

**Dr. Ernat's HTO or DFO
Post-Operative Protocol**

May attend up to 1-3 times weekly for 12-16 weeks.

Timing of each phase varies based on individual patient factors, length of time immobilized, strength/ROM status, and expected performance/activity demands.

PHYSICAL THERAPY (PT): Begin after first post-op visit, about 2 weeks after surgery.

RESTRICTIONS: Gentle ROM first week as tolerates. May immediately progress to ROM as tolerated pending wound healing and pain control.

WB / CRUTCHES (OPENING WEDGE PROCEDURE): TTWB 6-8 weeks with brace locked in extension and crutch assistance until cleared by Dr. Ernat. Wean crutches by 6-8 weeks pending X-ray evidence of healing.

WB / CRUTCHES (CLOSING WEDGE PROCEDURE): TTWB 2 weeks with brace locked in extension and crutch assistance. After 2 weeks may progress with WBAT with brace in extension. Wean crutches and unlock brace by 4-6 weeks pending patient tolerance.

BRACE: ROM brace - anticipate brace use for minimum 6-12 weeks post-operatively pending progression, radiographs, body mass index, and procedure performed.

RANGE OF MOTION: Gentle ROM week 1 and then progress to full ROM as tolerated there after.

STRENGTHENING: Quad sets and SLR immediately in brace. No true strengthening until around 10-12 weeks.

MODALITIES:

Per PT or ATC's discretion. Ice use 3-5 x/day first 10-14 days then 2-3 x/day wks 1-4 as needed.

RETURN TO ACTIVITY: subject to change, based on individual progress

Recumbent bike: 8 weeks

Elliptical: 10 weeks

Planks: 10 weeks

Swimming: 10 weeks

Road bike outside: 10 weeks

Light jogging: 4 months

Running: 5-6 months

Golf (chip/putt): 4 months

Golf (full swing): 4 months

Skiing: 6 months

Tennis: 6 months

Soccer: 6 months

Basketball: 6 months

Contact sports: 6 months

PHASE I: PROTECTION / RANGE OF MOTION (*POST-OP – 1 WEEK*)

- Control pain and swelling, decreased effusion, wound healing.
 - Rest, ice, compression, elevation 3-5 x/day or more as needed to help decrease pain and swelling.
 - Gain full extension.
 - Gluteal sets, quad sets, SLR. Hip abduction and adduction.
- 1) Home exercise program to be performed 3-5 times daily.

PHASE II: RANGE OF MOTION / LIGHT RESISTANCE (*POST-OP WKS: 2-8*)

- Pain management and control of effusion.
- Increased range of motion (ROM) as tolerates.
- Neuromuscular re-education of quadriceps.
- **7-8 weeks** may begin walking on an underwater treadmill.
- Upper extremity reaches and core, flexibility exercises.
- Modalities per therapist discretion.
- Home exercise program to be performed 3-5 times daily.

PHASE III: STRENGTHENING (*POST-OP WKS: 8-16*)

- **NO** pivoting, agility, twisting.
- **8 weeks:** recumbent/stationary bike
- Good quad recruitment and normal gait, SLR without lag.
- Absence of pain, no effusion or edema.
- Full passive, active ROM, normal knee ROM.
- Progression of quad strength exercises and closed kinetic chain exercises.
- Closed chain double leg & single leg strength as tolerated, mini-squats, step-ups, toe raises, total gym as tolerated.
- Quadriceps/hamstring isometrics. Standing balance training. Isokinetic exercises.
- Improved stability with unilateral stance. Equal hip, glute and core strength bilaterally.
- Returned to full or near full participation in simple activities of daily living.
- Preparation for advanced exercises.
- **12 wks:** Leg press, step-downs, lateral step-ups.
- **12 wks:** Strength, endurance, proprioception and flexibility exercises.
- **12 wks:** Swimming, stair master, mini squats, cycling, NordicTrack.

PHASE IV: RETURN TO ACTIVITY (*POST-OP WKS: 16+*)

- **16+ wks:** Initiate running and cutting programs
- Increased strength, power, flexibility, endurance.
- Agility drills, plyometric training and sport-specific drills.
- Preparation for return to full unrestricted activities.
- Satisfactory clinical exam, full confidence in knee and pain free activity by 5 months.
- Functional testing at least 90% of contralateral leg
- Isokinetic testing at least 90% of contralateral leg

KEY FOR PATIENTS:

POST-OP = after your surgery

WB = weight-bearing

ROM = range of motion

PROM = passive range of motion, someone else moves you

AAROM = active assisted range of motion

AROM = active range of motion, you move yourself

RROM = resisted range of motion, motion against resistance, strengthening

SLR = straight leg raise

WNL = within normal limits