



HARVARD MEDICAL SCHOOL AND BRIGHAM AND WOMEN'S HOSPITAL

Post-operative UCL Protocol

For any questions please contact Dr. Hettrich at (617)525-3427.

Phase I: immediate postoperative phase (weeks 0-3)

Goals: Protect healing tissue, reduce pain and inflammation, avoid muscle atrophy, and protect graft site to allow healing.

(1) Postoperative Week 1

- Brace/Splint: Locked at 90° elbow flexion
- Range of motion (ROM): wrist active range of motion (AROM) extension/flexion
- Elbow ROM: None
- Elbow post-operative compression dressing: as needed
- Exercises:
 - Gripping exercises
 - Wrist ROM
 - Shoulder isometrics (no external rotation[ER] of the shoulder)
 - Biceps isometrics
- Cryotherapy: to elbow joint and to graft site at the wrist or knee

(2) Postoperative Week 2

- Brace: elbow ROM 25°-100° (gradually increase ROM by 5° extension/10°; flexion per week)
- Exercise:
 - Continue all exercises previously listed
 - Elbow ROM in brace (30°-105°)
 - Initiate elbow extension isometrics
 - Continue wrist ROM exercises
 - Initiate light scar mobilization over distal incision (graft)
- Cryotherapy: continue ice to elbow and graft site

(3) Postoperative week 3

- Brace: elbow room 15°-115°
- Exercises:
 - Continue all exercises previously listed
 - Elbow ROM in brace
 - Initiate active ROM for wrist and elbow (no resistance)
 - Initiate light wrist flexion and stretching

- Initiate active ROM for the shoulder:
- Full can exercises
- Lateral raises
- Elbow flexion/extension
- Initiate light scapular strengthening exercises
- May incorporate bicycle workouts for lower extremity strength and endurance

Phase II: intermediate phase (weeks 4-12)

Goals: gradually advance to full ROM; promote healing of repaired tissue; regain and improve muscle strength; restore full function of graft site.

(1) Week 4

- Brace: elbow ROM 0°-125°
- Exercises:
 - Begin light-resistance exercises for the arm (0.5kg [1pound]):
- Wrist curls, extensions, pronation, and supination
- Elbow extension/flexion
- Progress shoulder program; emphasize rotator cuff and scapular strengthening
- Initiate shoulder strengthening with light dumbbells

(2) Week 6

- Discontinue brace after being seen by Dr. Hettrich
- ROM: elbow ROM 0°-135°
- Continue all exercises:
 - Progress all shoulder and upper extremity(UE) exercises (progress weight 0.5kg [1pound])

(3) Week 8

- AROM: 0°-145° without brace (ie, full ROM)
- Exercises:
 - Initiate thrower's 10 program
 - Progress elbow strengthening exercises (flexion/extension)
 - Progress shoulder program

(4) Week 10

- Exercises:
 - Progress thrower's 10 program (progress weights)
 - Initiate proprioceptive neuromuscular facilitation (PNF)diagonal patterns (very light)

Phase III: advanced strengthening phase (weeks 12-18)

Goals: Increase strength, power, and endurance; maintain full elbow ROM; gradually initiate sports/functional activities (specificity).

(1) Week 12

- Exercises:
 - Initiate shoulder external rotation strengthening
 - Initiate eccentric elbow flexion/extension
 - Continue shoulder program (thrower's 10 program)
 - Initiate manual resistance diagonal patterns
 - Initiate plyometric exercise program (2-handed plyometrics close to the body only):
 - Chest pass
 - Side throw close to the body
 - Continue calf and hamstring stretching

(2) Week 14

- Exercises:
 - Continue all exercises listed previously
 - Advance plyometrics to 2-handed drills away from the body:
 - Side-to-side throws
 - Soccer throws
 - Side throws

(3) Week 16

- Continue all exercises
- Initiate strengthening exercises on isotonic machines (if desired):
 - Bench press (seated)
 - Lat pull down
- Initiate golf, swimming
- Initiate interval hitting program

Phase IV: return-to-activity phase (weeks 18-36)

Goals: Continue to increase strength, power, and endurance of upper extremity musculature
 Gradual return to sports/functional activities.

(4) Week 18

- Exercise:
 - Continue strengthening program
 - Emphasize elbow and wrist strengthening and flexibility exercises
 - Maintain full elbow ROM
 - Initiate 1-handed plyometric throwing (stationary throws)
 - Initiate 1-handed wall dribble
 - Initiate 1-handed baseball throws into wall

(5) Week 20

- Exercises:
 - Initiate interval throwing program (phase I) (long toss program)
 - Continue thrower's 10 program and plyometrics

- Continue stretching before and after throwing

(6) Week 26

- Exercises:
 - Progress to phase II throwing (once phase I has been successfully completed)

(7) Week 34-36

- Exercises:
 - Gradually progress to competitive throwing/sports
 - Functional activities

REFERENCES:

E. Wilk K, A. Arrigo C, R. Dugas J, L. Cain E, Andrews J. *Rehabilitation & Return to Play Criteria Following UCL Reconstruction*. Vol 25 2017.