



POSTOPERATIVE REHABILITATION PROTOCOL FOLLOWING HIGH TIBIAL OSTEOTOMY

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STAGE	AIMS	TREATMENT GUIDELINES
Stage I Acute Recovery Week 1-4	<ul style="list-style-type: none"> ▪ To facilitate bony union of fracture site ▪ Minimise concurrent postoperative complications ▪ Minimise muscular atrophy 	<ul style="list-style-type: none"> ▪ Remain TWB on crutches until at least 4 weeks ▪ Brace to remain on at all times until 6 weeks postop ▪ Instruction regarding use of crutches TWB ▪ Reduction of swelling and pain using ice, elevation and exercises ▪ Exercises instructed from day 1 postop: static quads, straight leg raise and ankle ROM exercises.
Stage II 4-6 Weeks	<ul style="list-style-type: none"> ▪ Facilitation of bony union through PWB ▪ Minimise concurrent postoperative complications 	<ul style="list-style-type: none"> ▪ Continue exercises as above ▪ Commence partial weight bearing <i>within pain free threshold</i>. May progress to full weight bearing by week 6 if pain free ▪ Gait retraining with crutches focusing on correct heel strike/toe off
Stage III 6-12 weeks	<ul style="list-style-type: none"> ▪ Restoration of normal gait pattern ▪ Restoration of muscular strength and range of motion 	<ul style="list-style-type: none"> ▪ Gait retraining focusing on correct heel strike/toe off and VMO activation during stance ▪ Aim for a full range of motion using active and passive techniques ▪ Encourage VMO activation with co-contraction and biofeedback techniques. Progress by increasing repetitions, length of contraction and dynamic conditions ▪ Hamstring strengthening with static weight bearing co-contractions progressing to active free hamstring contractions then to resisted hamstring strengthening ▪ Gym equipment can be introduced such as stationary bike (encourage daily), stepper, leg press, mini trampoline, cross trainer with minimal resistance ▪ Pool work starting with deep water running. Swimming with pool buoy progressing to free kicking ▪ Muscle tightness can be addressed with soft tissue techniques and stretching particularly hamstrings and calf muscles ▪ Open chain exercises should be avoided, rather use closed chain exercises performed with co-contraction of hamstrings and quadriceps which lessen the patello-femoral joint forces and ensure more functional stresses on the joint and entire limb ▪ Once full ROM achieved commence rower ▪ Once sufficient quadriceps strength commence functional eccentric quads exercises such as steps downs starting with a ~10cm high platform and increasing height as progresses ▪ Treat beyond the knee joint for any deficits, e.g. gluteal control, tight hamstrings, ITB, gastrocs and soleus, etc.
Stage IV 12 Weeks +	<ul style="list-style-type: none"> ▪ Continuation of functional rehabilitation 	<ul style="list-style-type: none"> ▪ Progress co-contractions to more dynamic movements, e.g. step lunges, half squats, wall squats ▪ Start cycling on normal bicycle ▪ Progress resistance on gym equipment such as exercise bike, rower, cross trainer ▪ Ensure successful gait restoration or continue instructions as above ▪ Pool work can include using flippers.