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Who: 65-year-old active female with long history of L knee pain and OA, elected L TKA to address symptoms and improve quality of life.

What: 18 days post-op walking program was initiated on the AlterG Anti-Gravity Treadmill™.

Why: Body weight support was used early on in the rehabilitation process to normalize gait mechanics and increase patient's confidence in ambulating without and assistive device. The AlterG allowed the patient to progress in a controlled, fall safe environment.

Introduction

65 year-old active female with long history of left knee pain from osteoarthritis that was progressively becoming worse and limiting her activity level. She underwent elective left total knee arthroplasty. Prior to surgery the patient was doing aquatic exercises 3x/week and working out with a personal trainer for upper body strengthening 2x/week.

Goals

- Increase left knee ROM to functional levels to assist with gait, ADL's
- Tolerate standing to participate in ADL's
- Tolerate ambulating x 20' on level surfaces without an assistive device
- Tolerate ambulating up/down 3 steps
- Tolerate squatting to knee high surfaces

History

The patient had long history of left knee osteoarthritis and pain which was getting worse and limiting daily activity. Developed increased left knee pain after a fall 2 years ago. Consulted with MD and had a course of physical therapy which provided relief for approximately a year. When symptoms increased and icing and exercises did not provide relief the patient elected to undergo left total knee arthroplasty. She underwent 3 days of inpatient care, followed by 5 days of inpatient rehabilitation, then started outpatient rehabilitation. She initially had significant pain and stiffness in the left knee, especially medially. At initial evaluation the patient's left knee PROM was: flexion = 93 degrees, extension = -3 degrees. The patient was ambulating with a front wheeled walker.

18 days post-op, the patient initiated a walking program on the AlterG Anti-Gravity Treadmill at 50% of her body weight at 2.0 mph and no incline.

The protocol included gait training (on the AlterG), soft tissue mobilization, stretching, strengthening for the core and left lower extremity, and proprioception drills. Program duration was 6 weeks.

Considerations

Any increase in symptoms were considered when progressing ambulation on the AlterG. Speed, and body weight were increased as patient's pain level improved. Progression - See table on right.

Progression Table

Weeks	Program	Speed (mph)	Incline (%)	Time	Frequency
<i>Week 3</i>	Walking at 50% of BW	2.0 mph	0	10 min	2x/wk
<i>Week 4</i>	Walking at 60% of BW	2.0 mph	0	10 min	2x/wk
<i>Week 5</i>	Walking at 70% of BW	2.0 mph	0	15 min	2x/wk
<i>Week 6</i>	Walking at 70-75% of BW	2.5 mph	1%	15-18 min	2x/wk
<i>Week 7</i>	Walking at 75%-80% of BW	2.8 mph	1%	20 min	2x/wk
<i>Week 8</i>	Walking at 80%-85% of BW	3.0 mph	1%	20 min	2x/wk

Results

The patient was seen 2x/wk x 6 weeks. The patient started with increased left knee pain and stiffness that was monitored during her rehab. The patient did achieve all of her goals and has returned back to an exercise program and walking with her husband after dinner. The AlterG Anti-Gravity Treadmill was incorporated early in the rehabilitation program as a way to restore her normal gait and increase her confidence when ambulating without an assistive device. The AlterG Anti-Gravity Treadmill also allowed the patient to progress in a safe environment and by unweighting her, she was symptom-free during her gait training sessions. The patient walked on the AlterG 2x/week and progressed her time, speed and increased her body weight to focus on returning to ambulating unassisted. The patient was discharged after 2.5 postoperative months. She was able to return to ambulating outside on varying terrain up to 40 minutes in duration and joined a gym to continue with an exercise program.

Progression Table 2

Days	Program (% Body Weight and Speed)	Speed (mph)	Frequency
<i>Week 42/10</i>	55% at 5.1 mph	10 min	1 x daily
<i>Week 43/11</i>	58% at 5.5 mph	10 min	1 x daily
<i>Week 44/12</i>	60% at 6.3 mph	10 min	1 x daily
<i>Week 45/13</i>	65-68% at 6.3 mph	10 min	1 x daily
<i>Week 46/14</i>	Pt out of town	10 min	1 x daily
<i>Week 47/15</i>	68% at 6.2 mph	10 min	1 x daily
<i>Week 48/16</i>	68% at 6.2 mph	10 min	1 x daily
<i>Week 49/17</i>	72% at 6.2 mph	10 min	1 x daily
<i>Week 50/18</i>	75% at 6.2 mph	10 min	1 x daily
<i>Week 51/19</i>	80% at 6.2 mph	10 min	1 x daily
<i>Week 52/20</i>	80-85% at 6.5 mph	10 min	1 x daily
<i>Week 53/21</i>	80-90% at 6.5 mph	20 min	