

## Supplemental material 5

**Table 1.** Summary of rehabilitation programs postoperative.

| Author (year)             | Early Rehabilitation  | Conservative Rehabilitation  |
|---------------------------|---|--|
| Arndt et al., 2012 [35]   | <p><b>IP:</b> Sling for 6 weeks</p> <p><b>First day postoperative-week 6:</b> Pendulum exercise + manual passive ROM + CPM (3-5x pw)</p> <p><b>Week 6-4 Months:</b> Active ROM</p> <p><b>4 months-on:</b> Strengthening exercises</p>   | <p><b>IP:</b> Sling for 6 weeks</p> <p><b>Week 0-6:</b> Immobilisation + Pendulum exercise</p> <p><b>Week 6-4 Months:</b> Active ROM</p> <p><b>4 Months-on:</b> Strengthening exercises</p>  |
| Cote & Mazzocca [33]      | <p><b>IP:</b> NA</p> <p>Started after 2 to 3 days of surgery</p>  | <p><b>IP:</b> NA</p> <p>Started after 28 days of surgery</p>   |
| Cuff & Puppelo, 2012 [25] | <p><b>IP:</b> Shoulder immobiliser for 6 weeks</p> <p>Started in the second day post-surgery; 3x pw</p> <p><b>Week 0-3:</b> Pendulum exercise + passive flexion and external rotation + active elbow, wrist and hand ROM</p> <p><b>Week 4-6:</b> Similar to week 0-3 + progressing ROM + active elbow, wrist and hand ROM</p> <p><b>Week 6-10:</b> Active-assisted ROM</p> <p><b>Week 10-12:</b> Active-assisted ROM + active ROM</p> <p><b>Week 12-on:</b> Strengthening</p> | <p><b>IP:</b> Shoulder immobiliser for 6 weeks</p> <p>Started after 6 weeks of surgery</p> <p><b>Week 0-3:</b> Pendulum exercise 3x daily for 5 minutes + active elbow, wrist and hand ROM</p> <p><b>Week 4-6:</b> Pendulum exercise 3x daily for 5 minutes + active elbow, wrist and hand ROM</p> <p><b>Week 6-10:</b> Passive ROM + <b>week 7</b> active assisted ROM 1x pw</p> <p><b>Week 10-12:</b> Active-assisted ROM + active ROM</p> <p><b>Week 12-on:</b> Strengthening</p> |

*Continue*

**Table 1 (continue).** Summary of rehabilitation programs postoperative

|                              |   |  |
|------------------------------|---|--|
| De Roo et al., 2015<br>[44]  | <p><b>IP:</b> Brace with abduction pillow (30°) for 4 weeks during day and night + 2 more weeks only at night</p> <p><b>First day postoperative – week 5:</b> Pendulum exercise (3x pd, 10 minutes each, 20 cm diameter) + Passive shoulder flexion, abduction, internal and external rotation + scapular mobilization (5 days pw)</p> <p><b>Week 5-8:</b> Specific capsular glenohumeral exercises + Active-assisted shoulder exercises</p> <p><b>Week 8-on:</b> Started strengthening</p> | <p><b>IP:</b> Brace with abduction pillow (30°) for 4 weeks during day and night + 2 more weeks only at night</p> <p><b>Week 1-4:</b> Pendulum exercise</p> <p><b>Week 5:</b> Gradual passive mobilization</p> <p><b>Week 6-on:</b> Similar to early mobilisation group; no further details available</p>  |
| Deutsch et al., 2007<br>[32] | <p><b>IP:</b> Ultrasling for 6 weeks</p> <p><b>First day postoperative:</b> Pendulum exercise</p> <p><b>Day 7:</b> Passive external rotation stretching + passive shoulder flexion ROM</p>  | <p><b>IP:</b> Ultrasling for 6 weeks</p> <p><b>First day postoperative:</b> Pendulum exercise</p> <p><b>Day 7:</b> Passive external rotation stretching</p> <p><b>Week 4:</b> Passive shoulder flexion ROM</p>   |
| Duzgun et al., 2014<br>[45]  | <p><b>IP:</b> 2 weeks</p> <p><b>Week 2-7:</b> Soft tissue mobilization for the scapulothoracic and glenohumeral joints along with motion exercises (3x week for all weeks).</p> <p><b>Week 3:</b> Active ROM exercises with scapular plane elevation, flexion and abduction</p> <p><b>Week 4:</b> Light resistive exercises with rubber bands.</p>  | <p><b>IP:</b> 4 weeks</p> <p><b>Week 4-17:</b> Soft tissue mobilization for the scapulothoracic and glenohumeral joints along with motion exercises (3x week for all weeks).</p> <p><b>Week 6:</b> Active ROM exercises with scapular plane elevation, flexion and abduction.</p> <p><b>Week 8:</b> Light resistive exercises with rubber bands.</p> |

*Continue*

**Table 1 (continue).** Summary of rehabilitation programs postoperative

Duzgun et al., 2011  
[36]

