

Ulnar Collateral Ligament Reconstruction

Individual patient circumstances may affect the guideline
(tear configuration, fixation used, associated procedures, etc.)

Phase	Goals	Precautions/Restrictions	Treatment
Weeks 0-3	<ul style="list-style-type: none"> Protect surgical site Reduce muscle atrophy Reduce swelling Decrease pain and inflammation ROM: 15-110° 	<ul style="list-style-type: none"> ROM: <ul style="list-style-type: none"> Week 1 – Immobilized Week 2 – 30-100° Week 3 – 15-115° Bracing and splint per physician Avoid valgus force during ROM exercises 	<ul style="list-style-type: none"> PRICE <ul style="list-style-type: none"> Cryotherapy: 5-7 times per day Compression with TubiGrip/TEDS Elbow ROM within restrictions Wrist ROM as tolerated Hand gripping Cervical, shoulder, and scapular ROM Cardio: Walking, stationary bike with brace, no treadmill
Weeks 4-8	<ul style="list-style-type: none"> Protect surgical site Gradual increase in elbow ROM Improve shoulder, arm strength 	<ul style="list-style-type: none"> Within functional brace elbow ROM: <ul style="list-style-type: none"> Week 4 – 10-120° Week 5 – 5-130° Week 6 – 0-130° Discontinue brace per physician instructions Avoid valgus force during ROM or strengthening exercises 	<ul style="list-style-type: none"> ROM: PROM and AAROM per restrictions Shoulder isometrics -> isotonic with light resistance band Cardio: Walking, stationary bike with brace, no treadmill
Week 8-12	<ul style="list-style-type: none"> Increase overall strength Maintain full elbow ROM 	<ul style="list-style-type: none"> No pain with strengthening at the medial elbow No ROM restrictions Avoid running/jumping <i>Full elbow ROM at 10 weeks; please contact physician if not</i> 	<ul style="list-style-type: none"> ROM: no restrictions Progress resistance exercise for shoulder and elbow between 0-45° abduction Eccentric elbow flexion strengthening Therapist resisted diagonal patterns Hip, lower extremity, and core strengthening Scapular strengthening Cardio: Walking, stationary bike with no brace
Weeks 12-20	<ul style="list-style-type: none"> Full ROM at elbow and shoulder Strength ≥ 90% LSI in shoulder 45° abduction Improve capacity for sport specific demand 	<ul style="list-style-type: none"> No pain with strengthening Avoid valgus stress with strengthening Minimize risk of falls with cardiovascular exercise 	<ul style="list-style-type: none"> Continue with PRE from above Shoulder strengthening > 45° Rhythmic stabilization May initiate 2-hand plyometrics Hip and core strengthening Scapular strengthening Cardio: may initiate jogging at week 16
Months 5+	<ul style="list-style-type: none"> Full ROM in all planes Strength ≥ 100% LSI in 90/90 position Pass Return to throwing criteria Progression to overhead athlete program 	<ul style="list-style-type: none"> No pain with throwing or strengthening 	<ul style="list-style-type: none"> Continue with PRE from above Plyometric progression <ul style="list-style-type: none"> 2 arms -> 1 arm Sagittal plane -> transverse plane Initiate throwing program when throwing criteria met after 28 weeks Initiate return to sport program Cardio: Target sport specific energy demands

This guideline is not meant to be prescriptive but a recommendation to the rehabilitation process. Progress may vary based on specifics of injury and procedure.



Return to hitting program

**Avoid hitting on back to back days
Perform each step twice prior to progressing**

<u>Off tee</u>	Step 1: 50% effort (15-20 swings) Step 2: 50% effort (2 of 15 swings) Step 3: 65-70% effort (2 sets of 15 swings) Step 4: 70-75% effort (2 sets of 20 swings) Step 5: 80-90% effort (2 sets of 25 swings)
<u>Soft toss</u>	Warm-up using tee stand Step 6: 50-60% effort (15-20 swings) Step 7: 65-70% effort (2 sets of 20 swings) Step 8: 80-90% effort (2 sets of 25 swings)
<u>Batting practice</u>	Warm-up with soft toss swings Step 9: 50-65% effort (2 sets of 25 swings) Step 10: 70-75% effort (2 sets of 30 swings) Step 11: 8-90% effort (2 sets of 35 swings)

Return to throwing program

Throwing program should be performed every other day with one day of rest in between (i.e. Monday, Wednesday, and Friday). Each Step should be performed for two throwing days before moving on to the next Step. For example, Step 1 should be performed on Monday and Wednesday, and then Step 2 performed on Friday and the next Monday with the same pattern being followed for subsequent Steps. Any time a Step is painful, stay at that step or go back to a previous step. Do not advance until the step is performed for two consecutive throwing days pain free.

