Gait velocity and pelvic tilt tested
In a 6-Wheel revision
Increased healthcare resource allocation: more
Estimated $3.75M
four trials
PD patient falls:
strength of magnetic field
Psychosocial
acetal plastic changed to
25% (~250,000 patients) in a 6
Patient Population:
This solution tackles retropulsion specifically
Wheels maintain a speed of 0.70
patient cannot maintain proper posture,
Time to set up device is less than 5 minutes
- Parkinson's Disease
- PD often leads to instability in the posterior direction
- Average fall
- Ease of use
- —Helpful for Parkinson's patients with
- Provides a stabilizing effect to
- Provides a stabilizing effect to
- Requires patient to
- Not easily accessible
- Not affordable
- Not easily accessible
- Not affordable
- Not easily accessible
- Not affordable
- Not easily accessible
- Not affordable
- Not easily accessible
- Not affordable
- Provides a stabilizing effect to
- maintains stability and normal pelvic tilt
- Lockable swivel pneumatic wheels:
- provides rotational resistance to maintain optimal gait velocity

PVC/PLA
handlebar:
- maintains stability and normal pelvic tilt
- Lockable swivel pneumatic wheels:
- provide rotational resistance to maintain optimal gait velocity

Thrust bearings:
- promote smooth gait and limit disturbances

References

Verification Testing and Conclusions
Gait velocity and pelvic tilt tested - four trials with variable wheel and handlebar components
Handlebar revision - acetal plastic changed to
PVC pipe to increase strength; added PVC pipe reinforcement
Wheel revision - magnetic discus changed to
pneumatic system - strength of magnetic field could have adverse effects (patients with pacemakers, implants, etc.)
Retropulsion poses a serious fall risk to PD patients [2]
These modifications limit gait disturbances and provide a smooth ride for PD patients, while also being cheaper and more accessible than other devices
This solution tackles retropulsion specifically while addressing specific concerns such as posture, smooth gait patterns, and stability