Adhesive Capsulitis: Clinical Practice Guidelines

**Evaluation/Intervention Component 1: medical screening**
- Appropriate for physical therapy evaluation and intervention
- Appropriate for physical therapy evaluation and intervention along with consultation with another healthcare provider
- Not appropriate for physical therapy evaluation and intervention

**Evaluation/Intervention Component 2: differential evaluation of clinical findings suggestive of musculoskeletal impairments of body functioning (ICF) and the associated tissue pathology/disease (ICD)**
- Consultation with appropriate healthcare provider

**Shoulder pain and mobility deficits/adhesive capsulitis**
- **Rule in if:**
  - Patient's age is between 40 and 65 years
  - Patient reports a gradual onset and progressive worsening of pain and stiffness
  - Pain and stiffness limit sleeping, grooming, dressing, and reaching activities
  - Glenohumeral passive range of motion (ROM) is limited in multiple directions, with external rotation the most limited, more particularly in adduction
  - Glenohumeral external or internal rotation ROM decreases as the humerus is abducted from 45° toward 90°
  - Passive motions into the end ranges of glenohumeral motions reproduce the patient's reported shoulder pain
  - Joint glides/accessory motions are restricted in all directions
- **Rule out if:**
  - Passive ROM is normal
  - Radiographic evidence of glenohumeral arthritis is present
  - Passive glenohumeral external or internal rotation ROM increases as the humerus is abducted from 45° toward 90° and the reported shoulder pain is reproduced with palpatory provocation of the subscapularis myofascia
  - Upper-limb nerve tension testing reproduces the reported symptoms and shoulder pain can be increased or decreased with altering nerve tension positions
  - Shoulder pain is reproduced with palpatory provocation of the relevant peripheral nerve entrapment site

**Shoulder pain and movement coordination impairments/dislocation of shoulder joint, or sprain and strain of shoulder joint**
- **Rule in if:**
  - Patient's age is less than 40 years
  - History of shoulder dislocation
  - Excessive glenohumeral accessory motions in multiple directions
  - Apprehension at end ranges of flexion, horizontal abduction, and/or external rotation
- **Rule out if:**
  - No history of dislocation
  - Presence of global glenohumeral motion limitations
  - No apprehension with end-range shoulder active or passive motions

**Shoulder stability and movement deficits/rotator cuff syndrome**
- **Rule in if:**
  - Symptoms developed from, or worsen with, repetitive overhead activities or from an acute strain such as a fall onto the shoulder
  - Midrange (about 90°) catching sensation/arc of pain with active elevation
  - Manual resistive tests to the rotator cuff muscles, performed in midranges of shoulder flexion and abduction, reproduce the patient's reported shoulder pain
  - Rotator cuff muscle weakness
- **Rule out if:**
  - Resistive tests are pain free
  - Supraspinatus, infraspinatus, and biceps brachii have normal strength
  - Significant loss of passive motion

Figure continues on page 2.
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Evaluation/Intervention Component 3: diagnosis of tissue irritability level

High Irritability
Characterized by:
• Reports high levels of pain (≥7/10)
• Consistent night or resting pain
• High levels of reported disability on standardized self-report outcome tools
• Pain occurs before end ranges of active or passive movements
• Active ROM is significantly less than passive ROM due to pain

versus

Moderate Irritability
Characterized by:
• Reports moderate levels of pain (4-6/10)
• Intermittent night or resting pain
• Moderate levels of reported disability on standardized self-report outcome tools
• Pain occurs at end ranges of active or passive movements
• Active ROM similar to passive ROM

versus

Low Irritability
Characterized by:
• Reports minimal levels of pain (≤3/10)
• No night or resting pain
• Minimal levels of reported disability on standardized self-report outcome tools
• Pain occurs with overpressures into end ranges of passive movements
• Active ROM same as passive ROM

Evaluation/Intervention Component 4: intervention strategies for shoulder pain and mobility deficits

High Irritability
Modalities:
• Heat for pain modulation
• Electrical stimulation for pain modulation
Self-care/home management training:
• Patient education on positions of comfort and activity modifications to limit tissue inflammation and pain
Manual therapy:
• Low-intensity joint mobilization procedures in the pain-free accessory ranges and glenohumeral positions
Mobility exercises:
• Pain-free passive ROM exercises
• Pain-free active assisted ROM exercises

