

Dr. Austin Crow

UCL Reconstruction using autogenous palmaris longus graft

Name _____

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DOS _____

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|---|------------|--|--|---|--|---|
| Phase I (0-3 weeks) Goals -Protect healing tissue -Decrease pain/inflammation -Retard muscular atrophy -Protect graft site-allow healing | Week 1 | <u>Brace:</u> Posterior splint with elbow at 90° flexion | <u>Compression:</u> Elbow Compression dressing (first 2-3 days) Wrist (graft site) compression dressing 7-10 days as needed | <u>Cryotherapy:</u> To elbow joint and graft site at the wrist | <u>Range of motion:</u> Wrist AROM (flexion & extension) immediately postoperatively | <u>Exercises:</u> Gripping exercises, Wrist ROM, Supination/Pronation, Shoulder isometrics (no shoulder internal rotation), Biceps isometrics |
| | Week 2 | <u>Brace:</u> Elbow ROM 30°-100° | <u>Cryotherapy:</u> Continue ice to elbow joint and graft site | <u>Exercises:</u> Continue all exercises listed above, Elbow ROM in brace (-30° to 100°, Initiate isometric elbow extension, Initiate wrist isometrics, Continue wrist ROM exercises, Initiate light scar mobilization over the distal graft incision | | |
| | Week 3 | <u>Brace:</u> Elbow ROM 15°-110° (Gradually increase ROM by 5° extension and 10° flexion per week after this point) | | <u>Exercises:</u> Continue all exercises listed above, Elbow ROM in brace, Initiate light wrist flexion stretching, Initiate AROM shoulder (full can, lateral raises, ER/IR tubing), Continue wrist ROM exercises, Initiate light scar mobilization over the distal graft incision. | | |
| Phase II (4-8 weeks) Goals -Gradual increase in range of motion -Promote healing of repaired tissue -Regain and improve muscular strength | Week 4 | <u>Brace:</u> Elbow ROM 10°-120° | <u>Exercises:</u> Begin light resistance exercises for arm (1 lb.): (wrist curls and wrist extension, pronation/supination, elbow extension/flexion), Progress shoulder program, emphasizing rotator cuff and scapular strengthening (avoid ER until week 6), Initiate shoulder strengthening with light dumbbells | | | |
| | Week 5 | <u>Brace:</u> Elbow ROM 5°-130° | | <u>Exercises:</u> Continue all exercises and progress all shoulder and UE exercises (progress 1# weight) | | |
| | Week 6 | <u>Brace:</u> Elbow ROM 0°-145° (without brace, or full AROM) | | <u>Exercises:</u> Initiate Thrower's Ten Program, Progress elbow strengthening exercises, Initiate shoulder external rotation strengthening, Progress shoulder program | | |
| | Week 7 | <u>Exercises:</u> Progress Thrower's Ten Program (progress weights), Initiate PNF diagonal patterns (light) | | | | |
| Phase III (8-14 weeks) Goals -Increase strength, power, endurance -Maintain full elbow ROM -Gradually initiate sporting activities | Week 8 | <u>Exercises:</u> Initiate eccentric elbow flexion/extension, Continue isotonic program; forearm and wrist, Continue shoulder program-thrower's ten program, Manual resistance, diagonal patterns, Initiate plyometric exercise program (2 hand plyos close to body, chest pass, Side throw close to body) | | | | |
| | Week 10 | <u>Exercises:</u> Continue all exercises listed above, Progress plyometrics to 2 hand drills away from the body (side to side throws, soccer throws, side throws) | | | | |
| | Week 12-14 | <u>Exercises:</u> Continue all exercises, Initiate isotonic machines strengthening exercises if desired (bench press-seated, lat pull down), Initiate golf-swimming, Initiate interval hitting program. | | | | |
| Phase IV (14-32 weeks) Goals -Continue to increase strength, power and endurance of upper extremity musculature -Gradual return to sports activities | Week 14 | <u>Exercises:</u> Continue strengthening program, Emphasis on elbow and wrist strength 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 | <u>Exercises:</u> Initiate Interval Throwing Program (Phase I)[Long toss program], Continue Thrower's Ten program and plyos, Continue to stretch before and after throwing. | | | | |
| | Week 22-24 | <u>Exercises:</u> Progress to Phase II throwing (once successfully complete Phase I) | | | | |
| | Week 30-32 | <u>Exercises:</u> Gradually progress to competitive throwing and sports | | | | |

