

## Post-Operative Rehabilitation Plan for Clavicle ORIF

These guidelines are intended to assist clinicians in managing the recovery process following clavicle ORIF (Open Reduction and Internal Fixation) surgery. The protocol is structured around both time (dependent on tissue healing) and specific criteria. Treatment should be tailored to meet the individual needs of each patient, taking into account examination findings and clinical judgment. Expected outcomes may vary depending on the surgeon's preferences, additional procedures, and any complications. If there are uncertainties about patient progress, clinicians should consult with the referring surgeon.

The interventions outlined in this protocol are not exhaustive. Therapeutic strategies should be adapted based on the patient's progress and at the clinician's discretion.

### Considerations for Post-Operative Clavicle ORIF Rehabilitation

Several factors can influence rehabilitation outcomes after clavicle ORIF, including bone health, blood supply, pre-operative shoulder range of motion (ROM), strength, and function. Additional considerations include patient age and comorbidities such as increased BMI, smoking, and diabetes. Close collaboration with the referring physician is recommended to tailor ROM or loading guidelines for each case.

### Post-Operative Complications

If you experience any of the following symptoms; fever, unresolving numbness/tingling, excessive drainage from the incision, uncontrolled pain, or any other symptoms please contact your referring physician.

## PHASE I: IMMEDIATE POST-OP (WEEKS 1-4 AFTER SURGERY)

<b>Rehabilitation Goals</b>	<ul style="list-style-type: none"> <li>• Protect healing bone and soft tissue</li> <li>• Minimize pain and inflammation</li> <li>• Restore shoulder PROM</li> <li>• Maintain elbow wrist and hand ROM</li> </ul>
<b>Sling</b>	<ul style="list-style-type: none"> <li>• Wear sling for at least 3 weeks. Sling should be taken off at least four times per day to perform exercises and daily activities such as eating, dressing, and bathing</li> <li>• Sling should be worn while sleeping</li> </ul>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• No active motion of involved shoulder</li> <li>• No lifting or carrying objects with involved arm</li> <li>• No weight bearing through involved arm</li> <li>• No shoulder flexion or abduction beyond 90 degrees</li> </ul>
<b>Interventions</b>	<p><i>Pain/Swelling management</i></p> <ul style="list-style-type: none"> <li>• Cryotherapy and modalities as needed</li> </ul> <p><i>Range of motion/Mobility</i></p> <ul style="list-style-type: none"> <li>• PROM: ER and IR in the plan of the scapular to tolerance. Flexion/Scaption/abduction <math>\leq</math> 90 degrees. Table slides, pendulums</li> <li>• AAROM: Shoulder ER c dowel/cane in neutral</li> <li>• AROM: Elbow, wrist, hand, and cervical AROM</li> </ul> <p><i>Strengthening (Week 2)</i></p> <ul style="list-style-type: none"> <li>• Elbow, wrist, hand: resisted wrist extension, resisted wrist flexion, resisted pronation/supination, ball squeezes</li> </ul> <p><i>Cardio</i></p> <ul style="list-style-type: none"> <li>• Walking with arm in sling</li> <li>• Recumbent bike with arm in sling</li> </ul>

## PHASE I: IMMEDIATE POST-OP

(WEEKS 1-4 AFTER SURGERY) CONTINUED

<b>Criteria to Progress</b>	<ul style="list-style-type: none"> <li>• 90 degrees PROM Flexion/Scaption</li> <li>• 30 degrees shoulder PROM ER</li> <li>• IR PROM to belt line</li> <li>• &lt; 4/10 pain at rest</li> <li>• Full elbow, wrist and hand AROM</li> </ul>
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## PHASE II: INTERMEDIATE POST-OP

(WEEKS 5-8 AFTER SURGERY)

<b>Rehabilitation Goals</b>	<ul style="list-style-type: none"> <li>• Wean from sling</li> <li>• Progress shoulder PROM, AA/AROM</li> <li>• Improve distal arm strength</li> <li>• Decrease pain.</li> </ul>
<b>Sling</b>	<ul style="list-style-type: none"> <li>• Continue to use sling for sleep up until 6 weeks post op</li> <li>• Can wean from sling throughout the day and discharge sling completely at 6 weeks post op</li> </ul>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• No lifting or carrying objects &gt; a coffee cup with involved arm</li> <li>• No forceful stretching of involved shoulder or positions that cause pain</li> </ul>
<b>Additional Intervention</b> *Continue with Phase I interventions	<p><i>Range of motion/Mobility</i></p> <ul style="list-style-type: none"> <li>• PROM: Full shoulder PROM in all planes of motion per tolerance</li> <li>• AAROM: Supine shoulder flexion with dowel (Lawn Chair progression), standing shoulder flexion with dowel, rail slides, wall slides, pulleys</li> <li>• AROM: Supine shoulder flexion, standing shoulder flexion, seated shoulder ER, side-lying shoulder ER</li> </ul> <p><i>Strengthening</i></p> <ul style="list-style-type: none"> <li>• Periscapular: scap retraction, prone scap retraction, low row, mid row, resisted straight arm extension, supine serratus punches</li> <li>• Elbow: biceps curls, triceps extension</li> </ul> <p><i>Cardio</i></p> <ul style="list-style-type: none"> <li>• Walking with arm out of sling</li> <li>• Recumbent bike</li> <li>• Stationary bike after 6 weeks, or if cleared by surgeon</li> </ul>
<b>Criteria to Progress</b>	<ul style="list-style-type: none"> <li>• Full shoulder PROM</li> <li>• 120 degrees or greater shoulder AAROM flexion</li> <li>• &gt; 30 degrees shoulder ER AROM</li> <li>• Minimal compensation pattern with shoulder movements</li> <li>• &lt; 4/10 pain with shoulder AROM</li> </ul>

