

Patient: _____ Date of Surgery: _____

Procedure: Right/Left Ulnar Collateral Ligament Reconstruction – Left Hamstring Autograft

Associated Procedure (circled if applicable): Subcutaneous Ulnar Nerve Transposition

Week 1: No formal PT. Splint and sling for 1 week to be removed either in PT or with MD guidance.

AVOID ANY VALGUS UNTIL 3 MONTHS POST-OP

Phase I (1-2 wks): *Begin formal PT*

Weight bearing: <2 lb weight limit, ok for ADL use below this limit.

Brace: Hinged brace allowing 45° - 90° worn at all times

Ice: Not directly on skin, recommend as much as possible. 5x/day, 20 min/session for first 2 weeks. Then after activity at minimum.

ROM: Encourage ROM within brace constraints. Continue shoulder and wrist ROM.

Exercises: Cuff/Periscapular in brace within above limits. AROM and PROM of knee as tolerated

Phase II (2-4 wks): *Early motion*

Weight bearing: <5 lb weight limit, avoid valgus at elbow.

Brace: Can be opened in extension to patient comfort but no more than 90 flexion.

ROM: AAROM elbow. Avoid aggressive passive stretching in flexion unless patient not progressing. Avoid aggressive passive stretching until after 4 weeks. Goal ROM 0-120 by 4-5 weeks postop.

Exercises: Cuff and periscapular, avoid valgus loading of elbow. Knee strengthening as tolerated.

Phase III (5-6 wks): *Work on full motion*

Weight bearing: <5 lb weight limit, avoid valgus at elbow.

Brace: Night only, 0-90 degrees. Discontinue at 6 weeks.

ROM: Advance AROM, if full motion not achieved add soft tissue mobilization with low load passive stretches. Goal 0-140 by 6 weeks.

Exercises: Grip strengthening, cuff and periscapular strengthening.

Phase IV (6-16 wks): *Advanced Strengthening*

Weight bearing: <10lbs and advanced to full at 3 months.

Brace: Discontinue.

ROM: A+PROM to full if not achieved. Aggressive end range stretching to full

Exercises: 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.***

Phase V (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.*

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:

- **1st week:** throwing at 60 ft for 15 min
- **2nd and 3rd weeks:** throwing at 90 ft for 15 min; once this is achieved, consider videotape of throwing mechanics.
- **4th week:** throwing at 120 ft for 15 min

Months 7-8: Sport-specific return to throwing programs (*see attached return to throwing program*)

Months 9-12: Gradual release to competition if successful completion of throwing program.

Frequency: _____x/week x _____weeks

By signing this referral, I certify that I have examined this patient and physical therapy is medically necessary.

Date: _____

Dax Varkey MD, MPH

Return to Throwing Program for Baseball

The object of the throwing program is to return the athlete to his previous level of competition, while minimizing the risk of re-injury. Adequate warm-up and stretching, involving the whole body, attention to proper mechanics, and a gradual progression are keys to an effective recovery.

Prerequisites

Before entering the throwing program the athlete should have achieved the following:

1. Full pain free range of motion of the shoulder and elbow
2. Synchrony of shoulder and scapulothoracic (shoulder blade) motion
3. Adequate strength development as determined by your physician, physical therapist, and/or athletic trainer.

Rate of Progression

Close supervision of the program is essential. Each athlete will progress at his own rate. Mild soreness and stiffness is to be expected; however, if any pain is felt in the shoulder or elbow, throwing should be stopped until pain free. The athlete is not allowed to progress to the next phase unless he can complete the previous phase pain free.

Warm Up and Stretching

The athlete should begin each session with jogging or other light activity to increase circulation and muscle temperature. This should be followed by stretching for the full body, including legs, trunk, shoulder, and arm prior to beginning the warm up throws.

Weight Training

Maintaining proper strength and endurance of the rotator cuff and upper back musculature is essential to long term success. Strength training should consist of low weight, high repetition exercises to target these muscles. They should be performed on throwing days, but only after throwing has been completed.

