



WICHITA STATE UNIVERSITY

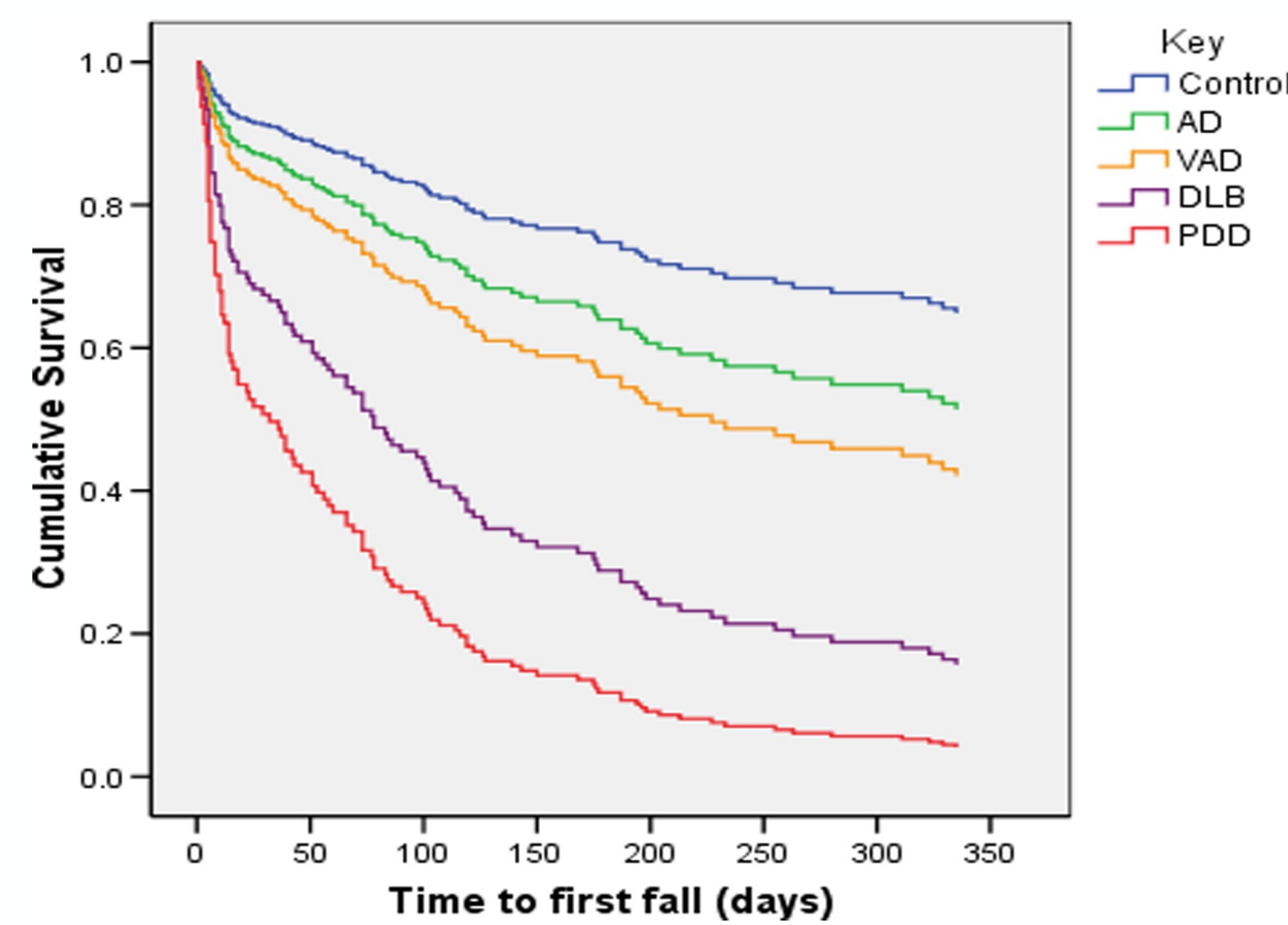
# A Walk(er) to Remember

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## INTRODUCTION

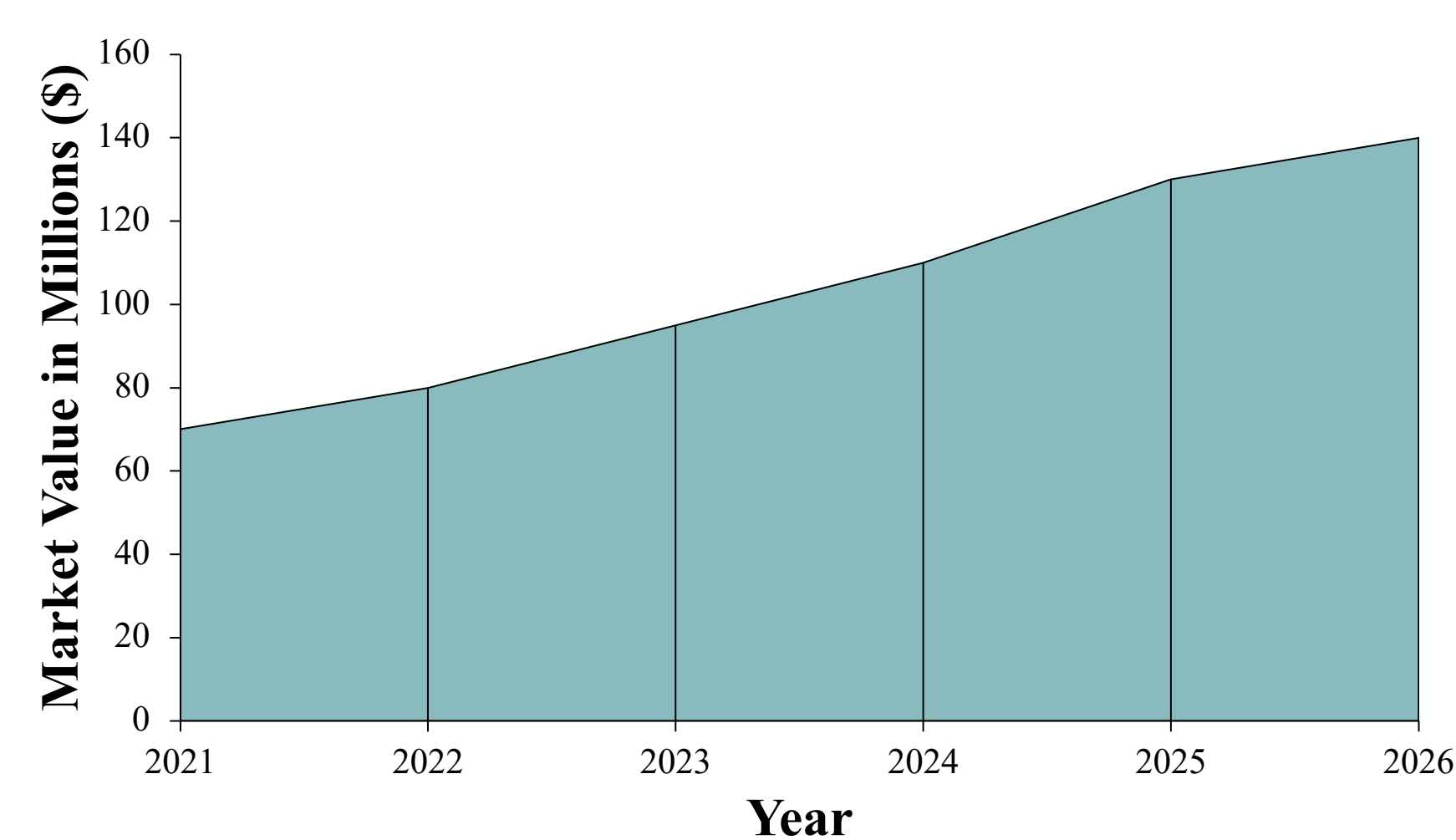
- Individuals ages 65 and older with dementia:
- Have a 60 to 80 percent chance of falling per year
  - Are three-times more likely to fall when using current mobility aids on the market than without using one
  - Have a low cumulative survival rate during the first year after a fall



