

ELBOW LATERAL PAIN NON-OPERATIVE GUIDELINES

The following lateral elbow pain 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. 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.

Review the differential diagnosis appendix at the end of the document if in doubt of the symptom generator. The list includes subjective and objective identifiers that will assist the diagnostic process.

Follow physician modifications as prescribed.

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Phase 1: Activity Modification (High Irritability)

PRECAUTIONS

- No repetitive lifting or resistance training to the hand/wrist/forearm/elbow at this stage
- Minimize functional movements/positions that create high load/stress to affected area

ASSESSMENT

- Quick Disabilities of Arm, Shoulder & Hand (Quick DASH)
- Functional status
- Level of general fitness
- Posture
- Active range of motion (AROM)/Passive range of motion (PROM) of forearm, elbow, wrist/hand
- Scapular position and rhythm
- Cervical/Thoracic mobility
- Evaluation of soft tissue quality and flexibility
- Manual muscle testing (MMT) of proximal musculature
- Joint mobility
 - Wrist
 - Radiohumeral, ulnohumeral joints
- Proximal radioulnar joint
- Palpation
 - Anconeus, rachioradialis, Extensor Carpi Radialis Brevis (ECRB) and Extensor Carpi Radialis Longus (ECRL); Intersection area of Abductor Pollicis Longus and Extensor Pollicis Brevis with ECRB/ECRL; Supinator/radial tunnel

TREATMENT RECOMMENDATIONS

- Patient education
 - Avoid lifting objects with the elbow straight and palm facing down or with wrist in extended position
 - Use of splinting, if deemed appropriate
 - Counterforce with activities or during the day
 - Discuss how to wear counterforce: approximately 2-3 fingers from lateral epicondyle; place pad over extensor muscle belly, and make a gentle fist as you tighten strap
 - Patient education to modify the strap throughout day for comfort
 - Wrist cock up for nighttime
 - Postural awareness
 - Pain neuroscience education, if appropriate
- Postural exercises/awareness training
- Manual therapy- as indicated based on evaluation
 - Spinal mobilization/manipulation
 - Local joint mobilization grade I, for pain management or mobilization with movement
- Stretching of wrist extensors and flexors
- Strengthening of periscapular and glenohumeral musculature
- Neuromuscular training, i.e. scapular rhythm training, rhythmic stabilization
- Work or home ergonomics
 - Assess aggravating conditions and modify accordingly
- Home exercise program (HEP)
 - Rest, splint if appropriate, heat or ice
 - Patient education and activity modification
 - Wrist AROM
 - Cardiovascular conditioning

CRITERIA FOR ADVANCEMENT

- Reduced irritability
- Able to make a submaximal effort fist with mild pain

EMPHASIZE

- Patient education regarding pain provocation and splint usage
- Activity modification

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Phase 2: Addressing Impairments (Moderate Progressing to Low Irritability)

PRECAUTIONS

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

ASSESSMENT

- Quick DASH
- AROM/PROM forearm, elbow, wrist/hand
- Scapula position and rhythm
- Postural awareness
- Cervical and thoracic mobility
- Soft tissue quality and flexibility
- MMT of proximal musculature
- Grip strength test:
 - Elbow 90° of flexion; test each side 3x
 - Elbow in extension, forearm neutral
 - Elbow in extension, forearm pronated
 - Elbow in extension, forearm supinated

TREATMENT RECOMMENDATIONS

- Reinforce patient education and activity modification
- Address soft tissue restrictions locally and proximally at the shoulder/spine
- Postural retraining/awareness
- Manual therapy- as indicated based on evaluation
 - Spinal mobilization/manipulation
 - Mobilization with movement
- Exercise recommendations
 - ROM exercises addressing deficits
 - Advance periscapular strengthening
 - Utilize the scapular plane for exercise progressions
 - Motor control activities for normalization of scapulohumeral rhythm
 - Core activation exercises, choice of exercises depend on irritability levels
 - Initiate activation of elbow/wrist musculature utilizing either isometric or eccentric training based on patient tolerance:
 - Start with short duration and advance to long duration/intensity
 - Eccentrics with closed fist (ECRL/ECRB)
 - Eccentrics with open fingers (Extensor digitorum communis)
 - Advance HEP
 - Modified ADL's and gym or recreational activities based on level of irritability
 - Graded return to sports activities
 - Limit load and intensity of activity based on patient tolerance
 - Cardiovascular conditioning

