



# Indiana University Health

*IU Health Physicians Orthopedics & Sports Medicine*

## **ULNAR COLLATERAL LIGAMENT (UCL) RECONSTRUCTION**

### **PHYSICAL THERAPY PROTOCOL**

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**Patient Name:** \_\_\_\_\_ **Date of Surgery:** \_\_\_\_\_

\_\_\_ **Evaluate and Treat**                      \_\_\_ **Provide patient with home program**

**Frequency:** \_\_\_\_\_ x/week    x    \_\_\_\_\_ weeks

\_\_\_ **Phase I (0-6 wks): *Period of protection*\*\*\*.** Gradual progression of motion while protecting the reconstruction. Hinged elbow brace should be worn during sleep and in public places. **Avoid any valgus loading of elbow until 3 months post-op.**

**-Weeks 0-2:** Goals = wound healing, pain control, minimize atrophy; formal therapy to start ~2 weeks postop.



- **Splint/Brace:** Immobilization in plaster splint/sling with wrist free → converted to hinged elbow brace (allowing ROM 45 to 90 deg) at 1 week visit. Brace should be worn at all times.
- **ROM:** Patients encouraged to perform flexion/extension of wrist without excessive forearm pronation. Once brace is applied, patients may begin AROM as tolerated 45-90 degrees with brace on. A+PROM knee as tolerated (graft harvest site).
- **Strengthening:** Shoulder/biceps isometrics. *Avoid valgus loading of elbow.*

**-Week 2-4:**

- **Brace:** locked at 90 deg outside of PT and rehab efforts. Brace should be worn at all times locked at 90 deg (except for hygiene or PT).
- **ROM:** Advance AROM elbow, progressing as tolerated. Avoid aggressive passive stretching in flexion unless patient is not progressing. Avoid aggressive passive stretching in extension until after 4 weeks. Goal: 0-120 by 4 weeks postop.
- **Strengthening:** Cuff and periscapular strengthening. *Avoid valgus loading of elbow.* May begin knee strengthening as tolerated.

**-Weeks 4-6:**

- **Brace:** locked at 90 deg outside of PT and rehab efforts. Brace should be worn at all times locked at 90 deg (except for hygiene or PT).
- **ROM:** Advance AROM as tolerated. If full extension is not achieved by 4 weeks, add soft-tissue mobilization with low-load, long-duration passive stretches. If 120 degrees of flexion not achieved by 4 weeks, add low-load, long-duration passive stretching in flexion. Goal: 0-140 by 6 weeks postop.
- **Strengthening:** Grip strengthening, cuff and periscapular strengthening. *Avoid valgus loading of elbow.*

**Phase II (6-16 wks): Advance strengthening.**

- **ROM:** Advance A+PROM to full, if not achieved. Aggressive stretching at end-ranges to advance to full.
- **Strengthening:** Begin gentle, resisted cuff/periscapular strengthening and add in elbow and wrist flexion/extension. May transition into closed-chain exercises and incorporate overall body conditioning (if not already begun): running, elliptical, stationary bike. *Avoid valgus loading of the elbow until after 3 months.*
- Restore full elbow ROM (Be conscious of pre-operative ROM as may be different from contralateral elbow)
- Isotonics for scapula, shoulder, elbow, forearm, wrist
- Begin IR/ER strength @ 8 weeks
- Begin forearm pronation/supination strength @ 8 weeks
- Neuromuscular drills
- PNF patters when strength adequate



- Eccentric training when strength adequate

**Phase III (4-12+ months): *Begin more sport-focused conditioning. Graduated return to throwing as detailed below. Flare-ups of pain are common (most commonly secondary to throwing too hard), and should be addressed with several days of rest, followed by resumption of therapy once pain has resolved.***

**\*\*\* SEE END OF DOCUMENT FOR ADDITIONAL SPECIFICS ON RETURN TO THROW PROTOCOL \*\*\***

- **Month 4:** PT one time every 3-4 wks. Start throwing at 45 ft for 10 min (3-4 times per week with rest day between), throwing just hard enough to reach the target. There should be a slight arc on the ball. Warm-up is included in the allotted time. Emphasis on proper follow-through at ball release and hitting specific targets when throwing. Hitting can be started for 10-15 minutes off the tee, gradually progressing in intensity.
- **Month 5:** PT one time every 3-4 wks. Increase throwing to 60 ft for 10-15 min (3x/week); Start hitting soft-toss for 10-15 min (3x/week).
- **Month 6:** PT one time every 3-4 wks. Advance to throwing from 120 ft for 15 min (3x/week) as follows:
  - **1<sup>st</sup> week:** throwing at 60 ft for 15 min
  - **2<sup>nd</sup> and 3<sup>rd</sup> weeks:** throwing at 90 ft for 15 min; once this is achieved, consider videotape of throwing mechanics.
  - **4<sup>th</sup> week:** throwing at 120 ft for 15 min
- **Months 7-8:** Sport-specific return to throwing programs (*see OrthoCarolina Pitcher and Fielder return to throwing program*).
- **Months 9-12:** Gradual release to competition if successful completion of throwing program.

**Other:**

- Modalities                       Electrical Stimulation                       Ultrasound  
 Heat before/after                       Ice before/after exercise

**By signing this referral, I certify that I have examined this patient and physical therapy is medically necessary. This patient  would  would not benefit from social services.**

\_\_\_\_\_

**Date:** \_\_\_\_\_

**Bryan M. Saltzman, MD**



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**\*There should be no medial elbow pain during the return to throwing period. Please notify the doctor if pain at medial elbow, other than soreness during any period of throwing program. Stop throwing program immediately if significant pain experienced.**

**NOTE: The Throwing Program is performed 3 - 4 times per week. Apply ice after each throwing session to help decrease the inflammatory response to microtrauma.**

**4 to 5 months:**

# of Throws	Distance (ft)
20	20 (warm-up phase)
25-40	30-40
10	20 (cool down phase)

**5 to 6 months:**

- 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)

**6 to 7 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.

# of Throws	Distance (ft)
10	30 (warm up)
10	40-45
30-40	60-70
10	30 (cool down)

**7 to 8 months:**

- Gradually increase to 150 feet



Phase 1	# of Throws	Distance (ft)
	10	40 (warm-up)
	10	50-60
	15-20	70-80
	10	50-60
	10	40 (cool down)

Phase 2	# of Throws	Distance (ft)
	10	40 (warm-up)
	10	50-60
	20-130	80-90
	20	50-60
	10	40 (cool down)

Phase 3	# of Throws	Distance (ft)
	10	40 (warm-up)
	10	60
	15-20	100-110
	20	60
	10	40 (cool down)

Phase 4	# of Throws	Distance (ft)
	10	40 (warm-up)
	10	60
	15-20	120-150
	20	60

### 8 to 9 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.



Phase 1	# 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 2	# 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 3	# 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 4	# 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)

**9 to 10 months:**

- 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.



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
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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
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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)

#### 10 to 12 months:

- 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.

#### Advancing to full return to Pitching:

- Typically 10-12 months, ideally 12-14 months
- In order for full return to pitching, pitcher must demonstrate proper throwing mechanics, which is obtained with full function ROM, proper



conditioning/endurance, strong shoulder and scapular musculature and stability of the kinetic chain with strong lower extremity and core musculature