

**Richard J. Vicory, PT**

**Who:** 85-year-old male with h/o cardiovascular disease with increasing difficulty standing, walking, stepping up/down curbs secondary to weakness Bilateral Lower Extremities.

**What:** Pt. reported significant decreases in pain to Bilateral knees, improved Berg Balance Score, and improved functional mobility after Physical Therapy including use of the Anti-Gravity Treadmill

**Why:** Body weight support helped to reduce patient's knee pain during ambulation, allowing him to walk in physical therapy and decrease joint/soft-tissue restrictions, resulting in improved knee ROM, strength, and balance.

---

## Introduction

Patient is an 85 year old male with history of heart attack and bilateral femoral popliteal bypass graft. Patient reports difficulty walking and standing greater than 10 min., and difficulty stepping up/down curb secondary to weakness. Patient ambulates with moderate antalgic gait. Pain is 7/10, bilateral lower extremity strength is grossly 3/5, and knee AROM is Right 0-101 degrees and Left 0-99 degrees. Patient scores 35/56 on the Berg Balance Scale, indicating a high risk for falls. Patient is not a candidate for total knee replacement due to bilateral femoral popliteal bypass graft.

---

## Goals

- Increase lower extremity strength and ROM to facilitate normal gait pattern
- Safely step up/down 8 inch curb without rail to facilitate crossing street
- Improve dynamic balance to facilitate walking on even and uneven terrain for increased patient safety

---

## History

**Weeks 1-2:** Stretching hamstring and achilles, recumbent bike 15 minutes and AlterG Anti-Gravity Treadmill.

**Week 3:** Stretching hamstring and achilles, recumbent bike 20 minutes and AlterG Anti-Gravity Treadmill.

**Week 4:** Stretching hamstring and achilles, recumbent bike 20 minutes and AlterG Anti-Gravity Treadmill.

**Week 5:** Stretching hamstring and achilles, recumbent bike 20 minutes and AlterG Anti-Gravity Treadmill.

**Week 6:** Stretching hamstring and achilles, recumbent bike 20 minutes and AlterG Anti-Gravity Treadmill.

## Progression Table

Weeks	Program	Speed (mph)	Incline (%)	Time	Fqcy
<i>Week 1-2</i>	Walking at 50% of BW	2.0 mph	0	15 min	3x/week
<i>Week 3</i>	Walking at 55% of BW	2.0 mph	0	20 min	3x/week
<i>Week 4</i>	Walking at 55% of BW	2.5 mph	0	20 min	3x/week
<i>Week 5</i>	Walking at 60% of BW	2.5 mph	0	30 min	3x/week
<i>Week 6</i>	Walking at 75% of BW	2.5 mph	0	30 min	3x/week

## Results

Patient was very motivated and enjoyed his physical therapy sessions. Patient reported significant improvement of knee pain with prolonged activities. All goals were met and at discharge patient reported that knee pain decreased to 2/10, knee AROM improved on Right 0-112 degrees and Left 0-106 degrees. bilateral lower extremity strength improved to 4/5, and Berg Balance Scale improved to 43/56, lowering risk for falls. Patient also reported at discharge that he notices functional improvement in getting in/out of car, walking in yard, and stepping up/down curb.

The AlterG Anti-Gravity Treadmill was incorporated into this patient's treatment plan to reduce patient's pain during ambulation. Reducing the patient's body weight allowed the patient to

perform functional activities and gait training with decreased joint compression, helping to reduce pain during gait. By slowly reincorporating the patient's body weight, we were able to see significant pain reduction and marked improvements in ROM, strength, and balance.