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**MICROFRACTURE/CHONDRAL PICKING TREATMENT
OF ARTICULAR CARTILAGE DEFECTS
PHYSICAL THERAPY PROTOCOL**

Preoperative Guidelines

- Restore full AROM
- Teach normal heel-toe gait
- Strengthen involved extremity
- Decrease effusion
- Educate Patient on post-op protocol, use of crutches (level and stairs), importance of post-op extension

Note: Exercise prescription is dependent upon the location of the lesion, the tissue healing process and *individual* functional readiness in *all* stages. If any concerns or complications arise regarding the progress of any patient, physical therapy will contact the orthopedist.

Phase I (Post-op Days 1 – 14)

- No Resisted Closed Chain Exs x 6 weeks**
- No Resisted Open Chain Ex**
- Exercises/ROM should not result in increased pain or swelling**
- Tibiofemoral Defect:** Crutches with Touch WB (**x 6 weeks**). No Brace
- Patellofemoral Defect:** Brace 0-20 (**x 6 weeks**), WBAT with crutches. D/C crutches when normal gait.
- AROM as tolerated. Repeat ROM throughout day...Go through knee ROM 5-10 minutes every waking hour
- Stationary bicycle for ROM, seat adjusted high, no resistance, many revolutions...progress to 1000 cycles or more/day
- Passive extension with heel on bolster or prone hangs
- Patellar mobilization (teach patient)
- Scar massage when incision is well healed
- Calf pumping
- Standing HS curls in parallel bars
- SLR x 4 with knee in brace (for patellofemoral defect) and if no lag
- Electrical stimulation in full extension with quad sets and SLR

Goals: Bicycle: 500 cycles or more per day the first week, 1000 cycles or more per day thereafter, Full extension, no increase in swelling or pain

Phase II (Weeks 3 – 5)

- Continue appropriate previous exercises
- AROM, AAROM as tolerated
- SLR x 4 – add light weight below the knee if quad control is maintained
- Pool therapy – deep water (chest/shoulder) walking and ROM exercise, water jogging
- Stretches – HS, AT, Hip flexors, ITB
- Patellofemoral (brace locked at 0-20)
 - BAPS, ball toss, body blade, heel raises
 - Forward, backward, lateral walking in parallel bars
 - Weight-shifting
 - Well-leg Theraband

Goals: No extensor lag, full ROM, no effusion

Phase III (Weeks 6 – 8)

- Tibiofemoral – WBAT, D/C crutches when gait is WNL
- Patellofemoral – D/C brace
- Continue appropriate previous exercises and stretches
- Begin Well-leg Theraband exercises for tibiofemoral defects (continue for patellofemoral)
- Leg press/Total Gym with light weight in pain free ROM
- Mini squats
- Wall sits for time (in pain free ROM)
- Continue stationary bike. Add light resistance
- Hamstring curls – closed chain (carpet drags or rolling stool)
- Treadmill – Backwards and forward walking. Ensure proper heel-toe gait
- Pool therapy – Waist deep water walking or slow jogging

Goals: Normal heel-toe gait, Wall sit for 3 mins, walk 2 miles at 18 min/mile pace

Phase IV (Weeks 9– 12)

- Continue appropriate previous exercises
- HS curls – open chain
- Proprioceptive training – BAPS, plyoback, body blade, fitter, slide board
- Lateral step downs in pain free range only
- Continue stationary bike, gradually increase resistance. Keep seat high
- Treadmill – Forward walking approaching 15 min/mile pace
- Tibiofemoral – Elliptical trainer, Stairmaster (if gait pattern normal)
- Patellofemoral – Elliptical trainer – **No** Stairmaster
- Prone quad stretches

Goal: Walk 2 miles at 15 min/mile pace without edema or increased pain

Phase V (Months 3 – 4)

- Gym Program
- Continue appropriate previous exercises with progressive resistance
- Treadmill – Running progression program
- Begin light plyometrics (bilateral)

Goal: Run 2 miles at easy pace without increased pain or edema

Phase VI (Months 5 – 6)

Continue appropriate previous exercises
Progress Agility drills / Plyometrics (to single leg)

Goals: Return to all activities, Functional tests at least 90% of opposite leg to clear for sports and discharge (single leg hop and 12 meter hop for time)

No contact sports until 6 months post-op