Vanderbilt Sports Medicine
Ulnar Collateral Ligament Reconstruction
Rehabilition Protocol

General Comments:
The ulnar collateral ligament reconstruction (Tommy John operation) was developed by Frank Jobe, MD. It revolutionized baseball in giving players a chance to return to throwing in what used to be a career ending injury. It is currently thought that this injury develops from other alterations in the kinetic chain of throwing. It is critical to assess and treat posterior capsule tightness in the shoulder, rotator cuff weakness (particularly external rotation weakness), and core stability deficits during the recovery of this surgery.

PHASE I, IMMEDIATE MOTION (Weeks 0-4)
Goals:
Reestablish nonpainful range of motion
Decrease pain and inflammation
Retard muscular atrophy
Protect healing tissue graft site

1. Range of Motion Progression
    a. Posterior splint at 90 degree flexion for 5-7 days
    b. Week 2: Functional ROM brace (30-150 degrees); progressive increase ROM, by 5 degrees extension and 10 degrees flexion per week
    c. ROM at least 10-115 degrees in week 3 or full ROM if tolerated
    d. ROM 0-125 degrees in week 4, progress to full flexion; prevent flexion contracture.
2. Elbow Joint Compression Dressing (2-3 Days)
    a. Wrist and hand ROM and gripping exercises
    b. Ice and compression (assess neurologic status)
    c. Isometrics for shoulder and elbow joint
    d. Include scapular rehab and core stability
    e. Posterior shoulder capsule stretching
3. Week 2
    a. Initiate assisted ROM (30-100 degrees)
    b. Continue active assisted ROM
    c. Manual resistance drills (isometrics, tubing)
    d. Scar tissue management
4. Week 3
    a. ROM 15-110 degrees at least
    b. Continue stretching and ROM exercises
    c. Intitiate isotonic program; beging with 0 lbs and increase 1 lb per week
    d. Bicycle and easy lower extremity strengthening
    e. Baseline core strengthening

INTERMEDIATE PHASE (weeks 4-7)
Goals:
Gradually restore full ROM

Promote healing of repaired tissue
Restore strength, power and endurance
Restore rull function of graft site

1. Week 4
    a. ROM 10-125 degrees at least; assess for flextion contracture and lack of motion
    b. Initiate isotonics for entire arm and shoulder
    c. Active assisted ROM, progressive ROM, stretching
    d. Discontinue brace weeks 4-5
2. Weeks 5-6
    a. Full ROM 0-145 degrees
    b. Contiure progression of isotonic strengthening
    c. Manual resistance exercies for elbow and wrist; isotonic strengthening; manual resistance, tubing
    d. Progress core stabilization-incorporate UE movments
    e. Prevent scar tissue maturation

PHASE THREE (weeks 8-13)
Goals:
Improve arm strength, power,and endurance
Maintain full ROM
Gradually initiate sport activities

1. Weeks 8-10
    a. Thrower's Ten program
    b. Emphasize following:
        Concentric/eccentric biceps
        Concentric triceps
        Stabilization wrist flex/pronators
        Shoulder ER and scapular muscles
    c. Neuromuscular drills
    d. Two-hand plyometrics week 8 close to body-chest pass and side throw
2. Week 10
    a. Advande two-hand plyometrics away from body side-to-side, soccer throws, and side throws
    b. Wrist plyometrics
    c. Continue all exercises
    d. Advance core program
3. Weeks 12-13
    a. Continue all exercises
    b. May initiate isotonic machine exercises
        Bench press
        Seated row
        Lat pulldowns
        Biceps and triceps
    c. Progress to one-hand plyometircs 90/90 baseball throws

RETURN TO ACTIVITY PHASE (weeks 14-26)
Goals:
Continue improvement of power, strength, and endurance
Gradual return to sports

1. Weeks 14-15
    a. Initiate baseball throws into pitchback
    b. Continure Thrower's Ten Program
    c. Maintain flexibility and stretching
2. Week 16
    a. Intitiate interval throwing program (Phase 1): full ROM and satisfactory stability necessary for return to throwing
3. Weeks 22-26
    a. Intitiate interval throwing from mound (Phase II)
    b. Follow with long toss program
4. What to do when the athlete has medial elbow pain with throwing?
    a. Typically flexor-pronator tendonitis rather than UCL
    b. Acute inflammation often from:
        Tight wrist flexors
        Weak wrist flexors
        Decreased shoulder ROM
        Weak shoulder ER
    c. Key is to prevent. Do not begin throwing until ready
    d. Decrease pain and inflammation
        Abstain from throwing (1-2 weeks)
        Phonophoresis
        Iontopatch
        Ice
    e. Stretch wrist and shoulder
    f. Continue strengthening

Modified from Littlefield, trainer for NY Yankees in Caroll, William: Saving the Pitcher, pp 56-59, .