Moderate Irritability
Modalities:
• Heat for pain modulation as needed
• Electrical stimulation for pain modulation as needed
Self-care/home management training:
• Patient education on progressing activities to gain motion and function without producing tissue inflammation and pain
Manual therapy:
• Moderate-intensity joint mobilization procedures, progressing amplitude and duration of procedures into tissue resistance without producing posttreatment tissue inflammation and associated pain
Mobility exercises:
• Gentle to moderate stretching exercises, progressing the intensity and duration of the stretches into tissue resistance without producing posttreatment tissue inflammation and associated pain
Stretching exercises:
• Stretching exercises, progressing the duration of the stretches into tissue resistance without producing posttreatment tissue inflammation and associated pain
Neuromuscular re-education:
• Procedures to integrate gains in mobility into normal scapulohumeral movement while performing reaching activities

Low Irritability
Self-care/home management training:
• Patient education on progression to performing high-demand functional and/or recreational activities
Manual therapy:
• End-range joint mobilization procedures, high amplitude and long duration of procedures into tissue resistance
Stretching exercises:
• Stretching exercises, progressing the duration of the stretches into tissue resistance without producing posttreatment tissue inflammation and associated pain
Neuromuscular re-education:
• Procedures to integrate gains in mobility into normal scapulohumeral movement during performance of the activities performed by the patient during his/her functional and/or recreational activities
Component 1
Medical screening incorporates the findings of the history and physical examination to determine whether the patient’s symptoms originate from a more serious pathology, such as a tumor or infection, rather than from a common shoulder musculoskeletal disorder.18,184 In addition to serious medical conditions, clinicians should screen for the presence of psychosocial issues that may affect prognostication and treatment decision making for rehabilitation. For example, elevated scores on the Tampa Scale of Kinesiophobia or the Fear-Avoidance Beliefs Questionnaire have been associated with a longer recovery, chronic symptoms, and work loss in patients with shoulder pain.41,197,198 Accordingly, identifying cognitive behavioral tendencies during the patient’s evaluation can direct the therapist to employ specific patient education strategies to optimize patient outcomes to physical therapy interventions and potentially provide indications for referring the patient for consultation with another medical or mental health practitioner.10

Component 2
Differential evaluation of musculoskeletal clinical findings is used to determine the most relevant physical impairments associated with the patient’s reported activity limitations and medical diagnosis. Clusters of these clinical findings, which commonly coexist in patients, are described as impairment patterns in the physical therapy literature1 and are labeled according to the key impairment(s) of body function associated with that cluster. These impairment patterns are useful in driving the interventions, which focus on normalizing the key impairments of body function, which in turn improves the movement and function of the patient and lessens or alleviates the activity limitations commonly reported by the patients who meet the diagnostic criteria of that specific pattern. Key clinical findings to rule in and rule out the common impairment patterns, and their associated medical conditions, are shown in the FIGURE. Impairment-based classification is critical for matching the intervention strategy that is most likely to provide the optimal outcome for a patient’s clinical findings. However, it is important for clinicians to understand that patients with shoulder pain often fit more than 1 impairment pattern and that the most relevant impairments of body function and the associated intervention strategies often change during the patient’s episode of care. Thus, continual re-evaluation of the patient’s response to treatment and the patient’s emerging clinical findings is important for providing the optimal interventions throughout the patient’s episode of care.

Component 3
Diagnosis of tissue irritability is important for guiding the clinical decisions regarding treatment frequency, intensity, duration, and type, with the goal of matching the optimal dosage of treatment to the status of the tissue being treated. Irritability is a term used by rehabilitation practitioners to reflect the tissue’s ability to handle physical stress,31 and is presumably related to physical status and the extent of inflammatory activity that is present. Three levels of irritability are operationally defined in the FIGURE. The primary clinical finding that determines the level of tissue irritability is the relation between pain and active and passive movements. Other clinical findings that characterize the level of tissue irritability are pain level, frequency of pain, and level of disability reported by the patient.

Component 4
Because irritability level often reflects the tissue’s ability to accept physical stress, clinicians should match the most appropriate intervention strategies to the level of irritability.60 Patients with a high level of tissue irritability are not ready for significant physical stress being applied to the affected tissues, and therefore the treatment should emphasize activity modification and appropriate modalities, medication, and manual therapy to relieve pain and inflammation. In addition, only low levels of glenohumeral exercises should be performed while encouraging motion at adjacent regions. Patients with a moderate level of irritability should be able to tolerate controlled physical stress in the form of progressive manual therapy, mild stretching, and strengthening activities. They should also be able to perform basic functional activities. In comparison, patients with low irritability should be able to tolerate progressive physical stress in the form of stretching, manual therapy, resistive exercise, and higher-demand physical activities.

Clinicians should recognize that patients with adhesive capsulitis present with a gradual and progressive onset of pain and loss of active and passive shoulder motion in both elevation and rotation. Utilizing the evaluation and intervention components described in these guidelines will assist clinicians in medical screening, differential evaluation of common shoulder musculoskeletal disorders, diagnosing tissue irritability levels, and planning intervention strategies for patients with shoulder pain and mobility deficits.