## NEEDS STATEMENT

Individuals with middle-stages of Alzheimer's disease and related dementias cannot currently use the mobility aids that are on the market, because they require a new and unnatural movement to be learned. The goal is to create a walker that facilitates innate movements prolonging the patient's quality of life while lessening their chances of falls.

## MARKET ANALYSIS

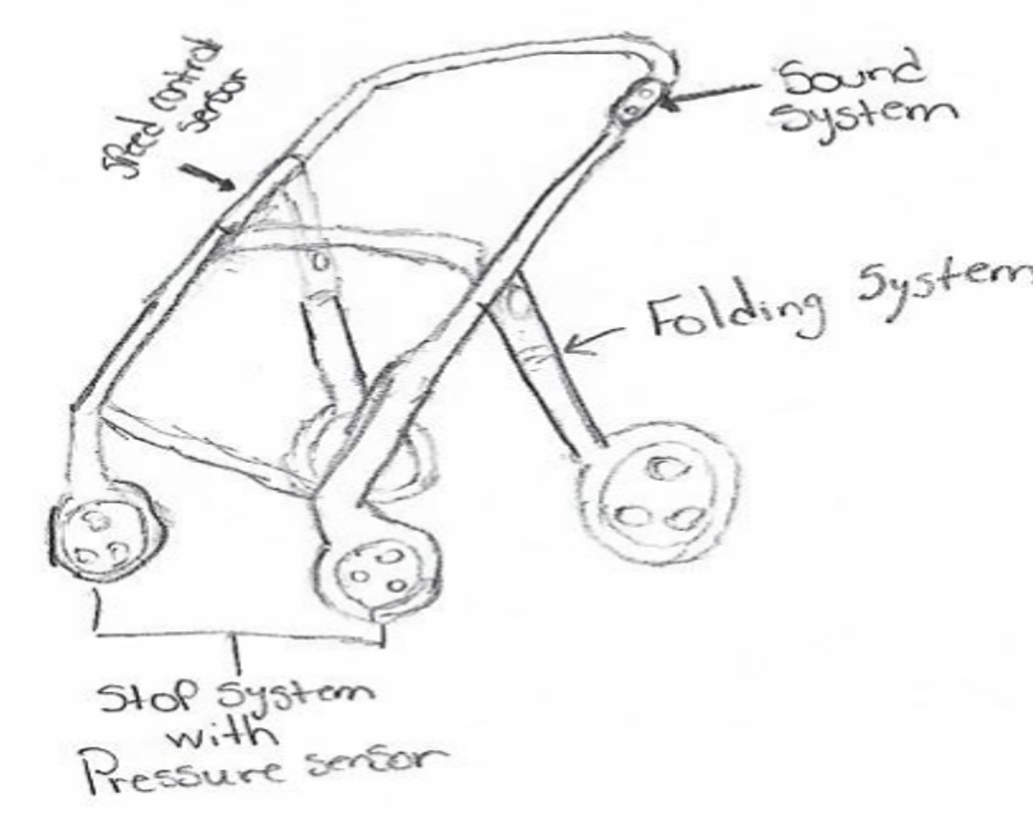


The market for rollator walkers in 2021 is valued at \$72 million and it is expected to expand to \$139.5 million by 2026 with a compound annual growth rate (CAGR) of 5.8 percent.

