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Who: 19-year-old female NCAA Div I Soccer Player.

What: Athlete initiated walking program in the AlterG Anti-Gravity Treadmill™ 4 weeks Post ACL Reconstruction.

Why: The AlterG Anti-Gravity Treadmill enabled this athlete to progressively load the lower extremities and maintain non-compensatory gait during her rehabilitation to get to goal of jogging at Full Weight Bearing with no compensation or symptoms at 12 weeks post-op.

Introduction

19 y/o female NCAA D1 soccer player with ACL Allograft Reconstruction. Sport is played on turf, requires constant running and frequent change of direction.

Goals

- Following surgery, incorporate de-weighting into rehabilitation protocol
- Develop a progressive return to activity
- Maintain fitness and function during rehabilitation

Progression

Four (4) Weeks Post ACL allograft reconstruction

- Athlete initiated a walking program in the AlterG Anti-Gravity Treadmill at 65% body weight (BW)

Five (5) Weeks Post ACL allograft reconstruction

- Athlete interspersed 1 minute jogging intervals at 50% BW with her walking program resulting in a 1:1 walk/jog interval duration ratio and 50:65 BW ratio. The jogging interval was visually assessed by the ATC and replaced by walking at the onset of a change in gait mechanics
- During the first training session discernable changes in the athlete's jogging gait occurred approximately 30 seconds into the 3rd interval
- The following day the athlete successfully completed the prescribed training session with no discernable change in gait mechanics during 5 intervals
- Interval duration ratio walk/jog was maintained at 1minute: 1minute while training load and volume were gradually increased over the following weeks

Ongoing Progression

- Beginning Week Six, 55% BW during the 5 - 1 min. Intervals; End of Week Six, 55% BW for 7 intervals; beginning Week Seven, 60% BW for 7 intervals; End of Week Seven 60% BW for 10 intervals; Week Eight, 65% BW for 10 intervals
- During weeks Nine through Eleven the athlete stayed at 70% BW for 10 intervals. Body weight then progressed to 75%, 85% and finally 95%, which was achieved 3 days prior to Week Twelve. Body weight progression, interval duration and training volume were determined by visually ensuring that the athlete's gait mechanics and stability were not impaired with the progression
- At the 12 week mark the athlete initiated over ground jogging at 50% Borg rating of perceived effort (RPE). Her jogging gait presented with full weight bearing during foot strike bilaterally with no compensations. No pain or swelling of the knee was reported during or after the workout



Results

During the eight weeks of reduced body weight training on the AlterG Anti-Gravity Treadmill, the athlete achieved work loads (RPE) adequate to maintain cardiovascular fitness and also integrated a program to refine her running mechanics. The AlterG Anti-Gravity Treadmill enabled this athlete to progressively load the lower extremities and maintain non-compensatory running gait during her rehabilitation to achieve full weight bearing jogging at 12 weeks with no gait compensations or loss of cardiovascular endurance.

Weeks (post-op)	Program on AlterG Anti-Gravity Treadmill	Intervals
Four (4)	Initiated walking @ 65% BW	
Five (5)	1:1 walk/jog interval ratio and 50:65 BW ration	5
Six (6) - Early	1:1 walk/jog interval ratio and 50:55 BW ration	5
Six (6) - Late	1:1 walk/jog interval ratio and 50:55 BW ration	7
Seven (7) - Early	1:1 walk/jog interval ratio and 50:60 BW ration	10
Seven (7) - Late	1:1 walk/jog interval ratio and 50:60 BW ration	10
Eight (8)	1:1 walk/jog interval ratio and 50:65 BW ration	10
Nine (9)	1:1 walk/jog interval ratio and 50:70 BW ration	10
Ten (10)	1:1 walk/jog interval ratio and 50:75 BW ration	10
Eleven (11)	1:1 walk/jog interval ratio and 50:85 BW ration	10
Eleven (11) - Late	1:1 walk/jog interval ratio and 50:95 BW ration	10
Twelve (12)	Initiated overground jogging at 50% Bore RPE	