Post-Operative Rehabilitation Protocol Following Ulnar Collateral Ligament Reconstruction Using Autogenous Gracilis Graft (Accelerated ROM)

I. IMMEDIATE POST-OPERATIVE PHASE (0-3 weeks)

**Goals:**
- Protect healing tissue
- Decrease pain/inflammation
- Retard muscular atrophy
- Protect graft site – allow healing

**Post-Operative Week 1**

- **Brace:** Posterior splint at 90 degrees elbow flexion
- **Range of Motion:** Wrist AROM ext/flexion immediately postoperative
  - Knee ROM day 1
- Elbow postoperative compression dressing (5-7 days)
- Calf (graft site) compression dressing 7-10 days
- **Exercises:**
  - Gripping exercises
  - Wrist ROM
  - Shoulder isometrics (No Shoulder ER)
  - Biceps isometrics
  - No involved leg exercises first week
- **Cryotherapy:** To elbow joint and to graft site below knee
- **Crutch:** Use one crutch as needed for 3-5 days

**Post-Operative Week 2**

- **Brace:** Elbow ROM 15-105 degrees
  - (Gradually increase ROM – 5 degrees Ext/10 degrees of Flex per week)
- **Exercises:**
  - Continue all exercises listed above
  - Elbow Range of Motion in brace (30-105 degrees)
  - Initiate elbow extension isometrics
  - Continue knee ROM exercises
  - Initiate light scar mobilization over distal incision (graft)
- **Cryotherapy:** Continue ice to elbow and graft site

**Post-Operative Week 3**

- **Brace:** Elbow ROM 5/10-115/120 degrees
- **Exercises:**
  - Continue all exercises listed above
  - Elbow ROM in brace
  - Initiate active ROM Wrist and Elbow (No resistance)
  - Initiate light hamstring stretching
Initiate active ROM shoulder;  
- Full can  
- Lateral raises  
- ER/IR tubing  
- Elbow flex/extension  
Initiate light scapular strengthening exercises  
Initiate bicycle for lower extremity ROM and strength  
May initiate light hamstring isometrics

II. INTERMEDIATE PHASE (Week 4-7)

Goals:  
Gradual increase to full ROM  
Promote healing of repaired tissue  
Regain and improve muscular strength  
Restore full function of graft site

Week 4

Brace:  
Elbow ROM 0-135 degrees

Exercises:  
Begin light resistance exercises for arm (1 lb)  
- Wrist curls, extensions, pronation, supination  
- Elbow extension/flexion  
Progress shoulder program emphasize rotator cuff & scapular strengthening  
Initiate shoulder strengthening with light dumbbells  
Isometrics for hamstrings and calf muscles

Week 5

ROM:  
Elbow ROM 0-135 degrees  
Discontinue brace

Continue all Exercises:  
Progress all shoulder and UE exercises (progress weight 1 lb.)

Week 6

AROM:  
0-145 degrees without brace or full ROM

Exercises:  
Initiate Thrower’s Ten Program  
Progress elbow strengthening exercises  
Initiate shoulder external rotation strengthening  
Progress shoulder program  
Initiate isotonic strengthening for graft site hamstrings/calf

Week 7

Progress Thrower’s Ten Program (progress weights)  
Initiate PNF diagonal patterns (light)

III. ADVANCED STRENGTHENING PHASE (Week 8-14)

Goals:  
Increase strength, power, endurance  
Maintain full elbow ROM  
Gradually initiate sporting activities
Week 8
Exercises: Initiate eccentric elbow flexion/extension
Continue isotonic program: forearm & wrist
Continue shoulder program – Thrower’s Ten Program
Manual resistance diagonal patterns
Initiate plyometric exercise program
  (2 hand plyos close to body only)
    - Chest pass
    - Side throw close to body
Continue stretching calf and hamstrings

Week 10
Exercises: Continue all exercises listed above
Program plyometrics to 2 hand drills away from body
  - Side to side throws
  - Soccer throws
  - Side throws

Week 12-14
Continue all exercises
Initiate isotonic machines strengthening exercises (if desired)
  - Bench press (seated)
  - Lat pull down
Initiate golf, swimming
Initiate interval hitting program

IV. RETURN TO ACTIVITY PHASE (Week 14-32)

Goals: Continue to increase strength, power, and endurance of upper extremity musculature
Gradual return to sport activities

Week 14
Exercises: Continue strengthening program
  Emphasis on elbow and wrist strengthening 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
Exercises: 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
Exercises: Progress to Phase II throwing (once successfully completed Phase I)

Week 30-32
Exercises: Gradually progress to competitive throwing/sports