Protocol E4
Physical or Occupational Therapy Protocol for
Distal Biceps Tendon Repair or Reattachment

Phase I: Protection Phase (weeks 0-6)

GOALS:
- Protect the distal biceps repair and allow tendon-to-bone healing.
- Prevent upper extremity joint stiffness.
- Allow passive flexion and active extension of the elbow within hinged orthosis.

ANCILLARY MEASURES:
- Use pain medications as needed.
- Elbow and wrist are immobilized in long-arm posterior splint first week postop.
- Long-arm hinged orthosis is applied by therapist at one week postop visit. During weeks 2-6, progressive elbow extension is permitted by adjusting the orthosis biweekly. Elbow extension is first blocked at 90 degrees, then 60 degrees, then 30 degrees and then full elbow extension is permitted.

EXERCISES:
- **Finger and Wrist ROM:** Active flexion and extension of the wrist and fingers on the operated side is encouraged. Gripping exercises (rubber ball squeezes) are allowed.
- **Shoulder Range of Motion:** Begin progressive active shoulder range of motion in all planes. Repeat 3 times per day, 10 repetitions.
- **Passive Elbow Flexion:** With the unoperated hand, passively bend the operated elbow up in flexion. Complete 10 repetitions, 5-6 times per day.
- **Active Elbow Extension:** After the elbow has been passively flexed, then actively extend the operated elbow as far as the hinged brace will allow. Complete 10 repetitions, 5-6 times per day.
- **Forearm Pronation and Supination:** Begin to actively rotate the forearm at 3 weeks postop. Alternately rotate the forearm to bring the palm upward, then palm downward.

PRECAUTIONS:
- NO lifting or pushing off with the operated arm.
- NO contraction of the biceps is permitted.
- Avoid shoulder stiffness by daily shoulder ROM exercises.
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Phase II: Active Motion Phase (weeks 7-12)

GOALS:
• Begin full active elbow range of motion and full supination.
• Return to light activities of daily living.

ANCILLARY MEASURES:
• Discontinue the long-arm hinged orthosis.
• Gentle scar massage as needed.
• Use pain medications as needed.

EXERCISES:
• Continue all Phase I exercises for Shoulder, Wrist, Fingers.
• Active Elbow Range of Motion: Begin unrestricted active and active-assisted elbow range of motion (ROM) as tolerated. Full elbow ROM by 8 weeks postop is expected.
• Biceps isometrics: Gentle biceps isometric contractions may be initiated. With the operated elbow in stable position and flexed 90 degrees, tighten the biceps muscle, hold for 5 seconds, then relax. Complete 10 repetitions, 3-4 times per day.
• Wrist flexion stretch: Bring operated arm straight out in front with elbow extended, palm downward. With the opposite hand, flex the wrist downward and gently stretch the muscles on the back of the forearm. Hold for 10 seconds. Repeat 3-4 times per day.
• Wrist extension stretch: Bring operated arm straight out in front with elbow extended, palm downward. With the opposite hand, extend the wrist upward and stretch the muscles on the palm side of the forearm. Hold for 10 seconds. Repeat 3-4 times per day.

PRECAUTIONS:
• Avoid elbow injury.
• Do not lift or push off with the operated extremity.
• No sports activity is permitted.
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Phase III: Strengthening Phase (weeks 13-26)

GOALS:
• Maintain full elbow ROM.
• Improve upper extremity strength.

ANCILLARY MEASURES:
• Scar massage if needed.
• Limit lifting with operated extremity.

EXERCISES:
• Continue Phase I and II exercises.
• Wrist flexion curl: Sit with operated forearm resting on a table, hand extended over the edge of the table. Grasp a one pound dumbbell weight. With palm up, flex your wrist, curling the weight inward. Hold for 2 seconds, 10 repetitions.
• Wrist extension curl: Sit with operated forearm resting on a table, hand extended over the edge of the table. Grasp a one pound dumbbell weight. With palm downward, extend your wrist backward. Hold for 2 seconds, 10 repetitions.
• Biceps curl: Grasp a 1-3 pound dumbbell weight. With arm held in front of body, elbow supported and palm upward, flex your operated elbow to tighten the biceps muscle. Hold for 5 seconds, then relax. Complete 10 repetitions.
• Triceps curl: Grasp a 1-3 pound dumbbell weight. Raise the operated arm up overhead with the elbow supported by the opposite hand and flexed 90 degrees. Then extend the elbow, raising the weight fully overhead by tightening the triceps. Hold for 5 seconds, then relax. Complete 10 repetitions.

PRECAUTIONS:
• Avoid elbow injury. Strengthening exercises should be pain free.
• No sports activity or heavy lifting until 27+ weeks postop.
• Therapist should discontinue treatment and send patient back to our office if strengthening program causes elbow pain.