Interval Throwing Program for Baseball Players: Phase I

| 45' Phase | 60' Phase | 90' Phase | 120' Phase | | |
|---|--|--|---|---|--|
| <p>Step 1: A) Warm-up Throwing B) 45' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 45' (25 Throws)</p> <p>Step 2: A) Warm-up Throwing B) 45' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 45' (25 Throws) F) Rest 5-10 min. G) Warm-up Throwing H) 45' (25 Throws)</p> | <p>Step 3: A) Warm-up Throwing B) 60' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 60' (25 Throws)</p> <p>Step 4: A) Warm-up Throwing B) 60' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 60' (25 Throws) F) Rest 5-10 min. G) Warm-up Throwing H) 60' (25 Throws)</p> | <p>Step 5: A) Warm-up Throwing B) 90' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 90' (25 Throws)</p> <p>Step 6: A) Warm-up Throwing B) 90' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 90' (25 Throws) F) Rest 5-10 min. G) Warm-up Throwing H) 90' (25 Throws)</p> | <p>Step 7: A) Warm-up Throwing B) 120' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 120' (25 Throws)</p> <p>Step 8: A) Warm-up Throwing B) 120' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 120' (25 Throws) F) Rest 5-10 min. G) Warm-up Throwing H) 120' (25 Throws)</p> | | |
| <p style="text-align: center;">150' Phase</p> <p>Step 9: A) Warm-up Throwing B) 150' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 150' (25 Throws)</p> <p>Step 10: A) Warm-up Throwing B) 150' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 150' (25 Throws) F) Rest 5-10 min. G) Warm-up Throwing H) 150' (25 Throws)</p> | <p style="text-align: center;">180' Phase</p> <p>Step 11: A) Warm-up Throwing B) 180' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 180' (25 Throws)</p> <p>Step 12: A) Warm-up Throwing B) 180' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 180' (25 Throws) F) Rest 5-10 min. G) Warm-up Throwing H) 180' (25 Throws)</p> | | <p>Step 13: A) Warm-up Throwing B) 180' (25 Throws) C) Rest 5-10 min. D) Warm-up Throwing E) 180' (25 Throws) F) Rest 5-10 min. G) Warm-up Throwing H) 180' (20 Throws) I) Rest 5-10 min. J) Warm-up Throwing K) 15 Throws progressing from 120→90</p> <p>Step 14: Return to respective Position or progress to Step 14 below</p> | <p>All throws should be on an arc With a crop-hop</p> <p>Warm-up throws consists of 10-20throws at approximately 30 feet</p> <p>Throwing Program should be performed every other day. 3 times per week unless otherwise specified by your physician or rehabilitation specialist</p> <p>Perform each step_____ times before progressing to next step.</p> | <p>Conversions:</p> <p>45 feet = 13.7 meters</p> <p>60 feet = 18.3 meters</p> <p>90 feet = 27.4 meters</p> <p>120 feet = 36.6 meters</p> <p>150 feet = 45.7 meters</p> <p>180 feet = 54.8 meters</p> |
| Flat Ground Throwing for Baseball Pitchers | | | | | |
| <p>Step 14: A) Warm-up Throwing B) Throw 60 ft. (10-15 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 style="text-align: center;">Progress to Phase II-Throwing Off the Mound</p> | <p>Step 15: A) Warm-up Throwing B) Throw 60 ft. (10-15 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) Throw 60-90ft. (10-15 throws) G) Throw 60 ft. (flat ground) using pitching mechanics (20 throws)</p> | | | | |

Interval Throwing Program: Phase II-Throwing Off the Mound

STAGE ONE: 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 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:** 10 Throws off mound 50%
65 Throws off mound 75%

Use Interval Throwing 120ft (36.6 m) Phase as warm-up

ALL THROWING OFF THE MOUND SHOULD BE DONE IN THE PRESENCE OF YOUR PITCHING COACH OR SPORT BIOMECHANIST TO STREE PROPER THROWING MECHANICS

(USE SPEED GUN TO AID IN EFFORT CONTROL)

STAGE TWO: 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 THREE

- Step 12:** 30 Throws off mound 75% warm-up
15 Throws off mound 50% BEGIN BREAKING BALLS
45-60 Throws in Batting Practice (fastball only)
- Step 13:** 30 Throws off mound 75%
30 Breaking balls 75%
30 Throws in Batting Practice
- Step 14:** 30 Throws off mound 75%
60-90 Throws in batting Practice (Gradually increase breaking balls)
- Step 15:** SIMULATED GAME: PROGRESSING BY 15 THROWS PER WORKOUT (Pitch Count)

*Percentage effort