

Physical therapy and bracing for **internal tibial** limb lengthening

Physical Therapy and bracing for tibial lengthening deformity correction using an external device

1. Immediately after surgery
 - a. Use of a dorsiflexion non-weight bearing brace to keep the ankle in neutral. This may be removed for physical therapy.
*** if the patient had a gastroc recession during surgery, then the prescribed brace must be used full time for 6 weeks.
 - b. gait training, non-weight bearing (NWB) on the affected extremity. The patient may rest the leg on the floor for balance, if necessary, in order to prevent falls.
 - c. patient should practice ankle pumps, passive and active knee (range of motion) ROM, quad strengthening (straight leg raises) and abductor strengthening (abduction leg raises).
2. 1-2 weeks after surgery PT 2-3 times per week
 - a. Use of a dorsiflexion non-weight bearing brace to keep the ankle in neutral. This may be removed for physical therapy.
*** if the patient had a gastroc recession during surgery, then the prescribed brace must be used full time for 6 weeks.
Continue to build strength and achieve flexibility in all muscle groups.
 - b. Resistance bands may be used for ankle strengthening.
 - c. Patient should be performing a home program outside of PT
 - d. The patient should use a dorsiflexion brace outside of PT to prevent a plantarflexion contracture.
 - e. The patient must maintain ankle passive dorsiflexion to neutral and passive knee extension with a deficit no greater than 20 degrees.
***If the patient starts to demonstrate a knee flexion contracture, then a knee extension brace will be provided and should be as instructed by the surgeon
3. After total lengthening and correction achieved, but before the new bone has healed
 - a. If the patient has achieved goals within the limitations of the device wear, then a reduction in PT frequency can be discussed with input from the PT and the physician. This is only considered if the patient has demonstrated an understanding of the home program and achieved goals.
 - b. If the patient has any flexion contractures at the knee or ankle, PT must continue at the 2-3 times per week intervals
4. After the new bone has healed, and before implant removal
 - a. The patient will be instructed to partial weight bear initially
 - b. Advancement to full weight bearing (FWB) will depend on x-ray appearance.
 - c. After FWB is achieved, the patient may participate in all strengthening activities.
 - d. The patient may not participate in high impact activities.
5. After implant removal
 - a. NWB for 4 weeks.
 - b. Continue all NWB strengthening and stretching.
6. After clearance to resume WB post device removal
 - a. Advance to weight bearing as tolerated (WBAT).

b. Resume PT as indicated to achieve full activity goals.

***Each patient's specific instructions and clinical course will vary according to their particular condition and clinical/therapy needs.

***It is very helpful for the patient to bring a form to their physician appointment that shows their knee, hip, and ankle range of motion. That way their surgeon will know how they are doing when their muscles are warmed up and maximally flexible.