

Team 18 - Active Compressive Abdominal Binder

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NEED:
10 million people Worldwide suffer from Parkinson's Disease (PD)
 • **4-6 million people** suffer from Neurogenic Orthostatic Hypotension (nOH)
 • Increases the risk of falls by **2x** due to sudden drops in blood pressure from position changes (supine to upright)

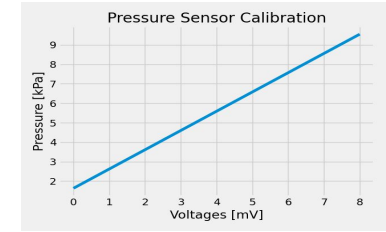
FUTURE
Possible Revisions
 - iOS app
 - Decrease binder size

Impact
 - Increased patient compliance and effectiveness
 - Potentially decrease medication usage

Objective:
 Design an active abdominal binder with user controls to increase compliance, comfortability and effectiveness.

TESTING RESULTS

The linear relationship between the pressure and measured voltages will be used to control the close loop



DESIGN INPUTS:

Requirements

- R.1. Must compress the abdominal wall within **1.3-5.3 kPa**
- R.2. Weight must be **≤ 1lb**
- R.3. Response time must be **≤ 10s**

Constraints

- C.1. The battery life cannot be under **24 hrs**
- C.2. Limited to size range of **68 - 114 cm**



SOLUTION - BUILD

