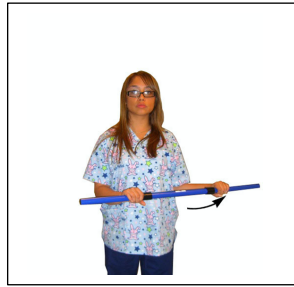
Alternatively you can use the shoulder wand to perform as well.



Supine (or standing) external rotation

Lie on your back or stand with back against the wall. Keep the elbow of the operated arm against your side with the elbow bent 90 degrees. Using a cane or a long stick in the opposite hand, push against the hand of the operated arm so that the operated arm rotates outward. Hold for 10 seconds, relax and repeat. The amount of allowed external rotation will be specified after surgery.

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Phase II: Intermediate phase- motion recovery (4-5 weeks post-op)

Physical therapy will begin at this point

PT should not hurt. Do not force painful motions.

Goals:

1. Restore non-painful range of motion (ROM) Passive first, advance to Active assist
2. Retard muscular atrophy
3. Decrease pain/inflammation
4. Improve postural awareness
5. Minimize stress to healing structures
6. Independent with activities of daily living (ADLs)
7. Prevent muscular inhibition
8. Begin to Wean from sling at home (but continue sling away from home till week 6)

Precautions:

- No lifting of objects over 2lbs. Coffee mug ok
- No supporting of body weight by hands(pushing up from bed or chair)
- Limit active ROM elevating the shoulder to the front
- Avoid lifting the arm away from the side
- Do not use the sling except if occasionally you need to rest the arm.
- No biceps contraction beyond 2lbs

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Activities:

1. Sling: You should now have weaned out of using your sling at home. It is a good idea, however, to continue to use your sling when you are away from your house to “send a signal” that others should not hit your shoulder and to prevent reaching and pulling
2. Continue to ice on a regular basis. At least 20 minutes at a time, 4-5 times per day as needed for discomfort.
3. Unless instructed otherwise it should be okay to drive at this point.
4. You can actively use of your arm for daily living: bathing, dressing, driving typing on a computer, eating and drinking.
5. No lifting over 2 lbs. Coffee Mug is ok.
6. No pushing up from bed or chair or pulling heavy doors or hand rails.

Range of Motion:

- PROM (non-forceful flexion and abduction)
- Active assisted range of motion (AAROM)
- AROM
- Internal rotation to the back recovery
- Pulley motion recover exercises
- shoulder wand exercises
- Table stretch

Strengthening:

- Isometrics: scapular musculature, deltoid,
- no cuff or biceps strengthening yet

Manual treatment:

- Joint mobilization to improve/restore arthrokinematics if indicated
- Joint mobilization for pain modulation

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Phase III: Active strengthening phase (7-8 weeks and beyond)

Goals:

- Improve shoulder strength, power, and endurance
- Initiate Biceps strengthening
- Improve neuromuscular control
- Prepare patient/athlete to begin to throw, and perform similar overhead activities or other sport specific activities
- Prepare worker to return to work functions

Precautions:

Caution with lifting and repetitive motions, progress as tolerated
Advance Biceps strengthening as discomfort and cramping allow.

Criteria for progression to this phase:

- Full painless ROM
- No pain or minimal tenderness on examination

Once patient has pain free(or very little pain) full ROM and no tenderness, may progress to the following:

Strengthening exercises:

- Initiate isotonic program with dumbbells
- Strengthen shoulder musculature- isometric, isotonic, Proprioceptive Neuromuscular Facilitation (PNF)
- Strengthen scapulothoracic musculature- isometric, isotonic, PNF

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- Initiate upper extremity endurance exercises

Exercises:

- Continue dumbbell strengthening (rotator cuff and deltoid)
- Biceps dumbbell strengthening
- Progress theraband exercises to 90/90 position for internal rotation and external rotation

(slow/fast sets)

- Theraband exercises for scapulothoracic musculature and biceps
- Plyometrics for rotator cuff
- PNF diagonal patterns
- Isokinetics
- Continue endurance exercises (UBE)
- Diagonal patterns

Phase IV:Return to work/Sport 12-14 weeks and beyond:

Goals:

- Improve strength, power, and endurance
- patient/athlete to begin to throw, and perform similar overhead activities or other sport specific activities
- worker to return to work functions

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Precautions:

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Strengthening exercises:

Continue Rotator cuff specific exercises

Advance as tolerated in gym exercises