CRITERIA FOR ADVANCEMENT

- Full AROM with mild or no pain in all planes
- Pain free self-care activities
- Tissue tolerance to tasks that place low loads on the affected tissue
- Mild pain with pulling/pushing/lifting/reaching tasks

EMPHASIZE

- Patient education regarding pain provocation
- Address motor control and periscapular strength deficits

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Phase 3: Restoration of Function (Low to No Irritability)

PRECAUTIONS

- Avoid flare-ups

ASSESSMENT

- Quick DASH
- AROM/PROM
- Local and proximal MMT
- Cervical and thoracic mobility
- Soft tissue quality and flexibility
- Scapulothoracic coupling
- Appropriateness for progression to independent home/gym program or Performance Services

TREATMENT RECOMMENDATIONS

- Progress from isometric/eccentric to isotonic exercises
- Advance core strengthening
- Neuromuscular control and sequencing in multiplanar patterns
 - Resisted/loaded PNF
 - Overhead two hand plyometrics progressing to single arm
 - Rhythmic stabilization
 - Exercise blade perturbations
 - Closed chain stabilization with scapular control
- Kinetic cross-linking exercises, e.g. contralateral proximal lower extremity strengthening
- Cardiovascular conditioning
- Advanced recreational/sport skills

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

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

EMPHASIZE

- Multiplanar motor control exercises
- Progressive isotonic loading of tissues

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Phase 4: Return to Sport (if applicable)

PRECAUTIONS

- Avoid too much too soon; monitor exercise dosing

ASSESSMENT

- Quick DASH including Sports Module
- Quality of movement during sport-specific activities
- Strength and cardiovascular endurance
- Overall fitness level
- Posture
- Cervical and thoracic mobility
- Soft tissue quality and flexibility
- Scapulothoracic coupling
- Objective tests, e.g. isokinetic testing or handheld dynamometry, Upper Quarter Star Excursion Test, Closed Kinetic Chain Upper Extremity Stability Test, Shot Put Test

TREATMENT RECOMMENDATIONS

- Progress scapulothoracic control exercises in a variety of positions
- Progress isotonic exercises to higher loads as indicated
- Single arm sport-specific plyometric drills
- Closed kinetic chain progression exercises
- Increase endurance and activity tolerance
- Progress total body multidirectional motor control and strengthening exercises to meet sport-specific demands
- 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
- Movement patterns, strength, flexibility, motion, power and accuracy to meet demands of sport
- Pain-free sporting activities

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Appendix: Lateral Elbow Pain Differential Diagnosis

Lateral Epicondylalgia

- Pain by the attachment of the common extensor tendon on the lateral humeral epicondyle
- No motor or sensation loss
- No pain with resisted supination
- Provocative tests: Cozen's test, Mill's test, Maudsley's test

Posterior Interosseous Nerve Syndrome

- Pain typically located (4 fingers) distal to the lateral epicondyle
- Weakness of finger extensors
- Wrist extension is possible, but only with a dorso-radial direction
- Thumb extension elicits pain at the lateral epicondyle of the humerus
- No sensation loss
- Provocative test: resisted forearm supination with compression at Arcade of Frohse

Radial Tunnel Syndrome

- Deep aching distal to the lateral epicondyle
- Pain at the belly of the brachioradialis
- Pain with repetitive wrist flexion, and/or pronation
- No motor or sensation loss
- Provocative test: resisted forearm supination

Fibromyalgia

- This is a widespread disorder of pain processing and perception, i.e. allodynia, hyperalgesia. The patient will have elbow pain in addition to tenderness on the "fibromyalgia 18 tender points" and many other symptoms, including:
 - Sleep disruptions
 - Chronic fatigue
 - Problems with memory and thinking clearly (sometimes called "fibro fog")
 - Problems with depression and/or anxiety
 - Overlapping conditions such as irritable bowel syndrome, restless leg syndrome, migraines, and others

Cervical Radiculopathy

- Clinical Prediction Rule
 - + Spurling's test
 - + ULTT A test
 - + Distraction test
 - Involved side cervical rotation < 60°
- Refer to Wainner et al 2003 for diagnostic accuracy data of this CPR

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