ELBOW MEDIAL PAIN NON-OPERATIVE GUIDELINE

The following Medial Elbow Pain Guideline was developed by HSS Rehabilitation and is categorized into four phases, dependent on patient presentation and symptom irritability. Patients may initially present in any phase. 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.

FOLLOW REFERRING PROVIDER'S MODIFICATIONS AS PRESCRIBED

ELBOW MEDIAL PAIN NON-OPERATIVE GUIDELINE

High Irritability Phase

PRECAUTIONS

- Avoid repetitive lifting or resistance training to the elbow/forearm/hand/wrist at this stage
- Minimize functional movements/positions that create irritability and/or apply high load/stress to affected area

ASSESSMENT

- Quick Disabilities of Arm, Shoulder & Hand (Quick DASH) – ages 18+
- Youth Throwing Score - ages 10 -18
- Patient-Specific Functional Scale (PSFS)
- Numeric Pain Rating Scale (NPRS)
- Observation: edema, posture, muscle tone or atrophy
- Cervical spine screen
    - Upper Limb Tension Test
- Sensory screen
- Pressure-Pain Threshold (measured with Algometer)
- Girth measurements
    - Joint line and 10 cm below
- Palpation
    - Pronator teres, flexor carpi radialis (FCR), flexor carpi ulnaris (FCU) palmaris longus,
    - Medial epicondyle
        - growth plate/apophysis to rule out little league elbow where applicable
- Active range of motion (AROM)/Passive range of motion (PROM)
    - Cervical spine, thoracic spine, shoulder, elbow, forearm, wrist, and hand
- Joint mobility
    - Cervical and thoracic spines
    - Radiohumeral, ulnohumeral joints
    - Proximal radioulnar joint
    - Wrist joints
- Soft tissue quality and flexibility from cervical spine to the hand
- Strength: Manual muscle testing (MMT) &/or dynamometry
    - Proximal musculature
    - Grip Strength
        - Pain-free strength
        - Maximal Strength

- Special Tests:
    - Medial elbow ligamentous integrity
        - Valgus test at 0 and 30 degrees of elbow extension
        - Milking Maneuver
        - Tinel's Sign (at the Cubital tunnel)
- Neuromuscular control, i.e.scapulohumeral rhythm
- Functional status
- Level of general fitness

TREATMENT RECOMMENDATIONS

- Patient education
    - Avoid lifting objects with the elbow straight and palm facing up or with wrist in flexed position
    - School, work and/or home ergonomics
        - Assess aggravating conditions and modify accordingly
    - Use of splinting, if deemed appropriate
        - Counterforce brace with activities or during the day
            - Discuss how to wear counterforce brace: approximately 2-3 fingers distal to medial epicondyle, place pad over wrist flexor/pronator muscle belly, and make a gentle fist as you tighten strap
            - Patient education to modify the strap throughout day for comfort
        - Wrist cock up or elbow extension brace
    - Postural awareness
    - Pain neuroscience education, if appropriate
- ROM as indicated based on evaluation
    - Elbow, forearm, wrist
- Soft tissue mobilization to address restrictions
    - Proximal musculature
    - Wrist flexors and extensors
- Joint mobility - as indicated based on evaluation
    - Spinal mobilization/manipulation
    - Local joint mobilization grade I, for pain management or mobilization with movement
- Flexibility- as indicated based on evaluation
    - Proximal musculature
    - Wrist flexors and extensors (caution with irritated tendons)
        - Begin with the muscles in a slacked, elbow flexed position and progress to an extended elbow as tolerated
        - Begin with active stretching and progress to prolonged hold stretches
- Strengthening of postural, periscapular and glenohumeral musculature
- Neuromuscular training, i.e. scapular rhythm training, rhythmic stabilization

- Modalities
    - Ice combined with TENS
    - low level laser
    - Iontophoresis
- Taping techniques: rigid or kinesiology tape, if appropriate
- Dry Needling, if appropriate
- Home exercise program (HEP)
    - Rest, splint if appropriate, ice
    - Patient education and activity modification
    - Address cervical, thoracic and shoulder restrictions
    - Strengthening of proximal musculature
- Cardiovascular conditioning

CRITERIA FOR ADVANCEMENT

- Reduced irritability during activities like carrying / lifting
- Able to make a submaximal effort fist with moderate pain

EMPHASIZE

- Patient education regarding pain and counterforce brace/splint usage
- Activity modification
- Independence in HEP

ELBOW MEDIAL PAIN NON-OPERATIVE GUIDELINE
Moderate Irritability Phase

PRECAUTIONS

- Avoid premature or sudden increase in activity level
- Avoid pain provoking activities, specifically repetitive movements

ASSESSMENT

- Quick DASH
- Youth Throwing Score
- PSFS
- NPRS
- Observation: edema, posture, muscle tone or atrophy
- Cervical Spine Screening
    - Upper Limb Tension Test (ULTT)
- Sensory screen
- Pressure-Pain Threshold (measured with Algometer)
- Girth measurements
    - Joint line and 10 cm below
- Palpation
    - Pronator teres, FCR, FCU, palmaris longus
    - Medial epicondyle
        - growth plate/apophysis to rule out little league elbow where applicable
- Active range of motion (AROM)/Passive range of motion (PROM)
    - Cervical spine, thoracic spine, shoulder, elbow, forearm, wrist, and hand
- Joint mobility
    - Cervical and thoracic spines
    - Radiohumeral, ulnohumeral joints
    - Proximal radioulnar joint
    - Wrist joints
- Soft tissue quality and flexibility from cervical spine to the hand
- Strength testing: MMT &/or dynamometry
    - Proximal musculature
    - Grip Strength (with elbow flexed to 90 degrees and fully extended)
        - Pain-free strength
        - Maximal Strength
- Special tests: Tinel's Sign (at the Cubital tunnel)

