

**Shelley Burgess, PT,  
MSPT, Mary Talbert  
McElveen, and Hampton  
Shugart**  
InShape Physical  
Therapy and Wellness  
Center, Lexington, SC

**Who:** 17-year-old male track/cross-country athlete recovering from left tibial fracture

**What:** Return to running progression on the AlterG Anti-Gravity Treadmill for athlete that sustained tibial stress fracture secondary to overtraining

**Why:** Body weight support allowed the athlete to return to running with less impact. He was also able to continue cardiovascular conditioning while recovering, allow him to return to pre-injury performance levels in a shorter period of time progression for returning to Full Weight Bearing.

---

## Introduction

Patient is a 17 y/o male track/cross country athlete recovering from a left tibial fracture. Patient's tibia was weakened from a previously undiagnosed stress fracture and suffered a closed fracture while running on 5/25/2012. After seeing an orthopedic surgeon, physical therapy and AlterG treatment was prescribed. An orthopedic boot was worn until 7/12/12 and weightbearing was limited. Patient started therapy on 6/19/2012 to maintain strength and range of motion while wearing the boot.

---

## Goals

- Increase left ankle range of motion to within normal limits.
- Decrease pain at fracture site to 0/10 VAS.
- Increase left leg muscle strength to WNL
- Run at 50% weightbearing for 30 minutes.
- Normalize gait pattern.
- Return to running outside painfree.
- Return to competitive sports (track, cross country running)
- Return to a regular exercise program

---

## History

- 6/19/2012: Initial evaluation completed with Physical Therapist on site.
- 6/20-7/11/2012: Patient did therapeutic exercises 2-3x/ week, (focusing on strength and range of motion).
- 7/12/2012: Patient saw orthopedic surgeon and cleared to weight bear without the orthopedic boot, start more aggressive therapy, and start AlterG running.

- 7/13/2012- 8/14/2012: Patient does AlterG running and physical therapy 2-3x /week.
- 8/15/2012: Patient saw orthopedic surgeon with x-ray showing good fracture healing and cleared for low mileage running outside every other day.
- 8/15-9/7/2012: Patient continues high level physical therapy, as well as AlterG focusing primarily on speed work and returning to previous 4-5 minute mile pace.
- 9/8/12: Patient saw orthopedic surgeon and was discharged from physical therapy with complete healing and recovery of fracture site.
- 9/9/2012: Patient returned to full training regime for cross country/track with good prognosis.

## Progression Table

Weeks	Program type/ weightbearing %	Speed (mph)	Incline (%)	Time	Frequency
<b>Week 1</b>	Walk/Jog/Retro Walking- 50-70%	3.0-4.8/1.7: retro	0	10min	1x/week
<b>Week 2</b>	Walk/jog(intervals) retro walking- 50-70%	3.8-6.0/1.8: retro	0	30min	2x/week
<b>Week 3</b>	Walk/jog(2:2 & 0.5:1 intervals) retro walking- 50-65%	3.8-6.0/1.8: retro	0	30min	3x/week
<b>Week 4</b>	Walk/jog(2:2 & 0.5:1 intervals) 50-70%	3.6-7.0	0	30min	3x/week
<b>Week 5</b>	<i>Patient on Vacation</i>				
<b>Week 6</b>	Walk/jog(2:2 & 0.5:1 intervals) 70-75%	3.6-7.0	0	30min	1x/week
<b>Week 7</b>	Walk/jog(3:2:1 & 2:1 intervals) 70-80%	6.5-9.0	0	30min	2x/week
<b>Week 8</b>	Walk/jog(3:2:1 & 2:2 intervals) 70-85%	6.5-9.0	0	30min	2x/week
<b>Week 9</b>	Walk/jog(3:2:1 & 2:2 intervals) 75-90%	7.0-12.0	0	30min	2x/week

## Results

Patient progressed very well through physical therapy programs and AlterG running from start to finish. Patient was able to accomplish all goals, short and long term, set throughout treatment with the help of the AlterG. Initially, the AlterG allowed for return to running/weightbearing with less

impact. Secondly, the AlterG allowed patient to continue cardiovascular training while recovering, so he could return to his pre-injury mile times, by performing speed-work at slightly decreased weightbearing percentages. Overall, the AlterG showed results that include, but are not limited to: quicker recovery time, increased muscle tone/strength, and faster overall return to previous activity levels.