



## Knee High Tibial Osteotomy (HTO)

Ryan W. Hess, MD  
PCC: Tracey Pederson  
Office: (763) 302-2223  
Fax: (763) 302-2401

- Phase I – Immediate Post Surgical Phase (Week 0-2)
  - Goals:
    - Maintain integrity of repair
    - Gradually increase PROM
    - Decrease pain and inflammation
    - Prevent muscular inhibition
  - Cryotherapy for pain/inflammation
    - Ice 15-20 minutes every hour
  - Sleeping
    - Sleep in brace/knee immobilizer
  - Weight Bearing
    - TTWB with crutches in hinged brace x 6 weeks post op
  - ROM
    - Flexion to 90 degrees, gentle AAROM only
    - Okay to come out of brace for PT
  - Muscle Retraining
    - Quadriceps isometrics, SLR
- Phase II – Protection Phase (Week 2-6)
  - Goals
    - Allow healing of soft tissue/bone
    - Do not overstress healing tissue
    - Gradually increase ROM
      - Progression based on swelling/inflammation and guidelines below
    - Decrease pain and inflammation
  - Brace
    - Continue hinged brace until cleared by Dr. Hess
    - Locked in extension for ambulation for 6 weeks post op
  - Weight bearing
    - Continue TTWB
    - Can sleep without hinged brace after first 2 weeks if comfortable
  - ROM guidelines (PROM, AAROM)

- 0-120 degrees by week 6
  - E-stim to quads
  - Quad isometrics
  - SLR
  - Gentle, submaximal isometric knee extension
- Phase III – Intermediate Phase (Week 6-9)
  - DO NOT begin intermediate phase until cleared by Dr. Hess (usually with radiographic healing of osteotomy)
  - Goals
    - Gradual improvement in ROM
    - Eliminate swelling
    - Control forces on extensor mechanism
  - Weight bearing
    - When cleared by Dr. Hess based on xray, may discontinue knee brace and wean crutches
  - ROM
    - As tolerated. Goal full ROM by end of week 6
  - Continue quadriceps strengthening
  - Continue above exercises
  - Bicycle
  - May begin pool program
- Phase IV –Strengthening Phase (Week 9-16)
  - Goals
    - Maintain full ROM
    - Improve limb strength and endurance
    - Gradual return to functional activities
  - Criteria to progress to Phase IV
    - Full, non-painful ROM
    - Absence of swelling/inflammation
    - Voluntary control of quads
  - Continue above exercises
  - Wall squats
  - Knee extension
  - Progress to functional drills as tolerated
  - Begin sport specific drills as appropriate
- Phase V –Return to Activity Phase (Week 18-24)
  - Goals
    - Gradual return to strenuous work activities
    - Gradual return to recreational sports activities
  - Criteria to progress to Phase V
    - Appropriate strength level/Clinical exam