- Neuromuscular control i.e. scapulohumeral rhythm
- Functional status
- Level of general fitness

TREATMENT RECOMMENDATIONS

- Reinforce patient education and activity modification
- ROM exercises addressing deficits
- Joint mobilization: as indicated based on evaluation
    - Spinal mobilization/manipulation
    - Mobilization with movement
- Soft tissue mobilization to address restrictions
    - Proximal musculature
    - Wrist flexors and extensors
- Postural retraining/awareness
- Strengthening
    - Periscapular strengthening progression
        - Utilize the scapular plane for exercise progressions
    - 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
        - Eccentric wrist flexion:
            - Begin with bent elbow and progress to straight elbow
        - Eccentric forearm pronation
- Motor control activities for normalization of scapulohumeral rhythm
- HEP progression
    - Modified ADL's and gym or recreational activities based on level of irritability
    - Proximal musculature strength progression
    - Elbow and wrist strengthening initiation
    - Cardiovascular conditioning

CRITERIA FOR ADVANCEMENT

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

EMPHASIZE

- Patient education regarding pain provocation
- Limit load and intensity of activity based on patient tolerance
- Motor control and periscapular strength deficits

ELBOW MEDIAL PAIN NON-OPERATIVE GUIDELINE

Low Irritability Phase

PRECAUTIONS

- Monitor exercise dosage to prevent flare-ups

ASSESSMENT

- Quick DASH
- Youth Throwing Score
- PSFS
- NPRS
- Observation: edema, posture, muscle tone or atrophy
- Cervical Spine Screening
    - Upper Limb Tension Test (ULTT)
- Pressure-Pain Threshold (measured with Algometer)
- Girth measurements, if applicable
    - Joint line and 10 cm below
- Palpation
    - Pronator teres, FCR, FCU, palmaris longus
    - Medial epicondyle
- Active range of motion (AROM)/Passive range of motion (PROM)
    - Cervical spine, thoracic spine, shoulder, elbow, forearm, wrist, and hand
- Joint mobility
    - Cervical and thoracic spines
    - Radiohumeral, ulnohumeral joints
    - Proximal radioulnar joint
    - Wrist joints
- Soft tissue quality and flexibility along local musculature
- Strength testing
    - Proximal musculature: MMT
    - Grip strength with grip dynamometer (as tolerated)
        - Elbow 90° of flexion
        - Elbow in extension, forearm neutral
        - Elbow in extension, forearm pronated
        - Elbow in extension, forearm supinated
- Special tests: Tinel's Sign (at the Cubital tunnel)

- Neuromuscular control i.e. scapulohumeral rhythm
- Functional status
- Appropriateness for progression to independent home/gym program or Performance Services

TREATMENT RECOMMENDATIONS

- Patient education
    - Proper advancement for return to activity and prevent symptom recurrence
- ROM exercises addressing deficits
- Joint mobilization
    - Address any deficits as stated in previous phase
- Soft tissue mobilization
    - Address any deficits as stated in previous phase
- Postural retraining/awareness
- Strengthening
    - Multiplanar periscapular strengthening progression
    - Progress from isometric/eccentric to isotonic exercises of elbow/forearm/wrist musculature
- Neuromuscular control and sequencing in multiplanar patterns
    - Rhythmic stabilization
    - Resisted/loaded PNF
    - Closed chain stabilization with scapular control
    - Exercise blade perturbations
    - Overhead two hand plyometrics progressing to single arm
- Kinetic cross-linking exercises, e.g. contralateral proximal lower extremity strengthening
- Cardiovascular conditioning
- Initiate recreational/sport skills

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

- Pain-free ADL's
- Able to tolerate strengthening exercise in all planes with minimum to no pain
- Good scapular control above shoulder height without pain in plane of scapula
- If returning to sport consider collaboration with trainer, coach or performance specialist as irritability resolves

EMPHASIZE

- Progressive isotonic loading of tissues
- Multiplanar motor control exercises

ELBOW MEDIAL PAIN NON-OPERATIVE GUIDELINE

Phase 4: Return to Sport (if applicable)

PRECAUTIONS

- Monitor exercise dosing and avoid overloading

ASSESSMENT

- Quick DASH including Sports Module
- The Youth Throwing Score
- Posture
- Cervical and thoracic mobility
- Soft tissue quality and flexibility
- Scapulothoracic coupling
- Functional Strength
    - The Athletic Shoulder (ASH) test
    - Single-Arm Seated Shotput Test
    - Isokinetic testing
    - Handheld dynamometry of the proximal arm
    - Upper Quarter Star Excursion Test
    - Closed Kinetic Chain Upper Extremity Stability Test
- Quality of movement during sport-specific activities
- Cardiovascular endurance
- Overall fitness level

TREATMENT RECOMMENDATIONS

- Progress scapulothoracic control exercises in a variety of positions
- Progress isotonic exercises to higher loads as indicated
- Closed kinetic chain progression exercises
- Single arm sport-specific plyometric drills
- 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 DISCHARGE/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 sports activities

EMPHASIZE

- Safe return to sport
- Training of skills in specific performance tasks

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