Mechanics

Proper mechanics of throwing is essential in reducing stress and injury. The athlete's coach should be enlisted to aid in achieving a normal and consistent throwing motion. The crow-hop method (first a hop, then a skip, followed by the throw) may be used to ensure proper alignment of the body to begin the throwing motion. Flat-footed throwing encourages improper mechanics, and should be avoided. **The ball should be thrown just hard enough to reach the target.**

Variations

1. Mirror throwing
2. Frequency
3. Count throws
4. Intervals
5. Youth athletes (i.e. those playing on a smaller field) may modify by starting Phase I at 30 feet, and work up to 90 feet as a max distance before starting Phase II
6. Adapt to other sports

Phase I - Sample Progression

Begin with warm up and stretching as described on the first sheet. Do 5 minutes of easy warm up throwing at about 30 feet and then gradually move back to the prescribed distance. You can throw 2 days in a row or every other day. Plan this around your practice schedule and weather forecast for the upcoming week. Rest on any day that persistent soreness or pain in the shoulder or elbow is present. Once at 90 feet and beyond, return to 60 feet for the last 5 minutes of throwing if you are a pitcher. This will give you extra practice at locating your throws and hitting targets.

Day 1	Throw 45'	10 minutes
Day 2	REST	
Day 3	Throw 45'	15 minutes
Day 4	REST	
Day 5	Throw 60'	15 minutes
Day 6	REST	
Day 7	Throw 60'	15-20 minutes
Day 8	REST	
Day 9	Throw 90'	15 minutes
Day 10	REST	
Day 11	Throw 90'	15-20 minutes
Day 12	REST	
Day 13	Throw 120'	15 minutes
Day 14	REST	
Day 15	Throw 120'	15-20 minutes
Day 16	REST	
Day 17	Throw 150'	15 minutes
Day 18	REST	
Day 19	Throw 150'	15-20 minutes
Day 20	REST	
Day 21	Throw 180'	15 minutes
Day 22	REST	
Day 23	Throw 180'	15-20 minutes
Day 24	REST	
Day 25	Begin Phase II making throws from position or begin mound routine (next page) at 50% effort.	

Phase II- Sample Progression

After the athlete is able to throw 180 feet for 15-20 minutes without pain, specific position drills may begin. Pitchers begin throwing fastballs (FB) only at 50% effort from the mound. Position players may throw in drills starting at 50% effort. Sample progressions follow. **Use interval throwing to 120 feet as warm up. If you are not old enough to throw breaking balls (BB) then substitute with change ups.**

Pitchers

Day 1	Interval throwing to 120 feet as warm up.	50% FB only – 25 throws
Day 2	OFF	
Day 3	Interval throwing to 120 feet as warm up.	50% FB only – 35 throws

Day 4	OFF	
Day 5	Interval throwing to 120 feet as warm up.	75% FB only – 35 throws
Day 6	OFF	
Day 7	Interval throwing to 120 feet as warm up.	75% FB only – 50 throws
Day 8	OFF	
Day 9	Interval throwing to 120 feet as warm up.	75% FB – 40 throws; 50% BB – 20 throws
Day 10	OFF	
Day 11	Interval throwing to 120 feet as warm up.	90% FB – 30 throws; 75% BB – 20 throws
Day 12	OFF	
Day 13	Interval throwing to 120 feet as warm up.	95% FB – 30 throws; 95% BB – 20 throws
Day 14	OFF	
Day 15	Simulated Game – 2-3 innings	
Day 16	5-10 minutes interval throwing to 90 feet	
Day 17	Simulated Game – 2-3 innings	
Day 18	5-10 minutes interval throwing to 90 feet	
Day 19	OFF	
Day 20	Live scrimmage	
Day 21	5-10 minutes interval throwing to 90 feet	
Day 22	OFF	
Day 23	Released for competition	

Fielders – Start with 25 throws and work up 30-40 throws

Day 1	50% effort	Day 8	90%
Day 2	50%	Day 9	OFF
Day 3	OFF	Day 10	95%
Day 4	75%	Day 11	95%
Day 5	75%	Day 12	OFF
Day 6	OFF	Day 13	Live Scrimmage (95%)
Day 7	90%	Day 14	Released for competition

Suggested Readings

Davis JT, Limpisvasti O, Fluhme D, Mohr KJ, Yocum LA, Elattrache NS, Jobe FW. The effect of pitching biomechanics on the upper extremity in youth and adolescent baseball pitchers. *Am J Sports Med.* 2009 Aug; 37(8): 1484-91.

Reinold MM, Wilk KE, Reed J, Crenshaw K, Andrews JR. Interval sports programs: Guidelines for baseball, tennis, and golf. *J Orthop Sports Phys Ther.* 2002 June; 32(6): 293-298.

Wilk KE, Obma P, Simpson CD, Cain EL, Dugas J, Andrews JR. Shoulder injuries in the overhead athlete. *J Orthop Sports Phys Ther.* 2009 February; 39(2): 38-54.