

## UCL Repair / Reconstruction (Internal Brace or Tommy John) Rehabilitation Protocol

### Key Surgical Considerations

Rehabilitation after UCL repair or reconstruction focuses on protecting the healing graft or internal brace, restoring pain-free ROM, strengthening the flexor-pronator mass, rebuilding rotator cuff and scapular mechanics, and gradually reintroducing valgus loading through a structured throwing progression.

### PHASE I — Protection & Early Mobility (0–3 Weeks)

- Hinged brace 24/7 (30–100° week 0–1 → 10–110° week 2–3).
- PROM/AAROM only within brace limits.
- NO valgus stress or forced wrist flexion.
- Shoulder strengthening allowed at side only (no ER at 90°).

**Goal:** control pain, protect repair, begin gentle ROM.

### PHASE II — ROM Progression & Early Strength (3–6 Weeks)

- Brace: 0–125° by week 3–4 → discontinue at week 6.
- Progress ROM to full by week 6.
- Begin isotonic strengthening: biceps/triceps, wrist extension, radial deviation.
- No resisted wrist flexion or pronation until week 6–7.

**Goal:** restore near-full ROM and initiate light strengthening.

### PHASE III — Strengthening & Neuromuscular Control (6–12 Weeks)

- Begin wrist flexion and pronation strengthening (week 7+).
- Rotator cuff and scapular strengthening: ER/IR bands, rows, serratus punches.
- Proprioception: rhythmic stabilization, ball-on-wall drills.
- Avoid valgus loading and throwing.

**Goal:** restore forearm, cuff, and scapular strength.

### PHASE IV — Advanced Strengthening & Plyometrics (12–16 Weeks)

- Two-hand plyometrics: chest pass, side throws, wall dribbles.
- Flexor-pronator endurance circuits.
- Medicine ball core work.
- Light pressing only (short arc).

**Goal:** prepare arm for interval throwing program.

### PHASE V — Interval Throwing Program (4–6 Months)

- Internal Brace: begin throwing 4–5 months.
- Reconstruction: begin throwing 5–6 months.
- Structured return-to-throw progression with biomechanics focus.

**Goal:** gradual reintroduction of valgus load and throwing endurance.

### **PHASE VI — Return to Competition (9–12 Months)**

- Internal Brace: position players 7–9 months; pitchers 9+ months.
- Reconstruction: pitchers 9–12 months.
- Full pitching program: bullpen → simulated game → limited innings → full return.

**Goal:** full competitive return without pain or instability.

### **Selected References**

1. Dines JS, et al. UCL repair with internal brace: outcomes & rehab principles. *Am J Sports Med.* 2. Thompson J, et al. UCL reconstruction rehabilitation guidelines. *J Shoulder Elbow Surg.* 3. Wilk KE, et al. Elbow rehabilitation in throwing athletes. *J Orthop Sports Phys Ther.* 4. Camp CL, et al. Return-to-play outcomes after UCL procedures. *Orthop J Sports Med.*