## PHASE III: LATE POST-OP

(WEEKS 9-12 AFTER SURGERY)

<b>Rehabilitation Goals</b>	<ul style="list-style-type: none"> <li>• Maximize shoulder AROM</li> <li>• Initiate shoulder girdle muscle activation</li> </ul>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• No lifting objects &gt; 5 lbs</li> </ul>

**PHASE III: LATE POST-OP**  
(WEEKS 9-12 AFTER SURGERY) CONTINUED

<p><b>Additional Intervention</b> *Continue with Phase I-II interventions</p>	<p><i>Range of motion/Mobility</i></p> <ul style="list-style-type: none"> <li>• AROM: Continue to progress shoulder AROM and minimize compensatory patterns</li> <li>• Stretching: Lat stretch, doorway stretch, pec/biceps stretch, posterior capsule stretch, sleeper stretch</li> </ul> <p><i>Strengthening:</i></p> <ul style="list-style-type: none"> <li>• Shoulder: Isometric flexion, Isometric extension, Isometric ER, Isometric IR, resisted IR, resisted ER</li> </ul> <p><i>Cardio</i></p> <ul style="list-style-type: none"> <li>• Biking</li> <li>• Swimming if cleared by surgeon</li> <li>• Running if cleared by surgeon</li> </ul>
<p><b>Criteria to Progress</b></p>	<ul style="list-style-type: none"> <li>• <math>\geq</math> 90% shoulder AROM compared to uninvolved side</li> <li>• Appropriate muscle activation with isometric contraction of rotator cuff and periscapular muscles</li> </ul>

**PHASE IV: TRANSITIONAL**  
(WEEKS 12-16 AFTER SURGERY)

<p><b>Rehabilitation Goals</b></p>	<ul style="list-style-type: none"> <li>• Initiate and progress isotonic shoulder strengthening</li> <li>• Return to normal ADLs</li> </ul>
<p><b>Precautions</b></p>	<ul style="list-style-type: none"> <li>• No strengthening or functional activities until near full ROM is achieved.</li> <li>• Avoid long-lever arm resistance for elbow flexion and supination.</li> </ul>
<p><b>Additional Intervention</b> *Continue with Phase I-II interventions</p>	<p><i>Range of motion/Mobility</i></p> <ul style="list-style-type: none"> <li>• Continue with ROM and stretching exercises as needed</li> </ul> <p><i>Strengthening</i></p> <ul style="list-style-type: none"> <li>• Shoulder: wall push-ups, scaption raises, serratus roll ups, chest pulls, rhythmic stabilizations, plantigrade shoulder taps</li> </ul> <p><i>Cardio</i></p> <ul style="list-style-type: none"> <li>• Swimming, Running, Biking, Elliptical</li> </ul>
<p><b>Criteria to Progress</b></p>	<ul style="list-style-type: none"> <li>• Good form with strengthening exercise</li> <li>• Full shoulder ROM</li> <li>• 0/10 pain at rest, <math>\leq</math> 3/10 pain with resisted exercises</li> <li>• 4/5 shoulder strength or greater</li> <li>• No difficulties with ADL and light work-related activities</li> </ul>

**PHASE V: RETURN TO SPORT**  
(MONTHS 4-6 AFTER SURGERY)

<p><b>Rehabilitation Goals</b></p>	<ul style="list-style-type: none"> <li>• Progressive strengthening and stability of involved shoulder</li> <li>• Return to normal sport activities</li> </ul>
<p><b>Additional Intervention</b> *Continue with Phase II-IV interventions</p>	<p><i>Strengthening</i></p> <ul style="list-style-type: none"> <li>• Counter push-ups, standard push-ups, resisted IR in abduction, resisted ER in abduction, wall walks, face-pulls, resisted PNF diagonals,</li> <li>• Interval return to sport training</li> </ul>



**PHASE V: RETURN TO SPORT**  
(MONTHS 4-6 AFTER SURGERY) CONTINUED

**Criteria to Progress**

- 90% strength or greater of involved shoulder compared to uninvolved side with dynamometry testing
- 0% disability on Quick DASH
- No pain with strength training

For further assistance or to schedule an appointment, please contact **iOrtho - The Orthopedic Institute** at **833-464-6784** or visit our website at **iorthomd.com** to text/email us. Our team is dedicated to providing personalized care and guidance throughout your rehabilitation journey.