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**Who:** 56-year-old active female s/p Right partial medial meniscectomy and peri-patellar chondroplasty

**What:** 8 weeks post-op walking program was initiated in the AlterG Anti-Gravity Treadmill

**Why:** Weightbearing exercises caused medial tibiofemoral joint line pain and swelling. Patient was unsuccessful with stationary bike and elliptical trainer. AlterG allowed for more controlled loading progression for returning to Full Weight Bearing.

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## Introduction

Patient is a 55 year old male with diagnosis of supraventricular tachycardia, atrial fibrillation and acute deep vein thrombosis with a past medical history of Guillain-Barre Syndrome. Patient was referred for physical therapy and occupational therapy evaluation at Linden Center for Nursing and Rehabilitation due to a decline in function/transfers and ambulation. An evaluation was conducted by the Rehabilitation Team on 1/11/16. Patient stated that his goals include “to be stronger and walk again without help.” Patient demonstrated excellent rehab potential as evidenced by his ability to follow multi-step commands and motivation to participate in therapeutic activities/exercises.

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## Goals

- Bed Mobility
- Ambulation
- Stairs
- Transfer

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## History

Patient received skilled Physical Therapy 3-5 days / week from 1/11/16 to 4/24/15. Treatment included therapeutic activities, therapeutic exercises, gait training, neuromuscular re-education, and strengthening exercises to achieve maximum functional capacity. Patient also incorporated the AlterG Anti-Gravity Treadmill into his gait training regimen and was monitored

by cardiac telemetry for his cardiac conditions. Patient was cooperative, attentive to tasks while participating in therapy, and achieved great progress in working towards his therapeutic goals. Patient was discharged on 4/24/16 from skilled therapy services.

## Progression Table

### Results

Upon discharge on 4/24/16, patient demonstrated significant improvements in functional status as evidenced by his progression from total dependence with bed mobility tasks, functional transfers, ambulation and stair negotiation to modified independence (MI) with bed mobility tasks and functional transfers. The patient exhibited ability to ambulate 400 feet with rolling walker with modified independence (MI) and ascend/descend >15 stairs with stand-by assist (SBA).

As a result of his cardiac rehabilitation program, patient demonstrated improved endurance as evidenced by decreased need for rest breaks during ambulation and a progression in exercise intensity from light exercise (1.2 METs at baseline) to moderate exercise intensity (4 METs at discharge). He demonstrated progress on the 2-Minute Step Test from 69 indicating below average aerobic endurance for his age group at evaluation to 88 indicating average aerobic endurance for his age group at discharge (Jones & Rikli, 2002).

The AlterG Anti-Gravity Treadmill was initiated to enable cardiovascular training and improve endurance in a more controlled setting starting 3/7/2016. At the time the AlterG was initiated the patient had progressed from total dependence to minimal assist with functional transfers and demonstrated the ability to ambulate 100 feet provided a two-wheel walker. The plan of care additionally focused on standing balance and the patient's ability to spontaneously right self in order to reduce risk for falls. The AlterG was initiated at this time to provide a fall safe environment to target the patient's ability to self-monitor and facilitate proper body mechanics. In addition, the patient demonstrated the ability to progress from utilizing the AlterG three times per week to five times per week as the plan of care progressed due to his improvements in aerobic endurance.

Days	Program (% Body Weight and Speed)	Time	Speed (mph)	Frequency
Week 1	50 % Body Weight	10min	0.3 mph	3x/wk
Week 2	50 % Body Weight	10min	0.5 mph	3x/wk
Week 3	60 % Body Weight	12min	0.7 mph	5x/wk
Week 4	70 % Body Weight	15min	1.0 mph	5x/wk
Week 5	80 % Body Weight	32min	1.5 mph	5x/wk
Week 6	90 % Body Weight	30min	1.9 mph	5x/wk

The AlterG was utilized for a six week period. The patient exhibited progression from 50% BW at .3 mph for 10 minutes to 90% BW at 1.9 mph for 30 minutes with a noted improvement in gait pattern, gait characteristics, exercise intensity and endurance. In addition, at evaluation, the patient was unable to ambulate without frequent rest periods due to his cardiopulmonary deficits. The AlterG Anti-Gravity Treadmill enabled him to incrementally improve endurance for ambulating longer distances.

Patient was discharged 4/24/16 and attained skilled therapy goals. Patient verbalized satisfaction with attaining his goal of being able to walk without physical assistance provided an assistive device for safety.

#### References:

Jones C.J., Rikli R.E., Measuring functional fitness of older adults, The Journal on Active Aging, March/April 2002, pp. 24–30.