introduction

People Prop is a custom-designed back brace that addresses the symptom of postural instability in Parkinsonian patients known as camptocormia.

Data was gathered from local support units such as the Parkinson’s Support Group in order to inform the design.

background

General

More than 1.5 million Americans live with Parkinson’s; 7-10 million worldwide.

No current cure for Parkinson’s itself.

Main courses of action – alleviate negative symptoms.

Camptocormia

Postural instability characterized by forward and/or lateral flexion depending on the individual person.

Found in patients with Parkinson’s and similar neuromuscular diseases.

Askinetic patients lack physical ability to self-correct posture.

Leads to other symptoms such as difficulty in breathing and fatigue.

Neuromuscular Disease

Any disease/ailment which impairs motor function.

Symptoms include “decrease in spontaneous movements, gait difficulty, postural instability”.

Proposed solution

Back brace

Maintains proper posture.

Can be worn in public.

Compatible with daily activities.

Provides a level of comfort which alleviates related symptoms of Parkinson’s.

market

Sources of inspiration come from braces on the market including the Thoraco Lumbar Sacral Orthosis for post-spinal-injury, sports braces such as the Mueller Adjustable Lumbar Brace, and the Activaided Orthotics brace. None of these, however, are designed specifically with the Parkinson’s community in mind.

future

Propose integration of brace with a harness that fits over the back of a chair to provide better stability to patients when sitting.

Add component to the brace to improve pelvic alignment/stability.

Modify design to fit different body shapes/sizes.

Address anatomical differences between male and female body types.

Perform controlled, IRB-approved user-testing.

Seek funding from technological incubators such as AlphaLab Gear.

prototype 1

prototype 2

prototype 3

prototype 4

production

costs

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<th>Material</th>
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w/ 20% mark up  $36.00

special thanks

We would like to thank Dr. Scott Bleakly, Parkinson’s patient and former president of a Parkinson’s support group for his support and help.

Additionally, we would like to thank Dr. Conrad Zapanta and Kenny Varner for their guidance and assistance with this portion of the project.

Those who were involved in our team: William Sherrard, Michele Lee, and Michael Lee.

We would like to thank our sponsor Courtney Williamson for all her support and help.

references


No other supportive device on the market addresses the symptoms of camptocormia or other similar neuromuscular diseases in the same way. Special attention was paid to correcting the involuntary forward flexion of the torso.

Applying tension to the pectoral girdle via elastic straps keeps the shoulders pulled back to maintain an upright posture. A panel of corrosion-resistant formable 3003 aluminum is used to stabilize the spine and reduce slumping. And this is all achieved with a design tailored to fit unobtrusively under clothing to reduce the stigma of using a corrective wearable in public.