45' Phase	60' Phase	60' & 75' Phase	90' Phase	120' Phase	Flat throwing
<p><u>Step 1:</u> A) Warm-up Throwing B) 45' (25 Throws) C) Rest 3-5 minutes D) Warm-up Throwing E) 45' (25 Throws)</p> <p><u>Step 2:</u> A) Warm-up Throwing B) 45' (25 Throws) C) Rest 3-5 minutes D) Warm-up Throwing E) 45' (25 Throws) F) Rest 3-5 minutes G) Warm-up Throwing H) 45' (25 Throws)</p>	<p><u>Step 3:</u> A) Warm-up Throwing B) 60' (25 Throws) C) Rest 3-5 minutes D) Warm-up Throwing E) 60' (25 Throws)</p> <p><u>Step 4:</u> A) Warm-up Throwing B) 60' (25 Throws) C) Rest 3-5 minutes D) Warm-up Throwing E) 60' (25 Throws) F) Rest 3-5 minutes G) Warm-up Throwing H) 60' (25 Throws)</p>	<p><u>Step 5:</u> A) Warm up Throwing B) 60' (25 Throws) C) Rest 3-5 minutes D) 60' (25 Throws) E) Rest 3-5 minutes F) 75' (25 Throws)</p> <p><u>Step 6:</u> A) Warm-up Throwing B) 60' (25 Throws) C) Rest 3-5 minutes D) Warm-up Throwing E) 75' (25 Throws) F) Rest 3-5 minutes G) Warm-up Throwing H) 75' (25 Throws)</p>	<p><u>Step 7:</u> A) 60' (10 throws) B) 90' (20 throws) C) Rest 3-5 minutes D) 60' (10 throws) E) 90' (20 throws)</p> <p><u>Step 8:</u> A) 60' (7 throws) B) 90' (18 throws) C) Rest 3-5 minutes D) 60' (7 throws) E) 90' (18 throws) F) Rest 3-5 minutes G) 60' (7 throws) H) 90' (18 throws)</p>	<p><u>Step 9:</u> A) 60' (5-7 throws) B) 90' (5-7 throws) C) 120' (15 throws) D) Rest 3-5 minutes E) 60' (5-7 throws) F) 90' (5-7 throws) G) 120' (15 throws)</p> <p><u>Step 10:</u> A) 60' (5 throws) B) 90' (10 throws) C) 120' (15 throws) D) Rest 3-5 minutes E) 60' (5 throws) F) 90' (10 throws) G) 120' (15 throws) H) Rest 3-5 minutes I) 60' (5 throws) J) 90' (10 throws) K) 120' (15 throws)</p>	<p><u>Step 11:</u> A) Throw 60 ft. (10-15 throws) B) Throw 75 ft. (5-10 throws) C) Throw 90 ft. (10 throws) D) Throw 120 ft. (10 throws) E) Throw 60 ft. (flat ground) using pitching mechanics (20-30 throws)</p> <p><u>Step 12:</u> A) Throw 60 ft. (10-15 throws) B) Throw 75 ft. (10 throws) C) Throw 90 ft. (10 throws) D) Throw 120 ft. (10 throws) E) Throw 60 ft. (flat ground) using pitching mechanics (20-30 throws) F) Rest 3-5 minutes G) Throw 60-90 ft. (10-15 throws) H) Throw 60 ft. (flat ground) using pitching mechanics (20 throws)</p>

Throwing Off the Mound

After the completion of Phase I of the Interval Throwing Program and the athlete can throw to the prescribed distance without pain the athlete will be ready for throwing off the mound or return to their respective position. At this point, full strength and confidence should be restored in the athlete's arm. Just as the advancement to this point has been gradual and progressive, the return to unrestricted throwing must follow the same principles. A pitcher should first throw only fast ball at 50%, progressing to 75% and 100%. At this time, the athlete may start more stressful pitches such as breaking balls. The position player should simulate a game situation, again progressing at 50-75-100%. Once again, if an athlete has increased pain, particularly at the joint, the throwing program should be backed off and re-advanced as tolerated, under the direction of the rehabilitation team.

Summary: In using the Interval Throwing Program (ITP) in conjunction with a structured rehabilitation program, the athlete should be able to return to full competition status, minimizing any chance of re-injury. The program and its progression should be modified to meet the specific needs of each individual athlete. A comprehensive program consisting of a maintenance strength and flexibility program, appropriate warm-up and cool-down procedures, proper pitching mechanics, and progressive throwing and batting will assist the baseball player in returning safely to competition.

STAGE 1: FASTBALLS ONLY

Step 1: Interval Throwing
15 Throws off mound 50%

Step 2: Interval Throwing
30 Throws off mound 50%

Step 3: Interval Throwing
45 Throws off mound 50%

Step 4: Interval Throwing
60 Throws off mound 50%

Step 5: Interval Throwing
70 Throws off mound 50%

Step 2: Interval Throwing
30 Throws off mound 50%

Step 6: 45 Throws off mound 50%
30 Throws off mound 75%

Step 7: 30 Throws off mound 50%
45 Throws off mound 75%

Step 8: 65 Throws off mound 75%
10 Throws off mound 50%

STAGE 2: FASTBALLS ONLY

Step 9: 60 Throws off mound 75%
15 Throws in Batting Practice

Step 10: 50-60 Throws off mound 75%
30 Throws in Batting Practice

Step 11: 45-50 Throws off mound 75%
45 Throws in Batting Practice

STAGE 3

Step 12: 30 Throws off mound 75% (warm-up)
15 Throws off mound 50% BREAKING BALLS
45-60 Throws in Batting Practice (fastball only)

Step 13: 30 Throws off mound 75% (warm-up)
30 Breaking Balls 75%
30 Throws in Batting Practice

Step 14: 30 throws off mound 75% (warm-up)
60-90 Throws in Batting Practice (Gradually increase breaking balls)

Step 15: SIMULATED GAME: PROGRESSING BY 15 THROWS PER WORKOUT
(Pitch Count)