**IP:** NA

**Week 0-1:** Cold pack every 2 hours for 20 min

**Week 1-2:** Cold pack + deltoid and biceps soft-tissue mobilisation + passive flexion and abduction ROM + active elbow and neck ROM + hand strengthening

**Week 2-3:** Cold pack + passive flexion + active elbow and scapula ROM + GH mobilization

**Week 3-4:** Cold pack + scapular mobilization + active flexion, internal rotation, abduction + strengthening for biceps, triceps and serratus anterior using rubber bands

**Week 4-5:** Cold pack + active shoulder flexion + strengthening of shoulder abduction, internal rotation, external rotation with rubber bands

**Week 5-6:** Cold pack + progression of strengthening exercises for shoulder with more resistant rubber bands + posterior capsule stretching

**Week 6:** Week 5-6 + Resistive PNF patterns

**Week 7:** Wall shoulder push-up + On-the-table press-up + on-the-table push-up

**IP:** NA

**Week 0-4:** Week 0-1

**Week 4-6:** Week 2-3

**Week 6-8:** Week 3-4

**Week 8-10:** Week 4-5

**Week 10-14:** Week 5-6

**Week 14-18:** Week 6

**Week 18-22:** Week 7

---

*Continue*

**Table 1 (continue).** Summary of rehabilitation programs postoperative

---

|                          |   |   |
|--------------------------|---|---|
| Keener et al., 2014 [37] | <p><b>IP:</b> Sling for 6 weeks<br/> <b>Immediate postoperative:</b> Pendulum exercise + active elbow, wrist and hand ROM<br/> <b>Week 1-6:</b> Passive shoulder ROM performed by therapist<br/> <b>Week 6-12:</b> Active assisted and active shoulder ROM<br/> <b>3-4 Months:</b> Deltoid and scapular stabilizer strengthening<br/> <b>4 Months - on:</b> Full activities based on patient's progress</p> | <p><b>IP:</b> Sling for 6 weeks<br/> <b>Immediate postoperative:</b> Active elbow, wrist and hand ROM<br/> <b>Week 1-6:</b> Shoulder immobilised<br/> <b>Week 6-12:</b> Early week 1-6<br/> <b>3-4 Months:</b> Early week 6-12<br/> <b>4 Months - on:</b> Early 3-4 months, full activities between 5 and 6 months based on patients progress</p> |
| Kim et al., 2012 [39]    | <p><b>IP:</b> Brace with abduction pillow (30°) during 4 or 5 weeks<br/> <b>First day postoperative- week 4/5:</b> Passive shoulder flexion, abduction and external rotation ROM + active elbow, wrist and hand ROM + shrugging of shoulders<br/> <b>Week 4/5:</b> Active-assisted shoulder ROM<br/> <b>Week 9/12:</b> Muscle strengthening<br/> <b>6 Months:</b> Return of activities</p>                  | <p><b>IP:</b> Brace with abduction pillow (30°) during 4 or 5 weeks<br/> <b>First day postoperative- week 4/5:</b> Active elbow, wrist and hand ROM + shrugging of shoulders<br/> <b>Week 4/5:</b> Active-assisted shoulder ROM<br/> <b>Week 9/12:</b> Muscle strengthening<br/> <b>6 Months:</b> Return of activities</p>                        |

*Continue*

**Table 1 (continue).** Summary of rehabilitation programs postoperative

---

|                       |   |   |
|-----------------------|---|---|
| Koh et al., 2014 [40] | <p><b>IP:</b> Sling with an abduction pillow (20°) during 4 weeks</p> <p><b>Week 5-10:</b> Passive ROM with rope, pulley and cane + home-based exercise</p> <p><b>Week 11- 6 Months:</b> Strengthening</p> <p><b>6 Months:</b> Return to normal activities</p>  | <p><b>IP:</b> Sling with an abduction pillow (20°) during 8 weeks</p> <p><b>Week 9-14:</b> Passive ROM with rope, pulley and cane + home-based exercise</p> <p><b>Week 15 – 6 Months:</b> Strengthening</p> <p><b>6 Months:</b> Return to normal activities</p>   |
| Lee et al., 2012 [41] | <p><b>IP:</b> Sling with an abduction pillow (30°) during 6 weeks</p> <p><b>First day postoperative – week 6:</b> Passive shoulder flexion and external rotation ROM by physiotherapist (2x pd) + pendulum exercises + self-passive shoulder ROM (3x pd) + home-based exercises</p> <p><b>Week 6-on:</b> Active-assisted shoulder ROM + passive ROM for all movements</p> | <p><b>IP:</b> Sling with an abduction pillow (30°) during 6 weeks</p> <p><b>First day postoperative – week 3:</b> Self-passive shoulder flexion + CPM (2x pd)</p> <p><b>Week 3-6:</b> Self-passive shoulder ROM (2x pd)</p> <p><b>Week 6-on:</b> Active-assisted shoulder ROM + passive ROM for all movements</p> |

---

CPM: Continuous Passive Motion, GH: glenohumeral, IP: Immobilisation Period, pd: per day, pw: per week, NA: Not Available, PNF: Proprioceptive neuromuscular facilitation, ROM: Range Of Motion.