



New England Shoulder and Elbow Center

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## ULNAR COLLATERAL LIGAMENT REPAIR WITH AUGMENTATION

The following are guidelines for UCL REPAIR with Internal Brace Augmentation. Progression is both criteria based and patient specific. Phases and time frames are designed to give the clinician a general sense of progression. The rehabilitation program following UCL Repair must take into account and allow for the healing of surgically repaired tissue. The program should balance the aspects of tissue healing and appropriate interventions to restore ROM, strength, and function. Other factors may alter the guidelines; therefore, follow physician's modifications as prescribed.

### POST – OPERATIVE PHASE I (0-10 DAYS)

#### **\*\*MAXIMUM PROTECTION PHASE\*\***

#### GOALS:

- Protect surgical repair
- Decrease pain/ inflammation

#### TREATMENT RECOMMENDATIONS:

- Splint Immobilization in 90 degrees of flexion and wrist/forearm pronation
- Cryotherapy
- Gripping exercises
- Wrist Range of Motion
- Shoulder Isometrics

#### PRECAUTIONS:

- Maintain splint and sling immobilization (Sling as directed by MD)

#### Emphasize:

- PROTECTING SURGICAL REPAIR
- PAIN CONTROL
- Patient compliance with splint/sling immobilization

Patient Name: \_\_\_\_\_

Physician's Signature: \_\_\_\_\_ M.D. Date: \_\_\_ / \_\_\_ / \_\_\_\_\_



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## ULNAR COLLATERAL LIGAMENT REPAIR WITH AUGMENTATION

### POST – OPERATIVE PHASE II (10 DAYS to 6 WEEKS)

#### \*\*MODERATE PROTECTION PHASE\*\*

#### GOALS:

- Protect surgical repair
- Decrease pain/ inflammation
- Improve passive Range of Motion

#### TREATMENT RECOMMENDATIONS:

- Hinged Elbow brace at
  - 2 weeks: elbow 30-110°
  - 3 weeks: elbow 10-125°
  - 4 weeks: elbow 0-145°
- Exercises
  - 2 weeks: active ROM shoulder, scapular isometrics
  - 3 weeks: Elbow AROM progress to 10-125° Begin wall squats, lateral slide, single leg squats, leg press (no use of operative arm) hip and core exercise (no use of operative arm).
  - 4-6 weeks:
    - Progress AROM and restore full ROM, Initiate wrist flexion and elbow flexion movements against resistance
    - Start Throwers Ten Program (Please see below)

#### MINIMUM CRITERIA FOR ADVANCEMENT TO NEXT PHASE:

- Must have 0-145°
- Minimal pain
- Good manual muscle testing of: elbow flexion/extension; wrist flexion; shoulder internal and external rotation, scapular abduction

#### Emphasize:

- PROTECTING SURGICAL REPAIR

Patient Name: \_\_\_\_\_

Physician's Signature: \_\_\_\_\_ M.D. Date: \_\_\_ / \_\_\_ / \_\_\_



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## ULNAR COLLATERAL LIGAMENT REPAIR WITH AUGMENTATION

### POST – OPERATIVE PHASE III (6 WEEKS- 8 WEEKS) \*\*EARLY STRENGTHENING PHASE\*\*

#### GOALS:

- Eliminate/ minimize pain and inflammation
- Restore full PROM
- Gradual return to light ADLs
- Improve strength/ flexibility

#### TREATMENT RECOMMENDATIONS:

- Discontinue Brace at 6 weeks
- Exercises
  - Starting Week 6:
    - Initiate Advanced Throwers Ten program
    - Initiate 2-hand plyometrics: chest pass, side- to-side throw, and overhead pass
    - Initiate prone plank exercise
  - Starting Week 8:
    - Progress to 1-hand plyometrics: 90°/90° ball throw, 0° ball throw
    - Continue with Advanced Throwers Ten program
    - Initiate side plank with shoulder ER strengthening exercise AAROM exercises, joint mobilization by PT

#### PRECAUTIONS:

- No aggressive weight lifting until 12 weeks post operatively
- No chest flies or lifts stressing ligament
- Avoid any valgus stress on elbow until minimum 2 months post operatively

#### MINIMUM CRITERIA FOR ADVANCEMENT TO NEXT PHASE:

- Must have full, nonpainful elbow AROM
- no pain or tenderness
- minimum 70% strength in shoulder and elbow compared to opposite side
- appropriate clinical examination
- completion of Phase II exercises without difficulty or pain.

