



Elbow Capitellum Osteochondritis Dissecans  
(OCD) Loose Body Removal and Microfracture

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- **Phase I – Immediate Post-Op Phase (Day 0-10)**
  - Goals
    - Protect healing tissue
    - Decrease pain/inflammation
    - Decrease muscular atrophy
  - Posterior splint at 90 degrees elbow flexion, applied at surgery
  - Hand/wrist ROM exercises
  
- **Phase II – Protection Phase (Week 2-6)**
  - Goals
    - Gradually restore elbow ROM
    - Improve muscular strength/endurance
    - Normalize joint arthrokinematics
  - Week 3
    - Brace/ROM
      - Applied at 10 day post-op visit
      - May remove brace for ROM exercises
      - Brace set at 0-120 degrees
      - Begin elbow PROM/AAROM 0-120
      - Initiate elbow AROM for flexion
    - Exercises
      - Hand/wrist isometrics
      - Light shoulder ROM/Strengthening
        - Leave brace in place
      - Scapular strengthening
      - Light isotonic wrist/elbow/shoulder exercises
      - Initiate Thrower's Ten (for throwers)
  - Week 4
    - Brace/ROM
      - 0-145 degrees

- Progress elbow- and wrist-strengthening
    - Initiate wrist and elbow flexion against manual resistance
  - Week 5
    - Brace ROM
      - 0-145 degrees
    - Exercises
      - Wrist curls, flexion, extension, pronation, supination
      - Progress shoulder ROM, strengthening emphasizing cuff
- Phase II – Intermediate Phase (Week 6-12)
  - Goals
    - Full ROM
    - Promote healing of tissue
    - Improve muscular strength
  - Criteria to progress to Phase II – Intermediate Phase
    - Elbow PROM near full
    - Minimal pain/tenderness
    - Good MMT through elbow/shoulder key muscles groups
  - Week 6
    - Brace/ROM
      - Continue until end of week 6
      - Progress ROM to full
    - Exercises
      - Initiate Advanced Thrower’s Ten (for throwers)
      - 2-hand plyometrics: chest pass, side-to-side throws, overhead pass
      - Progress shoulder program
        - Emphasis on cuff strengthening
        - No IR against resistance
      - Initiate shoulder strengthening with light dumbbells
  - Week 8-9
    - Exercises
      - Continue above and progress as tolerated
      - Continue with Advanced Thrower’s Ten (for throwers)
      - Progress to 1-hand plyometrics: 90/90 ball throw, 0 ball throw
      - Side planks with shoulder ER strengthening
  - Week 10-14
    - Criteria to progress to this stage:
      - Full, nonpainful elbow PROM, AROM
      - No tenderness
      - Appropriate strength of all muscle groups (at least 70% opposite side)
    - Exercises
      - Seated chest press machine
      - Seated row machine

- Biceps/Triceps machine or cables
- Interval hitting program (where appropriate)

- **Phase III – Dynamic Strengthening Phase (Week 12+)**

- Goals
  - Improve strength/power/endurance
  - Improve neuromuscular control
  - Maintain full elbow ROM
  - Gradual return to functional activities
- Criteria to progress to Phase III
  - Full elbow, wrist and shoulder ROM
  - No pain or tenderness
  - Satisfactory exam and muscle testing
- Week 12-16
  - Exercises
    - Continue shoulder program
    - Initiate plyometric program
    - Initiate Interval Throwing Program Phase I
      - Goal to complete 90 ft throws 3 weeks after ITP, 120 ft throws within 8 weeks after ITP
- Week 16-24
  - Exercises
    - Continue above exercises
    - Advance plyometrics
    - Initiate Interval Throwing Program Phase II when ready
    - Gradual return to competition when cleared by Dr. Hess and Physical Therapist

## EXERCISES INCLUDED IN THE THROWERS TEN EXERCISE PROGRAM

Diagonal-pattern D2 extension  
Diagonal-pattern D2 flexion  
Shoulder external rotation at 0° of abduction  
Shoulder internal rotation at 0° of abduction  
Shoulder abduction to 90°  
Shoulder scapular abduction, external rotation ("full cans")  
Sidelying shoulder external rotation  
Prone shoulder horizontal abduction  
Prone shoulder horizontal abduction (full external rotation, 100° of abduction)  
Prone rowing  
Prone rowing into external rotation  
Press-ups  
Push-ups  
Elbow flexion  
Elbow extension  
Wrist extension  
Wrist flexion  
Wrist supination  
Wrist pronation

All exercises are performed against resistance, with the goal to improve strength. Full description of the program is available.<sup>45,6</sup>

## EXERCISES INCLUDED IN THE ADVANCED THROWERS TEN EXERCISE PROGRAM

### Elastic Tubing/Band Resistive Exercises

Shoulder external rotation at 0° of abduction while seated on a stability ball\*  
Shoulder internal rotation at 0° of abduction while seated on a stability ball\*  
Shoulder extensions while seated on a stability ball<sup>1</sup>  
Lower trapezius isolation while seated on a stability ball<sup>1</sup>  
High row into shoulder external rotation while seated on a stability ball<sup>1</sup>  
Biceps curls/triceps extensions while seated on a stability ball<sup>1</sup>

### Isotonic Dumbbell Resistive Exercises

Full can while seated on a stability ball<sup>1</sup>  
Lateral raise to 90° while seated on a stability ball<sup>1</sup>  
Prone T's on stability ball<sup>1</sup>  
Prone Y's on stability ball<sup>1</sup>  
Prone row into external rotation on stability ball<sup>1</sup>  
Sidelying shoulder external rotation  
Wrist flexion/extension and supination/pronation

<sup>1</sup>Contralateral sustained hold performed during exercise.

<sup>2</sup>Exercises are performed in 3 distinct continuous movements per exercise: bilateral active exercise alternating reciprocal movement, and a sustained contralateral hold.

Ten to 15 repetitions are performed for each movement successively, without rest, to complete 1 set. The goal is the ability to perform 2 full cycles of the entire program without pain, using sound technique and no substitution. Full description of the program is available.<sup>52</sup>