

Ulnar Collateral Ligament (UCL) Reconstruction Protocol

Dr. Michael Chiu, MD
Illinois Bone and Joint Institute
Phone: (847)870-6100
Fax: (847)870-8159

IMMEDIATE POSTOPERATIVE PHASE

Goals: Protect graft, Protect healing tissue, Decrease pain/inflammation, Retard muscular atrophy

Week 1

- Brace: Posterior splint at 90 degrees elbow flexion
- Wrist AROM ext/flex immediately postoperative
- Knee ROM day 1
- Gripping exercises
- Wrist ROM
- Cryotherapy: To elbow joint and to graft site at wrist

Week 2

- Brace: Elbow ROM 25-100 degrees (Gradually increase ROM – 5 degrees, Ext/10 degrees of Flex per week)
- Continue all exercises listed above
- Initiate elbow extension isometrics
- Continue wrist ROM exercises
- Initiate light scar mobilization over graft harvest incision
- Cryotherapy to both elbow and graft site

Week 3

- Brace: Elbow ROM 15-115 degrees
- Continue all exercises listed above
- Elbow ROM in brace
- Initiate active ROM Wrist and Elbow (No resistance)
- Initiate light wrist flexion stretching
- Initiate active ROM shoulder:
- ER/IR tubing
- Elbow flex/extension
- Lateral raises
- Initiate light scapular strengthening exercises
- May incorporate stationary bike for lower extremity

INTERMEDIATE PHASE (Week 4-7)

Goals: Gradual increase to full ROM, Promote healing of repaired tissue, Regain and improve muscular strength, Restore full function of graft site



Week 4

- Brace: Elbow ROM 0-125 degrees
- Begin light resistance exercises for arm (1 lb)
- Wrist curls, extensions, pronation, supination
- Elbow extension/flexion
- Progress shoulder program emphasize rotator cuff and scapular strengthening
- Initiate shoulder strengthening with light dumbbells

Week 5

- ROM: Elbow ROM 0-135 degrees
- Discontinue brace
- Continue all Exercises: Progress all shoulder and UE exercises

Week 6

- AROM: 0-145 degrees without brace or full ROM
- Progress elbow strengthening exercises
- Exercises: Initiate Thrower's Ten Program
- Initiate shoulder external rotation strengthening

Week 7

- Progress Thrower's Ten Program (progress weights)
- Initiate PNF diagonal patterns (light)

ADVANCED STRENGTHENING PHASE (Week 8-14)

Goals: Increase strength, power, endurance, Maintain full elbow ROM, Gradually initiate sporting activities

Week 8

- Initiate eccentric elbow flexion/extension
- Continue isotonic program: forearm & wrist
- Continue shoulder program - Thrower's Ten Program
- Manual resistance diagonal patterns
- Initiate plyometric exercise program (2 hand plyos close to body only)
 - Chest pass
 - Side throw close to body
- Continue stretching calf and hamstrings

Week 10

- Continue all exercises listed above
- Program plyometrics to 2 hand drills away from body
- Side to side throws
- Soccer throws
- Side throws

Week 12-14

- Continue all exercises
- Initiate isotonic machines strengthening exercises (if desired)
- Bench press (seated)
- Lat pull down
- Initiate golf, swimming
- Initiate interval hitting program

RETURN TO ACTIVITY PHASE (Week 14-32)

Goals: Continue to increase strength, power, and endurance of upper extremity musculature
Gradual return to sport activities

Week 14

- Continue strengthening program
- Emphasis on elbow and wrist strengthening and flexibility exercises
- Maintain full elbow ROM
- Initiate one hand plyometric throwing (stationary throws)
- Initiate one hand wall dribble
- Initiate one hand baseball throws into wall

Week 16

- Initiate interval throwing program - Phase I
- Continue Thrower's Ten Program and plyos
- Continue to stretch before and after throwing

Week 22-24

- Progress to Phase II throwing (once successfully completed Phase I)

Week 30-32

- Gradually progress to competitive throwing/sports

UCL Reconstruction Throwing Program

3 to 4 months: # of THROWS DISTANCE (ft)

