Center for Athletic Medicine
Dr. Preston Wolin
High Tibial Osteotomy Protocol

~Please call 773.248.4150 with any and all questions~

Post op 0 to 3 weeks:
Touch weight bearing with brace open to full ROM
Passive ROM using slider board
Pedal rocking on bicycle

Post op 3 to 6 weeks:
Continue touch weight bearing with brace open to full ROM
Full circle pedaling on bicycle – very light resistance
Active ROM
Side lying gluteus medius strengthening
Hip ab/adduction, flexion and extension with resistance fixed above knee i.e. pulley or resistance tubing
Pool exercises – hip ab/adduction, flexion and extension, knee flexion and extension
Gait pattern training with crutches focusing on proper heel strike/toe off
Pool – deep water running and cycling
Leg press or squat with weight off-loaded to 24-40 lbs (watch ROM restriction with any cartilage/meniscus restoration/repair

At 6 weeks, patient to follow up with our office and radiographs will be taken. Weight bearing status will be determined at that time

Post op 6 to 9 weeks:
Pool – shallow water walking as weight bearing restrictions allow (As a general guideline, when 60% of body is submerged, 60% of body weight is off-loaded)
Standing/seated calf raise
Bilateral wobble board balancing as weight bearing status allows
Knee flexion/extension with very light resistance

Upon Full Weight Bearing
Gait training to restore normal gait
Step up and step down to work on alignment and eccentric control
Elliptical trainer and bicycle for cardiovascular conditioning

*****If a patient is not progressing, please call the office for recommendations*****

REHABILITATION

Early postoperative knee ROM exercises provide the benefits of joint healing and articular cartilage nourishment as well as restoring lower limb neuromuscular function. Combined with this, is the return to normal weight bearing, as tolerated by

each individual surgical procedure, which is essential for healthy bone turnover and osteotomy healing. Postoperative physical therapy programs should focus on these components while respecting the desired outcome of the realignment procedure which include union and restoration of alignment.

ROM

Our post-osteotomy rehabilitation protocol is directed at the restoration of full pre-operative knee ROM as an important factor in the long-term success of the procedure. The beneficial effect of a full ROM on cartilage health and normal joint forces should be emphasized. Full extension should be achieved by postoperative week 6. If the return of full knee ROM is behind schedule, active exercises with slight volitional overpressure are recommended.

Weight Bearing

The weight-bearing progression after knee osteotomy is dependent on the type of osteotomy used and any other cartilage restoration procedure performed.

After an opening-wedge osteotomy, we restrict patients to TOUCH weight bearing, equivalent to 25-40 pounds, for the first 6 weeks. If any osteocartilaginous procedure has been performed in combination, the opening-wedge protocol takes preference.

After a closing-wedge osteotomy, we allow PROTECTED weight bearing for the first 6 weeks. If a cartilage restoration procedure has been performed also, a partial weight bearing protocol should take preference.

From the 6 week mark, the progression of weight bearing is dependent on the appearance of the radiograph of the osteotomy at this stage. It would be anticipated that any closing-wedge osteotomy could progress to WEIGHT-BEARING AS TOLERATED at this point, with the use of a cane or a single crutch, if consolidation and progression toward union is occurring. An opening-wedge osteotomy should progress to PARTIAL weight bearing for 3 weeks and then to PROTECTED weight bearing for 3 weeks if consolidation is evident on the radiograph, and there is no evidence of hardware loosening of change in position. (See table)

All other modalities available to the physiotherapist should be used in the early rehabilitation process. Neuromuscular programs aimed at the maintenance of surrounding joint strength and muscle function, as well as pain management modalities, should be employed during the initial postoperative 6 weeks.

Gait retraining and returning to a fully functional state should be additional goals throughout the rehabilitation process. More directed therapy to correct other functional impairments in addition to the above should take place after week 12.