

## **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 overhead athlete to full 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 athlete to progress to phase three which includes advanced mobility, strengthening and plyometrics. With the completion of phase three the athlete will be able to progress into phase four which includes interval sports programs. 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 athlete advances as all progression may not be linear and may take longer than timeframes indicated.

### **FOLLOW SURGEON MODIFICATIONS AS PRESCRIBED**

## ELBOW ULNAR NERVE TRANSPOSITION POST-OPERATIVE GUIDELINES

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

#### PRECAUTIONS

- Avoid pain/paresthesia provoking activities
- No aggressive elbow passive range of motion (PROM) by clinician, no forced elbow motion

#### ASSESSMENT

- Quick DASH (Disabilities of Arm, Shoulder & Hand)
- ASES (American Shoulder and Elbow Surgeons Shoulder Score)
- NPRS (Numeric Pain Rating Scale)
- Static scapular assessment (Kibler Grading)
- Cervical mobility
- Elbow passive range of motion (PROM)
- Kinetic chain assessment
- Postural assessment

#### TREATMENT RECOMMENDATIONS

- Week 1:
  - Splint at 60° elbow flexion for week 1
  - Gripping exercise (pain-free)
  - Wrist AROM
- Week 2:
  - Brace set at 15°-100° for weeks 2-4
  - Elbow AROM in brace
  - Continue gripping and wrist active range of motion (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

## **ELBOW ULNAR NERVE TRANSPOSITION POST-OPERATIVE GUIDELINES**

### **Phase 2: Intermediate (Weeks 4-5)**

#### **PRECAUTIONS**

- Avoid pain/paresthesia provoking activities
- Brace D/C is MD directed
- No aggressive elbow PROM by clinician, no forced elbow motion

#### **ASSESSMENT**

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

#### **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

## ELBOW ULNAR NERVE TRANSPOSITION POST-OPERATIVE GUIDELINES

### Phase 3: Advanced Recovery (Weeks 6-7)

#### PRECAUTIONS

- Avoid pain/paresthesia provoking activities

#### ASSESSMENT

- Quick DASH
- ASES
- 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 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

## **ELBOW ULNAR NERVE TRANSPOSITION POST-OPERATIVE GUIDELINES**

### **Phase 4: Return to Performance Progression (Weeks 8-12+)**

#### **PRECAUTIONS**

- Pain provoking activities

#### **ASSESSMENT**

- Quick DASH
- ASES
- 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 upper extremity strengthening program
- Continue upper extremity flexibility exercises
- Eccentric strengthening
- Exercise blade in multiple positions
- Begin plyometrics program (with adequate strength base)
  - Double hand → single hand → overhead 90/90
- May initiate interval hitting program at 8 weeks
- Initiate interval throwing program between 10-12 weeks
- Monitor workload

#### **CRITERIA FOR RETURN TO PARTICIPATION**

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

## **EMPHASIZE**

- Power and endurance development
- Advanced scapular stabilization
- Initiation of interval sports programs

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### References

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Created: 3/2019

Reviewed: 3/2021