

Mickey's  
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**Industry:**

Medical Device

**Team:**

Founder  
Russell Joye - Oscar Health, Zimmer  
Biomet, Georgetown University

**Engineering Lead**

Owen Trueblood - 10XBeta,  
Massachusetts Institute of  
Technology

**Design Lead**

Gabriel Brasil - QReal, New York  
University

**Data Science Lead**

Haider Hussain - Icahn School of  
Medicine at Mt. Sinai

**Key Relationships:**

Abilities Research Center,  
Mt. Sinai

Neurorehabilitation Lab,  
Columbia University

Montefiore-Einstein Center for the  
Aging Brain

The Michael J. Fox Foundation for  
Parkinson's Research

Atelier Amelia (textile prototyping)

Amala Consulting (grant consultant)

**Legal:**

McCarter & English

**Funding Sought:** \$500,000, majority  
of funds used for data science,  
engineering, software development  
and design hires.

**Overview**

At Mickey's, we build e-textiles that help people with movement disorders walk more efficiently. Our first product, created for those diagnosed with Parkinson's disease, is a pair of stylish, comfortable compression shorts that deliver tactile cues on the surface of the skin along the outer thigh. Peer-reviewed research shows that regular usage of cueing systems can strengthen neural pathways that bypass brain structures that become "blocked" in Parkinson's disease. These cues help the wearer walk in a more stable and efficient manner.

**Unmet Need**

There are roughly ten million people living with Parkinson's disease across the globe today.<sup>1</sup> Patients do not have access to unobtrusive, non-pharmacological treatment modalities that fit into their everyday lives. Until now.

**Product**

Our compression shorts have lightweight inertial motion sensors and actuators built into each leg of the undergarment. The sensors detect the users' leg velocity, and then trigger tactile cues based on leg velocity delivered by the actuators (miniature motors). Thus, one can be cued to increase stride length and leg swing velocity, both of which are hallmarks of stable ambulation. Crucially, the cues are delivered in an entirely discreet fashion known only to the wearer, thus avoiding social stigma that is inherent in existing products. We aim to enhance the lives of early to mid-stage Parkinson's disease patients by facilitating safe and efficient movement.

**Competition**

Three direct competitors exist, none of which have gained significant market share. Walk to Beat, U Step Neuro and Walk With Path build canes, walkers and shoe attachments that provide visual, audio and tactile cues. All are cumbersome devices that immediately mark the user as unwell, which is a strong deterrent to product use according to patient interviews.

**Commercial / Technical Milestones**

May 2019 - selected to participate in National Science Foundation I-Corps customer discovery program at Cornell Tech  
June 2019 - completed first prototype, awarded grant from NSF I-Corps program to attend World Parkinson Congress in Kyoto, Japan  
November 2019 - invited to apply to Therapeutic Pipeline Program, flagship grant program at Michael J. Fox Foundation  
H2 2020 - launching feasibility study in partnership with Mt. Sinai

**Financial Projections**

We will sell into two customer segments - Parkinson's disease patients/caregivers, and physical therapy clinics/physical therapy management companies. Buy-in from physical therapists and movement disorders researchers is crucial in communicating the value of our product to end users.

	2022	2023	2024	2025	2026	2027
Revenues	1.7M	4.7M	9.5M	17.7M	22.8M	33.2M

**Footnotes:**

<sup>1</sup>Parkinson's Foundation