SHOULDER IMPINGEMENT NON-OPERATIVE GUIDELINES

The following Shoulder Impingement Guidelines were developed by HSS Rehabilitation and are categorized into four phases, dependent on patient presentation and symptom irritability. Classification and progression are both criteria-based and patient specific. Linear progression through phases may not be indicated. Treatment occurs below shoulder height in phases 1 and 2, and above shoulder height in phases 3 and 4, with phase 2 typically being the longest. The clinician should balance appropriate interventions for the optimization of functional activities and achievement of patient goals, while considering symptom irritability and resolution of impairments.

FOLLOW REFERRING PROVIDER MODIFICATIONS AS PRESCRIBED

SHOULDER IMPINGEMENT NON-OPERATIVE GUIDELINES

Phase 1: High to Moderate Irritability

PRECAUTIONS

- Avoid pain provoking activities and movements (e.g., sleeping on shoulder, reaching overhead or out to the side, carrying heavy bags with involved extremity, weight bearing on involved extremity)
- Avoid painful exercises and activities (e.g., reaching behind back, overhead)
- Do not immobilize the shoulder and continue to use the arm in pain-free activities

ASSESSMENT

- Quick Disabilities of Arm, Shoulder & Hand (Quick DASH)
- American Shoulder and Elbow Surgeons Score (ASES)
- Numeric Pain Rating Scale (NPRS)
- Posture
- Palpation (bony and soft tissue)
- Soft tissue quality and flexibility
- Joint mobility (e.g., posterior capsule, acromioclavicular(AC)/sternoclavicular (SC) and scapulothoracic (ST) joints)
- Cervical and thoracic mobility
- Scapula position and rhythm
- PROM arc noting end feel
- AROM noting painful arc
- Special tests for differential diagnosis of intra-articular, extra-articular or rotator cuff pathology
    - See Biederwolf reference for testing algorithm
- Manual muscle testing (MMT) (modify position of shoulder as necessary)
- Current activities and general fitness

TREATMENT RECOMMENDATIONS

- Patient education:
    - Nature of the condition
    - Activity modification to decrease or eliminate pain
    - Postural awareness & re-training
- Manual therapy: as indicated based on evaluation:
    - Soft tissue mobilization (STM): e.g., posterior cuff, levator scapulae, subscapularis, serratus anterior, latissimus dorsi, , pectorals, upper trapezius
    - Spinal mobilization/stabilization

    - Joint mobilization for pain management
    - PROM: initiate in scapular plane
- Therapeutic Exercises:
    - AAROM (e.g., pendulums; forward flexion, internal and external rotation in scapular plane)
    - Strengthening:
        - Deltoid isometrics as appropriate
        - Peri-scapular muscles
        - Core activation exercises (unloaded)
    - Neuromuscular training (e.g., scapular rhythm training, rhythmic stabilization)
- Elastic therapeutic taping
- Home exercise program (HEP)

CRITERIA FOR ADVANCEMENT

- Independent optimal postural awareness
- Confirm pain generators
- Reduced irritability
- Improved asymptomatic ROM

EMPHASIZE

- Patient understanding of condition
- Activity modification
- Symptom reduction

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Phase 2: Moderate to Low Irritability

PRECAUTIONS

- Avoid premature increase in activity level
- Avoid pain provoking activities and movements

ASSESSMENT

- Quick DASH
- ASES
- NPRS
- Posture
- Palpation (bony and soft tissue)
- Soft tissue quality and flexibility
- Joint mobility (e.g., posterior capsule, AC, SC, ST)
- Cervical and thoracic mobility
- Scapula position and rhythm
- PROM noting end feel
- AROM noting painful arc
- Special tests for differential diagnosis of intra-articular, extra-articular or rotator cuff pathology
    - See Biederwolf reference for testing algorithm
- MMT (modify position of shoulder as necessary)
- Current activities and general fitness

TREATMENT RECOMMENDATIONS

- Patient education and activity modification
    - Manual therapy- as indicated based on evaluation: PROM addressing remaining deficits
    - Joint mobilization:
        - GH , AC, SC, ST, thoracic spine, scapula, 1st rib
    - Soft tissue mobilization (STM) (e.g., posterior cuff, levator scapulae, subscapularis, serratus anterior, latissimus dorsi, pectorals, upper trapezius)
- Therapeutic Exercises:
    - ROM exercises addressing remaining deficits
    - Strengthening:
        - Initiate elevation in the scapular plane
        - Isometrics (advance from short to long duration) → isotonics
        - Advance peri-scapular & deltoid strengthening

