**Supplemental Digital Content Figure 2: AlterG Protocol**

AlterG sessions will begin 14- 28 days following definitive fixation. Prior to starting the AlterG sessions, participants will be non-weight bearing. Participants will complete 3 AlterG sessions per week for a total of 10 weeks. Each session will begin with a series of warm-up exercises followed by time on the treadmill (15-30 minutes). The goal is to have participants full weight-bearing 12-14 weeks following definitive fixation.

**Phase 1**:

For the first two weeks, participants will walk on the treadmill for 15 minutes at 20% weight bearing. Participants who are unable to tolerate walking with normal mechanics for the entire 15 minutes may do pre-gait activities (e.g. weight-shifts, heel raises) while weight bearing at the required load. Weight bearing will increase to 30% during the third week.

Time and speed on the treadmill will be determined by participant pain and comfort level. Physical therapists will assess pain and comfort throughout the session and will make adjustments accordingly. While 15 minutes is the goal, participants can stop if they are experiencing significant pain or discomfort. Pain will be formally assessed at the beginning and end of the session.

*Progression to Phase 2*:

Participants will continue progressing according to the AlterG weight bearing protocol (outlined below) unless the surgeon indicates otherwise. If the surgeon determines that it is unsafe to progress, participants will either maintain at current load or stop AlterG sessions altogether until the surgeon determines it is safe to proceed. Once cleared to continue, participants will progress on an accelerated trajectory to achieve full weight-bearing within the 12-14 week period. Weight bearing will increase in increments of 5% each session until the patient is back on schedule as outlined below.

**Phase 2:**

Participants will walk on the treadmill for up to 30 minutes each session. Weight bearing will increase by 10% each week until participants are full weight bearing.

For each session, therapists will document speed, duration, weight bearing, and pain on study case report forms. Additional detail including warm up exercises and pre-gait activities will also be documented. If participants are unable to complete a session, therapists will document the reason(s).

**Discharge from the Program**:

Participants will complete 10 weeks of the program; there is no early discharge. If participants miss more than 2 consecutive weeks, they will not be brought back for additional therapy using the treadmill.

**AlterG Schedule**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week** | **Warm-up Exercises** | **Weight Bearing in Treadmill** | **Alternative Weight Bearing Activities in Treadmill** | **Time in Treadmill** |
| 1-2 | --- | NWB | --- | --- |
| Phase 1 |  |  |  |  |
| 3 | Calf & Hamstring Stretch, Heel Slides  | 20% | Walking and/or weight shifts (side/side & forward/back), heel raises, TKEs¥ | 15 min  |
| 4 | Calf & Hamstring Stretch, Heel Slides | 20% | Walking and/or weight shifts (side/side & forward/back), heel raises, TKEs¥ | 15 min  |
| 5 | Calf & Hamstring Stretch, Heel Slides | 30% | Walking and/or weight shifts (side/side & forward/back), heel raises, TKEs¥ | 15 min  |
| Phase 2 |  |  |  |  |
| 6 | Calf & Hamstring Stretch, Heel Slides | 40% | None- participant should be walking | Up to 30 min |
| 7 | Calf & Hamstring Stretch | 50% | None- participant should be walking | Up to 30 min |
| 8 | Calf & Hamstring Stretch | 60% | None- participant should be walking | Up to 30 min |
| 9 | Calf & Hamstring Stretch | 70% | None- participant should be walking | Up to 30 min |
| 10 | Calf & Hamstring Stretch | 80% | None- participant should be walking | Up to 30 min |
| 11 | Calf & Hamstring Stretch | 90% | None- participant should be walking | Up to 30 min |
| 12 | Calf & Hamstring Stretch | 100% | None- participant should be walking | Up to 30 min |
| ¥ TKEs - Terminal Knee Extensions |