

ULNAR COLLATERAL LIGAMENT RECONSTRUCTION REHABILITATION PROTOCOL

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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:

<u># of THROWS</u>	<u>DISTANCE (ft)</u>
20	20 (warm-up phase)
25 - 40	30 - 40
10	20 (cool down phase)

4 - 5 months:
days.

- Continue the Throwing Program by tossing the ball with an easy wind-up on alternate days.

<u># of THROWS</u>	<u>DISTANCE (ft)</u>
10	20 (warm-up)
10	30 - 40
30 - 40	50
10	20 - 30 (cool down)

5 - 6 months:

- Continue increasing the throwing distance to a maximum of 60 feet.
- Continue tossing the ball with an occasional throw at no more than half speed.

<u># of THROWS</u>	<u>DISTANCE (ft)</u>
10	30 (warm up)
10	40 - 45
30 - 40	60 - 70
10	30 (cool down)

6 to 7 months:

- During this step gradually increase the distance to 150 feet maximum.

Phase I:

<u># of THROWS</u>	<u>DISTANCE (ft)</u>
10	40 (warm up)
10	50 - 60
15 - 20	70 - 80
10	50 - 60
10	40 (cool down)

Phase II:

<u># of THROWS</u>	<u>DISTANCE (ft)</u>
10	40 (warm up)
10	50 - 60
20 - 30	80 - 90
20	50 - 60
10	40 (cool down)

<i>Phase III:</i>	<u># of THROWS</u>	<u>DISTANCE (ft)</u>
	10	40 (warm up)
	10	60
	15 - 20	100 - 110
	20	60
	10	40 (cool down)

<i>Phase IV:</i>	<u># of THROWS</u>	<u>DISTANCE (ft)</u>
	10	40 (warm up)
	10	60
	15 - 20	120 - 150
	20	60
	10	40 (cool down)

7 to 8 months:

•Progress 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.

<i>Phase I:</i>	<u># OF THROWS</u>	<u>DISTANCE (ft)</u>
	10	60 (warm up)
	10	120 - 150 (lobbing)
	30	45 (off the mound)
	10	60 (off the mound)
	10	40 (cool down)

<i>Phase II:</i>	<u># OF THROWS</u>	<u>DISTANCE (ft)</u>
	10	50 (warm up)
	10	120 - 150 (lobbing)
	20	45 (off the mound)
	20	60 (off the mound)
	10	40 (cool down)

<i>Phase III:</i>	<u># OF THROWS</u>	<u>DISTANCE (ft)</u>
	10	50 (warm up)
	10	60
	10	120 - 150 (lobbing)
	10	45 (off the mound)
	30	60 (off the mound)
	10	40 (cool down)

<i>Phase IV:</i>	<u># OF THROWS</u>	<u>DISTANCE (ft)</u>
	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)

<i>Day 1:</i>	<u># OF THROWS</u>	<u>DISTANCE (ft)</u>
	10 warm-up	120 - 150 (lobbing)
	10 warm-up	60 (off the mound)
	40 pitches	60 (off the mound)
	<i>REST 10 MINUTES</i>	
	20 pitches	60 (off the mound)
<i>Day 2:</i>	OFF	
<i>Day 3:</i>	<u># OF THROWS</u>	<u>DISTANCE (ft)</u>
	10 warm-up	120 - 150 (lobbing)
	10 warm-up	60 (off the mound)
	30 pitches	60 (off the mound)
	<i>REST 10 MINUTES</i>	
	10 warm-up	60 (off the mound)
	20 pitches	60 (off the mound)
	<i>REST 10 MINUTES</i>	
	10 warm-up	60 (off the mound)
	20 pitches	60 (off the mound)
<i>Day 4:</i>	OFF	
<i>Day 5:</i>	<u># OF THROWS</u>	<u>DISTANCE (ft)</u>
	10 warm-up	120 - 150 (lobbing)
	10 warm-up	60 (off the mound)
	30 pitches	60 (off the mound)
	<i>REST 8 MINUTES</i>	
	20 pitches	60 (off the mound)
	<i>REST 8 MINUTES</i>	
	20 pitches	60 (off the mound)
	<i>REST 8 MINUTES</i>	
	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.