

## Dr. Krunal Shah

7-10 LG, Shilp Apartment Opp. Gokulam Dairy,  
Adarsh Soc., Athwalines, Athwa, Surat, Gujarat 395001, India  
+91 7600004080  
<http://www.aasthajoints.com>

### **Phase I MAXIMAL PROTECTION (0-4 Weeks Post-Op)**

- ❑ **Immobilization** for 4 weeks using sling.
- ❑ Elbow A/AAROM: flexion and extension.
- ❑ **Protect anterior and posterior capsule from stretch, but begin passive ROM**
- ❑ Limit FE (supine forward elevation in the scapular plane) to 90 degrees
- ❑ Limit ER (external rotation) to neutral 30 degrees
- ❑ **Do Not** perform Pendulums.
- ❑ Modalities (i.e. CryoCuff) PRN(as needed).
- ❑ Wrist and gripping exercises.
- ❑ Begin Deltoid/Cuff **isometrics**
- ❑ Removal of sling for showering: **maintain arm in sling position.**

### **Phase II MODERATE PROTECTION (4-6 Weeks Post-Op)**

- ❑ A/AAROM Limit FE (forward elevation in the scapular plane) to 140 degrees
- ❑ A/AAROM Limit ER (external rotation) to 45 degrees
- ❑ Progress from AAROM to AROM:
  - 1) Quality movement only-**avoid forcing** active motion with substitution patterns.
  - 2) Remember the effects of gravity on the limb, do gravity eliminated motions first ie. Supine elevation in the scapular plane.
- ❑ Deltoid isometrics.
- ❑ Elbow AROM
- ❑ Continue with wrist exercises
- ❑ Modalities PRN.
- ❑ Discontinue sling at 4-6 weeks.

### **Phase III MINIMAL PROTECTION / MILD STRENGTHENING (6-12 Weeks Post-OP)**

- ❑ A/AAROM No Limit FE (forward elevation in the scapular plane)
- ❑ A/AAROM No Limit ER (external rotation)
- ❑ 10-12 weeks, AIAA/PROM to improve ER with arm in **45 degree** abduction.
- ❑ AROM all directions below horizontal, light resisted motions in all planes.
- ❑ AROM activities to restore flexion, IR, horiz ADD as tolerated.
- ❑ Deltoid, Rotator Cuff isometrics progressing to isotonic.
- ❑ PRE's for scapular muscles, latissimus, biceps, triceps.
- ❑ PRE's work rotators in isolation (use modified neutral).

- ❑ Emphasize **posterior cuff, latissimus, and scapular muscle** strengthening, stressing eccentrics.
- ❑ Utilize **exercise arcs** that protect anterior and posterior capsule from stress during PRE's.
- ❑ Keep **all** strength exercises below the **horizontal plane** in this phase.

#### **Phase IV STRENGTHENING (12-16 Weeks Post-Op)**

- ❑ CRITERIA:
  - 1) Pain-free AROM
  - 2) Pain-free with manual muscle test
  - 3) Progress by response to treatment
- ❑ AROM activities to restore full ROM.
- ❑ Restore scapulohumeral rhythm.
- ❑ Joint mobilization.
- ❑ Aggressive scapular stabilization and eccentric strengthening program.
- ❑ Initiate isotonic shoulder strengthening exercises including: side lying ER, prone arm raises at 0, 90, 120 degrees, elevation in the plane of the scapula with IR and ER, lat pulldown close grip, and prone ER.
- ❑ Dynamic stabilization WB and NWB.
- ❑ PRE's for all upper quarter musculature (begin to integrate upper extremity patterns). Continue to emphasize eccentrics and glenohumeral stabilization.
- ❑ All PRE's are below the horizontal plane for non-throwers.
  - 1) Begin isokinetics.
  - 2) Begin muscle endurance activities (UBE).
    - High seat and low resistance
    - Must be able to do active shoulder flexion to 90 degrees without substitution
  - 3) Continue with agility exercises.
  - 4) Advanced functional exercises.
  - 5) Isokinetic test.
  - 6) Functional test assessment.
  - 7) Full return to sporting activities.