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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 over training.

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 year-old 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 in May 2012. After seeing an orthopedic surgeon, physical therapy and AlterG treatment was prescribed. An orthopedic boot was worn until July 2012 and weight-bearing was limited. Patient started therapy 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% weight-bearing for 30 minutes.
- Normalise gait pattern.
- Return to running outside pain free and return to competitive sports (track, cross country running)
- Return to a regular exercise program.

History

June 2012

- Initial evaluation completed with Physical Therapist on site.
- Patient did therapeutic exercises 2-3 time per week, (focusing on strength and range of motion).

July 2012

- Patient continues therapeutic exercises 2-3 time per week
- Patient saw orthopedic surgeon and cleared to weight bear without the orthopedic boot, start more aggressive therapy, and start AlterG running.

August 2012

- Patient continues therapeutic exercises 2-3 time per week
- Patient saw orthopedic surgeon with x-ray showing good fracture healing and cleared for low mileage running outside every other day.
- Patient continues high level physical therapy, as well as AlterG focusing primarily on speed work and returning to previous 4-5 minute mile pace.

September 2012

- Patient continues high level physical therapy, as well as AlterG training.
- Patient saw orthopedic surgeon and was discharged from physical therapy with complete healing and recovery of fracture site.
- Patient returned to full training regime for cross country/track with good prognosis.



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/weight-bearing 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 weight-bearing 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.

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