Patient Name: \_\_\_\_\_

Physician's Signature: \_\_\_\_\_ M.D. Date: \_\_\_ / \_\_\_ / \_\_\_\_\_



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## ULNAR COLLATERAL LIGAMENT REPAIR WITH AUGMENTATION

### POST – OPERATIVE PHASE IV (9-14 weeks)

#### \*\*LATE STRENGTHENING PHASE\*\*

#### GOALS:

- Eliminate/ minimize pain and inflammation
- Restore full AROM out of brace
- Return to ADLs
- Improve strength/ flexibility

#### TREATMENT RECOMMENDATIONS:

- Exercises
  - Week 9: Continue all strengthening exercises, Advanced Throwers Ten program, plyometrics
  - Starting Week 10:
    - Seated chest-press machine
    - Seated row machine
    - Biceps/triceps machine or cable strengthening
    - Interval hitting program
  - Starting Week 12 (if meets Criteria for Starting Interval Throwing):
    - Begin interval throwing program progressing from 45ft to 90 ft.
    - Distance level may be increased ONLY when:
      - No pain or stiffness while throwing
      - No pain or stiffness after throwing
      - Strength is maintained and fatigue is minimal after completion of final set
      - Throwing motion is effortless with appropriate mechanics
      - Accuracy and throwing lines are consistent

#### MINIMUM CRITERIA FOR ADVANCEMENT TO NEXT PHASE:

- Must have full elbow, wrist, and shoulder ROM
- No pain or tenderness
- functional or isokinetic test that fulfills criteria for goal activity
- completion of Phase III exercises without difficulty
- appropriate clinical examination

Patient Name: \_\_\_\_\_

Physician's Signature: \_\_\_\_\_ M.D. Date: \_\_\_ / \_\_\_ / \_\_\_\_\_

## ULNAR COLLATERAL LIGAMENT REPAIR WITH AUGMENTATION

### POST – OPERATIVE PHASE V (14+ weeks)

#### \*\*LATE STRENGTHENING PHASE\*\*

#### GOALS:

- Eliminate/ minimize pain and inflammation
- Restore full AROM out of brace
- Return to ADLs
- Improve strength/ flexibility

#### TREATMENT RECOMMENDATIONS:

- Exercises
  - Starting Weeks 14 – 16:
    - Continue Phase III exercises
    - Continue and progress interval throwing program.
    - Athletes may progress through ITP at different rates/paces
    - Expected to complete throws of 0 to 27 m (0-90 ft) within 3 weeks of starting ITP and throws of 0 to 37 m (120 ft) within 8 weeks
  - Starting Weeks 16 to 20
    - Continue ROM and stretching programs
    - Continue Advanced Throwers Ten program
    - Continue plyometrics
    - Initiate ITP phase 2 (off the mound) when phase 1 is complete and athlete is ready
    - Pitchers may begin mound throwing after completing 120 ft distance. NO flat ground pitching. Start with catcher moved forward when throwing from the mound and progress to full distance.
  - Weeks 20+
    - Initiate gradual return to competitive throwing
    - Perform dynamic warm-ups and stretches
    - Continue Advanced Throwers Ten program
    - Return to competition decision based on physician and rehabilitation team assessment
  - Return to play may occur when all conditions are met:
    - Trunk, scapula, shoulder motions are normal
    - Normal trunk, scapular, shoulder, and arm muscle strength are normal
    - No pain while throwing
    - Throwing balance, rhythm and coordination are normal

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## ULNAR COLLATERAL LIGAMENT REPAIR WITH AUGMENTATION

### Exercises in the Throwers Ten Exercise Program

- Diagonal-pattern D2 extension
- Diagonal-pattern D2 flexion
- Shoulder external rotation at 0° of abduction
- Shoulder internal rotation at 0° of abduction
- Shoulder abduction to 90°
- Shoulder scapular abduction, external rotation (“full cans”)
- Side-lying shoulder external rotation
- Prone shoulder horizontal abduction
- Prone shoulder horizontal abduction (full external rotation, 100° of abduction)
- Prone rowing
- Prone rowing into external rotation
- Press-ups
- Push-ups
- Elbow flexion
- Elbow extension
- Wrist extension
- Wrist flexion
- Wrist supination
- Wrist pronation

All exercises performed against resistance to improve strength.

#### Full description:

Wilk KE, Arrigo CA, Hooks TR, Andrews JR. Rehabilitation of the overhead throwing athlete: there is more to it than just external rotation/internal rotation strengthening. PM R. 2016; 8: S78– S90.

Patient Name: \_\_\_\_\_

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