

Orthopaedic Research Clinic of Alaska (ORCA) HIGH TIBIAL OSTEOTOMY/FEMORAL CONDYLE CARTILAGE REPAIR REHAB PROTOCOL

Immediate Post-Operative Phase (0-4 weeks)

Precautions:

- NO NSAIDS
- Knee brace: locked at 0 degrees, worn 23/7
- NWB for 4 weeks
- Unlock the brace to 0-30 degrees once quad control and allowed WB
- CPM for 6 weeks (start with 0-30 degrees, progress 5 degrees per day), more flexion if defect is more posterior
- Avoid end-range flexion; target regaining extension
- Do not overload the graft
- All activities must be pain free
- May progress activities within phase if able to perform prior activities pain free

Goals:

- Edema control
- Pain control
- Early motion
- Protection of the cartilage
- Prevent contractures
- Regain VMO/Quad control
- No extension lag with SLR at 4 weeks
- ROM > 90 deg
- Wean off brace in 4 weeks if good quad control

Exercises/Activities:

Pain/Edema Control

- Elevation
- Manual lymphatic drainage/soft tissue mobilization
- Compression sleeve/TED hose
- High volt E-stim – High volt E-stim/SportsTX unit for home use
- Cool pack (caution regarding macerated wound)
- Rehab juice

Range of Motion/Motor recruitment/strength

- General ROM: heel slides
- Patella mobilization
- Suprapatellar recess TFM
- Stationary bike at 2 weeks, no resistance
- AAROM

- Quad, hamstring, calf sets with SLR
- Whirlpool as soon as wound heals
- Quad sets
- SLR 4 directions
- General conditioning
- Core strengthening
- Non-involved leg conditioning

Core Training

- Core stabilization

Physician Notification:

The physician will be notified if the patient:

1. Fails to meet goals for each phase
2. Presents with persistent joint effusion
3. Exhibits chronic regional pain syndrome symptoms
4. Drainage and/or wound breakdown
5. Infection
6. Deformity
7. Exhibits continued difficulty with ambulation
8. Develops other complications associated with osteotomy and fracture healing

NOTES:

- Do not progress until cleared by MD (satisfactory radiographs)
- MD visits: 7-10 days to remove sutures/staples and 3-4 weeks for X-Rays
- Large defect repair will heal in 6 weeks
- Small defect repair will heal in 4 weeks

Late Post-Operative Phase (4-8 weeks)

Precautions:

- NO NSAIDS
- Protect patellofemoral joint
- No strenuous activity
- D/C brace if independent SLR and good quad control
- Pacing
- All activities must be pain-free
- May progress activities within phase if able to perform prior activities pain free

Goals:

- Normal strength
- Full ROM
- Normalized gait pattern with 2 crutches
- No edema
- Progressive WB, increased by 1/3 of body weight every 2 weeks

Exercises/Activities:*Pain/Edema Control*

- Elevation
- Manual lymphatic drainage/soft tissue mobilization
- Compression sleeve/TED hose
- High volt E-stim – High volt E-stim/SportsTX unit for home use
- Cool pack (caution regarding macerated wound)
- Rehab juice

Range of Motion/Motor recruitment/strength

- Pool walking
- Stationary bike, low resistance
- Leg press 0-60 degrees, 30% body weight
- Toe raises with limited body weight
- Kinetic chain strengthening
- Multiple angle isometrics, CKC, bilateral, after 6 weeks < BW

Core Training

- Core strengthening
- General conditioning

NOTES:

- Importance of rest, especially if patient is very diligent and is overdoing it.

Early Rehabilitation Phase (8-12 weeks)**Precautions:**

- NO NSAIDS
- No impact activities
- No contact sports
- All activities must be pain-free
- May progress activities within phase if able to perform prior activities pain free

Goals:

- Able to walk independently
- Full WB
- Biking on level ground
- Full ROM

Exercises/Activities:*Range of Motion/Motor recruitment/strength*

- Low weight (max 10-12 lbs) OKC leg extension and curl
- Stationary bike with increased resistance
- Unloaded treadmill (start with retro, progress to forward walking with slight incline)
- Step ups
- Leg press 0-60 degrees
- Weight shifting remedial balance drills

- Hamstring curls
- Multi-hip strengthening
- Sidestepping (toward end)
- Rowing ergometer short arc knee excursion
- Short arc quads (0-40 degrees) CKC

Core Training

- Core strengthening
- OK to shoot baskets
- Straight leg swimming, no kicking

NOTES:

- Do not progress to next phase until cleared by MD

Late Rehabilitation Phase (12-16 weeks)

Precautions:

- NO NSAIDS
- May progress activities within phase if able to perform prior activities pain free

Goals:

- Full WB
- Normalized gait

Activities:

- Resisted OKC exercises with ≤ 20 lbs
- Progress resistive exercise for hamstrings, calves, hip, and upper quadrants
- CKC strengthening, initiate single leg stance
- Progress balance/proprioception drills
- Cycling on level surfaces
- Treadmill (retro walking, forward walking, incline, level)
- Ice skating with brace (no hockey yet)
- Cross country skiing (level)
- Vigorous walking
- Light jogging at end of phase

NOTES:

- Do not progress to next phase until cleared by MD

Sports Specific Phase (4-8 months)

Precautions:

- NO NSAIDS UNTIL APPROVED BY MD
- No pivoting activities until cleared by MD
- May progress activities within phase if able to perform prior activities pain free

Goals:

- Return to competitive sports by 6-8 months depending on the extent of the repair

Activities:

- Sport specific drills
- Rollerblading
- Mountain biking
- Running

NOTES:

- Participation in sports as per MD clearance

KEY: CKC = Closed Kinetic Chain

OKC = Open Kinetic Chain