ELBOW MEDIAL COLLATERAL LIGAMENT (MCL) RECONSTRUCTION POST-OPERATIVE GUIDELINES

The following elbow MCL reconstruction post-operative guidelines were developed by HSS Rehabilitation and are categorized into five phases with the ultimate goal of returning the athlete to full competition or previous level of activity. Classification and progression are both criteria-based and time based due to natural healing constraints. The first phase is focused on post-operative recovery and healing. Phases two and three are focused on building foundational strength and stability which will allow the athlete to progress to phase four which includes plyometric exercises. With the completion of phase four the athlete will be able to start the final phase 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.

BRACE INSTRUCTIONS

Week 1 Posterior splint and sling: _____

Week 2-3 Flexion 60˚, Extension 30˚: _____

Week 4 Flexion 90˚, Extension 30˚: _____

Week 5 Flexion 90˚, Extension 15˚: _____

Week 6 Brace D/C per surgeon:

FOLLOW SURGEON MODIFICATIONS AS PRESCRIBED

ELBOW MCL RECONSTRUCTION POST-OPERATIVE GUIDELINES

Phase 1: Post-Operative Recovery (Weeks 1-4)

PRECAUTIONS

- Avoid pain provoking activities
- Avoid any painful exercises
- Monitor healing for signs and symptoms of infection

ASSESSMENT

- Quick Disabilities of Arm, Shoulder & Hand (Quick DASH)
- Numeric Pain Rating Scale (NPRS)
- Static scapular assessment (Kibler Grading)
- Cervical mobility
- Distal mobility
- Kinetic chain assessment
- Postural assessment

TREATMENT RECOMMENDATIONS

- Range of motion (ROM):
    - Gripping and hand active range of motion (AROM)
    - Wrist AROM: flexion/extension immediate post-op
    - Elbow AROM in brace (no further than brace allows)
- Thoracic spine mobility
    - Rib roll
- Scapular protraction/retraction, scapular isometrics
- Prone shoulder extensions (With brace on)
- Prone shoulder horizontal abduction (With brace on)
- Scaption (with brace on)
- Shoulder abduction (with brace on)
- Core stabilization
- Hip activation
- Single leg balance
- Consider Blood Flow Restriction (BFR) program with FDA approved device and qualified therapist if patient cleared by surgeon
- Upright bike after stitches removed
    - Do not sweat until stitches come out

CRITERIA FOR ADVANCEMENT

- Reduced irritability
- 15°-90° elbow AROM

EMPHASIZE

- Reduction of tissue irritability
- Protection of graft site
- Prevention of muscle atrophy
- Full wrist/hand mobility

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Phase 2: Intermediate (Weeks 5-6)

PRECAUTIONS

- Avoid valgus stress
- Avoid aggressive passive range of motion (PROM): do not force motion, especially flexion
- Avoid painful exercises
- Avoid closed chain exercises

ASSESSMENT

- Quick DASH
- NPRS
- Static/dynamic scapular assessment (Kibler grading)
- Thoracic mobility
- Shoulder mobility
- Elbow PROM/AROM
- Hand and wrist AROM
- Scar and soft tissue mobility
- Kinetic chain assessment
- Postural assessment

TREATMENT RECOMMENDATIONS

- Continue elbow AROM
- Continue shoulder AROM
    - Full can
    - Lateral raises
- Thoracic spine mobility
- Bicep/triceps isometrics
- Shoulder external rotation (ER) isotonics
- Shoulder internal rotation (IR) isometrics
- Wrist isometrics and isotonics: minimize muscle atrophy
    - Flexion/extension
    - Pronation/supination
- Manual scapula stabilization with proximal resistance
- Continue with prone scapula series
    - Extension
    - Horizontal abduction
- Assess and treat graft site if needed (hamstring or palmaris)

CRITERIA FOR ADVANCEMENT

- Elbow AROM: 15°-115°
- Reduced tissue irritability

EMPHASIZE

- Elbow AROM 15°-115°
- Reduction of tissue irritability
- Maintenance of shoulder flexibility

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Phase 3: Advanced (Weeks 7-13)

