

# Clinical Protocols for Frozen Shoulder Treatment

## Progression and Evaluation

- Progression is time and criterion-based, depending on soft tissue healing, patient demographics, and clinician evaluation.
- For questions, contact Dr. Sujan Gogu's clinic.

## Overview of Adhesive Capsulitis

Adhesive capsulitis is marked by a painful, slow loss of both active and passive glenohumeral shoulder motion due to fibrosis and contracture of glenohumeral joint capsule. Primary adhesive capsulitis is a condition which affects about 2%-5.3% of overall population. Diabetes and thyroid illness leads to secondary adhesive capsulitis with an incidence rate of 4.3% to 38%.

## Classification

There are in general two types of adhesive capsulitis.

- **Primary adhesive capsulitis:**

It is idiopathic and not linked to any previous injury or clinical disorder.

- **Secondary adhesive capsulitis:**

It might be caused by an injury, disease or other conditions.

## Risk Factor

- Age Range: 40 to 65 years old
- Gender: Female
- Autoimmune Disorder
- Diabetes Mellitus
- Patient may experience specific conditions such as myocardial infraction, continuous loss of mobility, thyroid disease or trauma

## Examination

- Assess pain, postural alignment, shoulder PROM/AROM, strength, functional elevation, key impairments of body function and transnational glide of the glenohumeral (GH joint)
- **Outcome Measures:** DASH,ASES, SPADI
- **Activity Limitation:** Might experience pain during sleep, difficulty with grooming and dressing, pain associated with activities which involves reaching shoulder level, behind the back and overhead.
- **Impairment:** Can cause decreased ROM in both active and passive shoulder, and loss of glenohumeral joint function

### Intervention

- Corticosteroid injections can relieve pain and alleviate inflammation.
- Patient Education is crucial for reducing fear, limits self mobilization, foster
- Therapists suggest heat, ice and hands-on treatments for stretching the shoulder joint capsule.
- Stretching exercises: can help in ROM and lessening pain.
- Manipulation under anesthesia if sensitive to physical therapy

### Discharge Criteria

- Effective Pain Management
- Maintain and achieve proper posture
- Enhanced Range of Motion and matches to uninjured side
- Stronger strength and endurance of muscular performance
- Productive use of impaired UE
- Joint Biomechanics and normal functioning of glenohumeral (GH)

### Differential Diagnosis

- **Inflammatory Conditions:** Tendonitis/Bursitis such as Acute calcific tendinitis, general bursitis
- **Labral Pathology:** Tears or lesions of the labrum
- **Arthritis Variants:** Rheumatoid arthritis, infectious pyogenic arthritis

- **Joint Disorders:** Shoulder arthrosis, bursitis, osteoarthritis of the AC or GH joint, cervical spine issues
- **Bone Health Issues:** Avascular Necrosis, Osteoporosis with pathological fractures
- **Spinal Conditions:** Cervicalgia, cervical disc disorders, Thoracic spine pain
- **Neurological issues:** Cervico-brachial syndrome, radiculopathy
- **Injuries:** Shoulder or upper arm contusions, fractures of clavicle, scapula or humerus
- **Soft Tissue Disorder:** Rotator cuff syndrome, fibromyalgia, sprains/strains of AC/SC/GH joint, tendinopathies of the supraspinatus, infraspinatus or biceps

Clinical Course		
Phase	Duration	Stage Details
I (Pain and Pre-adhesive Stage)	3 months	<p><b>Symptoms:</b></p> <ul style="list-style-type: none"> <li>● Acute pain at the end of Range of Motion (ROM)</li> <li>● Aching pain at rest</li> <li>● Sleeplessness</li> <li>● Early impairment of ER ROM</li> </ul> <p><b>Pathophysiology:</b></p> <ul style="list-style-type: none"> <li>● A diffused synovial response without adhesion or contracture</li> </ul> <p><b>Therapeutic Modalities:</b> Heat, Ice, Electric Stimulation</p> <p><b>Exercises:</b></p> <ul style="list-style-type: none"> <li>● Daily home exercise</li> <li>● Passive and active ROM exercises such as Codman's , table/wall slides, and exercises with help of cane.</li> <li>● Postural correction and scapular retraction exercises</li> <li>● 5-10 second hold of end-range GH stretches involving joints</li> <li>● Mobilize GH joint with long axis distraction to enhance ROM</li> </ul> <p><b>Progression Criteria:</b></p>