20 20 (warm-up phase)

25 - 40 30 - 40

10 20 (cool down phase)

4 - 5 months: o Continue the Throwing Program by tossing the ball with an easy wind-up on alternate days.

of THROWS DISTANCE (ft)

10 20 (warm-up)

10 30 - 40

30 - 40 50

10 20 - 30 (cool down)

5 - 6 months: o Continue increasing the throwing distance to a maximum of 60 feet.

o Continue tossing the ball with an occasional throw at no more than half speed.

of THROWS DISTANCE (ft)

10 30 (warm up)
10 40 - 45
30 - 40 60 - 70
10 30 (cool down)

6 to 7 months: o During this step gradually increase the distance to 150 feet maximum.

Phase I: # of THROWS DISTANCE (ft)

10 40 (warm up)
10 50 - 60
15 - 20 70 - 80
10 50 - 60
10 40 (cool down)

Phase II: # of THROWS DISTANCE (ft)

10 40 (warm up)
10 50 - 60
20 - 30 80 - 90
20 50 - 60
10 40 (cool down)

Phase III: # of THROWS DISTANCE (ft)

10 40 (warm up)
10 60
15 - 20 100 - 110
20 60
10 40 (cool down)

Phase IV: # of THROWS DISTANCE (ft)

10 40 (warm up)
10 60
15 - 20 120 - 150
20 60
10 40 (cool down)

7 to 8 months: oProgress to throwing off the mound at 1/2 to 3/4 speed. Try to use proper body mechanics, especially when throwing off the mound:

- Stay on top of the ball.
- Keep the elbow up.
- Throw over the top.
- Follow through with the arm and trunk.

Phase I: # OF THROWS DISTANCE (ft)



10 60 (warm up)
10 120 - 150 (lobbing)
30 45 (off the mound)
10 60 (off the mound)
10 40 (cool down)
Phase II: # OF THROWS DISTANCE (ft)
10 50 (warm up)
10 120 - 150 (lobbing)
20 45 (off the mound)
20 60 (off the mound)
10 40 (cool down)
Phase III: # OF THROWS DISTANCE (ft)
10 50 (warm up)
10 60
10 120 - 150 (lobbing)
10 45 (off the mound)
30 60 (off the mound)
10 40 (cool down)
Phase IV: # OF THROWS DISTANCE (ft)
10 50 (warm up)
10 120 - 150 (lobbing)
10 45 (off the mound)
40 - 50 60 (off the mound)
10 40 (cool down)

At this time, if the pitcher has successfully completed the above phase without pain or discomfort and is throwing approximately 3/4 speed, the pitching coach and trainer may allow the pitcher to proceed to the next step of "Up/Down Bullpens". Up/Down Bullpens is used to simulate a game situation. The pitcher rests in between a series of pitches to reproduce the rest period in between innings.

Up/Down Bullpens: (1/2 - 3/4 speed)
Day 1: # OF THROWS DISTANCE (ft)
10 warm-up 120 - 150 (lobbing)
10 warm-up 60 (off the mound)
40 pitches 60 (off the mound)
REST 10 MINUTES
20 pitches 60 (off the mound)
Day 2: OFF
Day 3: # OF THROWS DISTANCE (ft)
10 warm-up 120 - 150 (lobbing)
10 warm-up 60 (off the mound)
30 pitches 60 (off the mound)
REST 10 MINUTES



10 warm-up 60 (off the mound)

20 pitches 60 (off the mound)

REST 10 MINUTES

10 warm-up 60 (off the mound)

20 pitches 60 (off the mound)

Day 4: OFF

Day 5: # OF THROWS DISTANCE (ft)

10 warm-up 120 - 150 (lobbing)

10 warm-up 60 (off the mound)

30 pitches 60 (off the mound)

REST 8 MINUTES

20 pitches 60 (off the mound)

REST 8 MINUTES

20 pitches 60 (off the mound)

REST 8 MINUTES

20 pitches 60 (off the mound)

At this point, the pitcher is ready to begin a normal routine, from throwing batting practice to pitching in the bullpen. This program should be adjusted as needed by your physician, athletic trainer or physical therapist.