PRECAUTIONS

- Gradually progress valgus stress
- Avoid aggressive PROM by clinician
- Avoid painful exercise
- Avoid closed chain exercises until week 10

ASSESSMENT

- Quick DASH
- NPRS
- Static/dynamic scapular assessment (Kibler grading)
- Elbow PROM/AROM
- Hand and wrist AROM
- Manual muscle testing (MMT) as appropriate
- Scar and soft tissue mobility
- Kinetic chain assessment
- Postural assessment

TREATMENT RECOMMENDATIONS

- AROM of upper extremity
- Strengthening:
    - Continue isotonics for scapula, shoulder, elbow, forearm, wrist
    - Begin shoulder IR isotonics
    - Progress ER resistance
    - 90/90 shoulder strengthening
    - Proprioceptive Neuromuscular Facilitation (PNF) diagonals
    - Begin closed chain exercises progression (week 10)
    - Serratus anterior activation
        - Supine punch at 90 degrees and 110 degrees shoulder flexion
        - Dynamic hugs
        - Wall slides
    - Cable column:
        - row progression
        - single arm press (10 weeks)
        - lat pulldown

- Shoulder endurance drills
    - Ball drops
    - Body blade
    - Eccentric catches
- Pre plyometric drills
    - Double arm wall dribbles
    - Single arm wall dribbles
- Neuromuscular drills
- Upper extremity ergometry
- Core and LE strengthening
- Modalities as needed
- Collaborate with ATC, performance coach/strength and conditioning coach, skills coach and/or personal trainer to monitor load and volume with return to sport participation

CRITERIA FOR ADVANCEMENT

- Full shoulder and elbow ROM
- Pain-free at rest and during exercise
- All upper extremity MMT 5/5

EMPHASIZE

- Restoration of full AROM/PROM
- Upper extremity MMT 5/5
- Upper extremity endurance

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Phase 4: Plyometric Progression (Weeks 14-19)

PRECAUTIONS

- Pain-free exercise

ASSESSMENT

- Quick DASH
- NPRS
- Static/dynamic scapular assessment (Kibler grading)
- Elbow PROM/AROM
- Hand and wrist AROM
- MMT as appropriate
- Scar and soft tissue mobility
- Kinetic chain assessment
- Postural assessment

TREATMENT RECOMMENDATIONS

- Advance and progress Thrower's Ten exercises
- Plyometric progression (over 4-week period)
    - Double hand chest pass (week 14)
    - Double hand overhead soccer pass (week 15)
    - Double hand chops (week 16)
    - Single hand IR at 0° abduction (week 17)
    - Single hand 90/90 IR (week 18)
    - Single arm throws (week 18)
- Endurance progression
    - Double hand overhead wall taps
    - Single arm 90/90 wall taps
    - Single arm 12 o'clock to 3 o'clock wall taps
    - Exercise blade in multiple positions

CRITERIA FOR ADVANCEMENT

- Complete all plyometrics without symptoms

EMPHASIZE

- Restoration of full strength and flexibility
- Restoration of normal neuromuscular function
- Preparation for return to sport specific activity

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Phase 5: Advanced (Weeks 20+)

PRECAUTIONS

- All progressions should be pain-free
- Monitor for loss of strength and flexibility

ASSESSMENT

- Quick DASH
- NPRS
- Static/dynamic scapular assessment (Kibler grading)
- Elbow PROM/AROM
- Hand and wrist AROM
- MMT as appropriate
- Scar and soft tissue mobility
- Kinetic chain assessment
- Postural assessment

TREATMENT RECOMMENDATIONS

- Initiate interval sports program
- Begin interval throwing at 5 months per surgeon clearance
- Begin hitting program at 5-6 months
- Continue with all upper and lower extremity mobility/flexibility exercises
- Continue with advanced shoulder and scapular strengthening exercises
- Monitor workload

CRITERIA FOR RETURN TO PARTICIPATION

- Pain-free progression through interval sports program
- Independent with all arm care exercises

EMPHASIZE

- Initiation of interval sports programs
- Return to sport participation
- Collaboration with Sports Performance experts

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