        - Initiate activation of rotator cuff (pain-free)
        - Advance core activation exercises
    - Kinetic cross-linking exercises (e.g., contralateral proximal lower extremity strengthening)
    - Neuromuscular control and sequencing:
        - Bilateral UE closed chain exercises for stabilization – progressive load in plane of scapula
        - Motor control activities for normalization of scapulohumeral rhythm
        - Dynamic neuromuscular stabilization – humeral head control in forward flexion, scaption, abduction
    - Cardiovascular conditioning (non-irritating)
- Advance HEP as tolerated

CRITERIA FOR ADVANCEMENT

- Full range of motion without pain below 90°
- Good scapular control to 90° without pain in plane of scapula

EMPHASIZE

- Adjust exercise intensity (time, sets, reps) based on signs and symptoms
- Understand pathology and appropriate activity progression
- Maximize ROM and flexibility
- Maintain glenohumeral position throughout exercise progression

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Phase 3: Low to No Irritability

PRECAUTIONS

- Avoid overloading with progressive resistive exercises
- Avoid pain provocation activities and movements

ASSESSMENT

- Quick DASH
- ASES
- NPRS
- Soft tissue quality and flexibility
- Posture
- Scapula position and rhythm
- Cervical and thoracic mobility
- Scapulothoracic coupling
- PROM noting end feel
- AROM noting painful arc
- MMT (modify position of shoulder as necessary)
- Appropriateness for progression from physical therapy to Performance Services

TREATMENT RECOMMENDATIONS

- Patient education and activity modification/progression
- Manual therapy: address remaining deficits from previous phases
- Therapeutic exercise:
    - Strengthening: progress isotonic exercises increasing load
    - Advance core strengthening (e.g., planks, prone trunk extension over a ball, bird dogs)
    - Single UE closed chain exercises for stabilization
- Neuromuscular control and sequencing:
    - Motor control exercises in multiplanar patterns (e.g., resisted/loaded proprioceptive neuromuscular facilitation)
    - Proprioceptive dynamic perturbations
- Plyometrics: Initiate two hand plyometrics progressing to overhead and single arm
- Cardiovascular conditioning
- Advance HEP as tolerated

CRITERIA FOR DISCHARGE (OR ADVANCEMENT TO PHASE 4 IF RETURNING TO SPORT)

- Able to tolerate strengthening exercise in all planes
- Good scapular control in plane of scapula above shoulder height without pain
- Pain-free ADL
- If returning to sport, consider collaboration with trainer, coach, or performance specialist as irritability resolves

EMPHASIZE

- Scapulothoracic coupling in overhead positions
- Maximize ROM
- Develop strength in previously painful functional positions

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Phase 4: Return to Sport (if applicable)

PRECAUTIONS

- Avoid too much, too soon: monitor exercise dosing
- Don't ignore functional progressions
- Be certain to incorporate rest and recovery
- Monitor for loss of ROM/flexibility

ASSESSMENT

- Quick DASH including Sports Module
- ASES
- NPRS
- Sport-specific readiness (e.g., isokinetic testing or hand-held dynamometry, Upper Quarter Y Balance Test™, Closed Kinetic Chain Upper Extremity Stability Test, Shot Put Test
- Quality of movement during sport-specific activities
- Strength and cardiovascular endurance
- Overall fitness level

TREATMENT RECOMMENDATIONS

- Progress humeral head control exercises in a variety of overhead positions
- Progress isotonic exercises to higher loads
- Closed kinetic chain progression exercises
- Sport-specific multidirectional core retraining, single arm plyometrics, overhead throwing, total body multidirectional motor control and strengthening
- Collaboration with trainer, coach, or performance specialist

CRITERIA FOR RETURN TO SPORT

- Independent in appropriate return to sport program (e.g., Thrower's 10 Program, Advanced Thrower's Ten Program)
- Movement patterns, strength, flexibility, motion, power, and accuracy to meet demands of sport
- Pain-free

EMPHASIZE

- Self-monitoring volume and load progressions
- Speed, accuracy, power, and quality in sport-specific activities
- Collaboration with appropriate Sports Performance expert

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