		<ul style="list-style-type: none"> <li>● Ability to tolerate a 10-second long stretches of joint at end range</li> <li>● Achieve a full active ROM in extension</li> <li>● Significant Improvement in the AROM for flexion, External Rotation, Internal Rotation and abduction</li> </ul>
<p style="text-align: center;"><b>II</b> <b>(Freezing/ Adhesive Stage)</b></p>	<p style="text-align: center;">3-9 months</p>	<p><b>Symptoms:</b></p> <ul style="list-style-type: none"> <li>● Progressive reduction of mobility in all direction due to increased pain</li> </ul> <p><b>Pathophysiology:</b></p> <ul style="list-style-type: none"> <li>● Severe joint synovitis and new blood vessel formation with restricted movement even under anesthesia</li> </ul> <p><b>Therapeutic Modalities:</b> Heat, Ice, Electric Stimulation</p> <p><b>Exercises:</b></p> <ul style="list-style-type: none"> <li>● Daily home exercise</li> <li>● Passive and active ROM exercises such as Codman's , table/wall slides, and exercises with help of cane.</li> <li>● Postural correction and scapular retraction exercises</li> <li>● 15-20 second hold of end-range GH stretches involving joints</li> <li>● Mobilize GH joint with long axis distraction to enhance ROM</li> </ul> <p><b>Progression Criteria:</b></p> <ul style="list-style-type: none"> <li>● Ability to tolerate a 20-second long stretches of joint at end range</li> <li>● Achieve a full active ROM in extension</li> <li>● Significant Improvement in the AROM for flexion, External Rotation, Internal Rotation and abduction</li> </ul>
<p style="text-align: center;"><b>III</b> <b>(Frozen/ Fibrotic Stage)</b></p>	<p style="text-align: center;">9-15 months</p>	<p><b>Symptoms:</b></p> <ul style="list-style-type: none"> <li>● Pain and loss of mobility</li> </ul> <p><b>Pathophysiology:</b></p> <ul style="list-style-type: none"> <li>● Chronic developing of fibrosis of capsul and ligaments leading to disappearance of the axillary fold</li> </ul>

		<p>and reduced ROM</p> <p><b>Therapeutic Modalities:</b> Heat, Ice, Electric Stimulation</p> <p><b>Exercises:</b></p> <ul style="list-style-type: none"> <li>● Daily home exercise</li> <li>● Passive and active ROM exercises such as Codman's , table/wall slides, and exercises with help of cane.</li> <li>● Postural correction and scapular retraction exercises</li> <li>● 20-30 second hold of end-range GH stretches involving joints</li> <li>● Mobilize GH joint with long axis distraction to enhance ROM</li> <li>● Perform gravity resistant strength exercises targeting the scapular muscles, rotator cuff and deltoids</li> </ul> <p><b>Progression Criteria:</b></p> <ul style="list-style-type: none"> <li>● Ability to tolerate a 30-second long stretches of joint at end range</li> <li>● Achieve a full active ROM in extension</li> <li>● Able to perform gravity resistant strength exercises aiming for 1 set of 30 repetitions for each exercise</li> </ul>
<p style="text-align: center;"><b>IV (Thawing Stage)</b></p>	<p style="text-align: center;">15-14 months</p>	<p><b>Symptoms:</b></p> <ul style="list-style-type: none"> <li>● Decreased pain but acute stiffness continues</li> </ul> <p><b>Pathophysiology:</b></p> <ul style="list-style-type: none"> <li>● Fibrotic capsulo-ligamentous complex begins to soften and synovial involvement decreased</li> </ul> <p><b>Therapeutic Modalities:</b> Heat, Ice, Electric Stimulation</p> <p><b>Exercises:</b></p> <ul style="list-style-type: none"> <li>● Daily home exercise</li> <li>● Passive and active ROM exercises such as Codman's , table/wall slides, and exercises with help of cane.</li> <li>● Postural correction and scapular retraction exercises</li> <li>● 20-30 second hold of end-range GH stretches</li> </ul>

involving joints

- Mobilize GH joint with long axis distraction to enhance ROM
- Perform gravity resistant strength exercises targeting the scapular muscles, rotator cuff, biceps, triceps and deltoids by help of therabands, free weights, PNF stretching and closed kinetic chain exercise

**Progression Criteria:**

- Ability to tolerate a 30-second long stretches of joint at end range
- Achieve a full active ROM in extension
- Enhanced strength of muscles
- Productive use of impaired UE
- Able to perform gravity resistant strength exercises aiming for 1 set of 30 repetitions for each exercise
- Normal functioning of glenohumeral (GH)