ELBOW ULNAR NERVE TRANSPOSITION POST-OPERATIVE GUIDELINES

The following elbow ulnar nerve transposition guidelines were developed by HSS Rehabilitation and are categorized into four phases with the ultimate goal of returning the patient to previous level of function to full athletic competition. Classification and progression are both criteria-based and time based due to the healing constraints of the human body. The first phase is focused on post-operative recovery and healing. Phase two is focused on building foundational strength and stability which will allow the patient to progress to phase three which includes advanced mobility, strengthening and plyometrics. With the completion of phase three the patient will be able to progress into phase four which includes interval sports programs and higher level training. Cardiovascular endurance, hip, core and lower extremity strength should be addressed throughout recovery. The clinician should use their skilled judgement and decision making as the patient advances as all progression may not be linear and may take longer than indicated timeframes.

FOLLOW SURGEON MODIFICATIONS AS PRESCRIBED

ELBOW ULNAR NERVE TRANSPOSITION POST-OPERATIVE GUIDELINES

Phase 1: Post-Operative Recovery (Weeks 0-3)

PRECAUTIONS

- Avoid pain/paresthesia provoking activities
- No aggressive elbow passive range of motion (PROM) by the clinician, no forced elbow motion
- If sub muscular transposition with flexor-pronator repair, no resisted forearm flexion/pronation for 6 weeks

ASSESSMENT

- Quick DASH (Disabilities of Arm, Shoulder & Hand)
- NPRS (Numeric Pain Rating Scale)
- Static scapular assessment (Kibler Grading)
- Cervical mobility
- Elbow passive range of motion (PROM)
- Wrist/finger active range of motion (AROM)
- Kinetic chain assessment
- Postural assessment
- Sensation assessment: ulnar nerve distribution

TREATMENT RECOMMENDATIONS

- Week 1:
    - Splint at 90° elbow flexion for week 1
    - Gripping exercise (pain-free) (no gripping for 4 weeks if submuscular transposition)
    - Wrist/finger AROM
- Week 2:
    - Brace set at 15°-100° for weeks 2-4
    - Elbow AROM in brace
    - Continue gripping and wrist AROM exercises
    - Scapula isometrics
    - Manual sidelying scapula stabilization exercises

CRITERIA FOR ADVANCEMENT

- Reduced irritability
- 15°-100° elbow AROM

EMPHASIZE

- Reduction of tissue irritability
- Protection of surgical site
- Soft tissue healing

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Phase 2: Intermediate (Weeks 4-5)

PRECAUTIONS

- Avoid pain/paresthesia provoking activities
- Brace discharge is surgeon directed
- No aggressive elbow PROM by the clinician, no forced elbow motion

ASSESSMENT

- Quick DASH
- NPRS
- Static scapular assessment (Kibler grading)
- Cervical mobility
- Thoracic mobility
- Shoulder mobility
- Elbow AROM
- Distal mobility
- Kinetic chain assessment
- Postural assessment

TREATMENT RECOMMENDATIONS

- Continue upper extremity (UE) AROM
    - Emphasize full elbow extension
- UE flexibility exercises
    - Posterior shoulder: cross body and modified sleeper stretch, if needed
- Strengthening:
    - Initiate isotonic exercises for scapula, shoulder, and elbow
    - Initiate shoulder internal rotation (IR)/external rotation (ER) strengthening, progress to overhead as tolerated
    - Scapular retraction/protraction
    - Serratus activation
- Initiate proprioceptive neuromuscular facilitation (PNF) diagonals
- Upper body ergometer (if adequate range of motion (ROM)

CRITERIA FOR ADVANCEMENT

- Full elbow AROM
- Reduced tissue irritability

EMPHASIZE

- Reduction of tissue irritability
- Restoration of full elbow ROM
- Strength of scapular stabilizers, rotator cuff

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Phase 3: Advanced Recovery (Weeks 6-7)

PRECAUTIONS

- Avoid pain/paresthesia provoking activities

ASSESSMENT

- Quick DASH
- NPRS
- Static scapular assessment (Kibler grading)
- Cervical mobility
- Elbow AROM/PROM
- Wrist AROM/PROM
- Shoulder/wrist/hand manual muscle testing (MMT)
- Grip strength
- Kinetic chain assessment
- Postural assessment

TREATMENT RECOMMENDATIONS

- Continue isotonics for scapula, shoulder, and elbow
- Throwers Ten
- Advanced Throwers Ten
- Begin light wrist/forearm resistive exercises
    - Flexion/extension, pronation/supination
- Advance shoulder strengthening in overhead position

CRITERIA FOR ADVANCEMENT

- Full elbow AROM
- Full shoulder AROM
- Tolerance of all above exercises without irritation

EMPHASIZE

- Shoulder and elbow flexibility
- Strength and endurance of shoulder and scapular stabilizers

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Phase 4: Return to Sport Progression (Weeks 8-12+)

PRECAUTIONS

- Pain provoking activities

ASSESSMENT

- Quick DASH
- NPRS
- Static/dynamic scapular assessment (Kibler grading)
- Cervical mobility
- Thoracic mobility
- Elbow AROM/PROM
- Hand and Wrist AROM/PROM
- Shoulder MMT
- Grip strength
- Kinetic chain assessment
- Postural assessment

TREATMENT RECOMMENDATIONS

- Continue full UE strengthening program
- Continue UE flexibility exercises
- Eccentric strengthening
- Exercise blade in multiple positions
- Initiate plyometrics program (with adequate strength base)
    - Double hand → single hand → overhead 90/90
- Initiate interval hitting program at 8 weeks
- Initiate interval throwing program between 10-12 weeks
- Monitor workload
- Collaborate with athletic trainer, performance coach/strength and conditioning coach, skills coach and/or personal trainer to monitor load and volume with return to sport participation

CRITERIA FOR RETURN TO PARTICIPATION

- Pain-free progression through interval sports program
- Independent with all home exercises
- Assess need for HSS Video Throwing Analysis Program

EMPHASIZE

- Power and endurance development
- Advanced scapular stabilization
- Initiation of interval sports programs
- Collaboration with Sports Performance experts

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