## DESIGN CONCEPTS

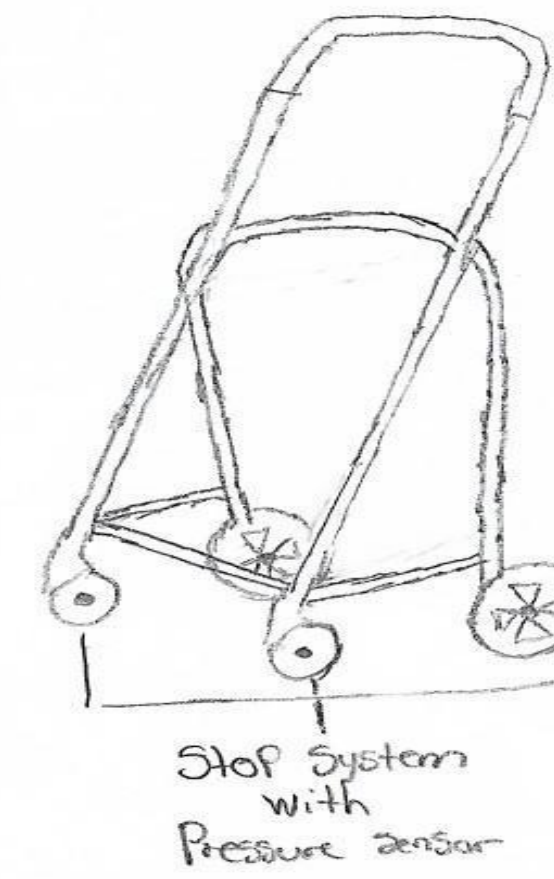
### Design Concept 1

- Four-wheeled structure
- Sensor braking system
- Modeled after baby stroller



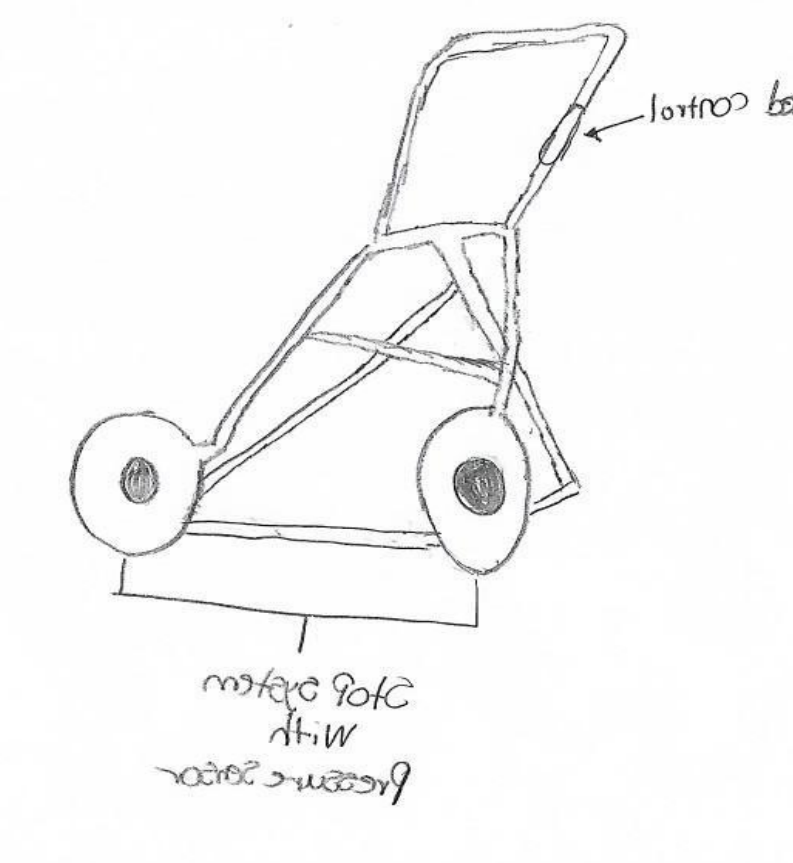
### Design Concept 2

- Four-wheeled structure
- Cable braking system
- Modeled after shopping cart

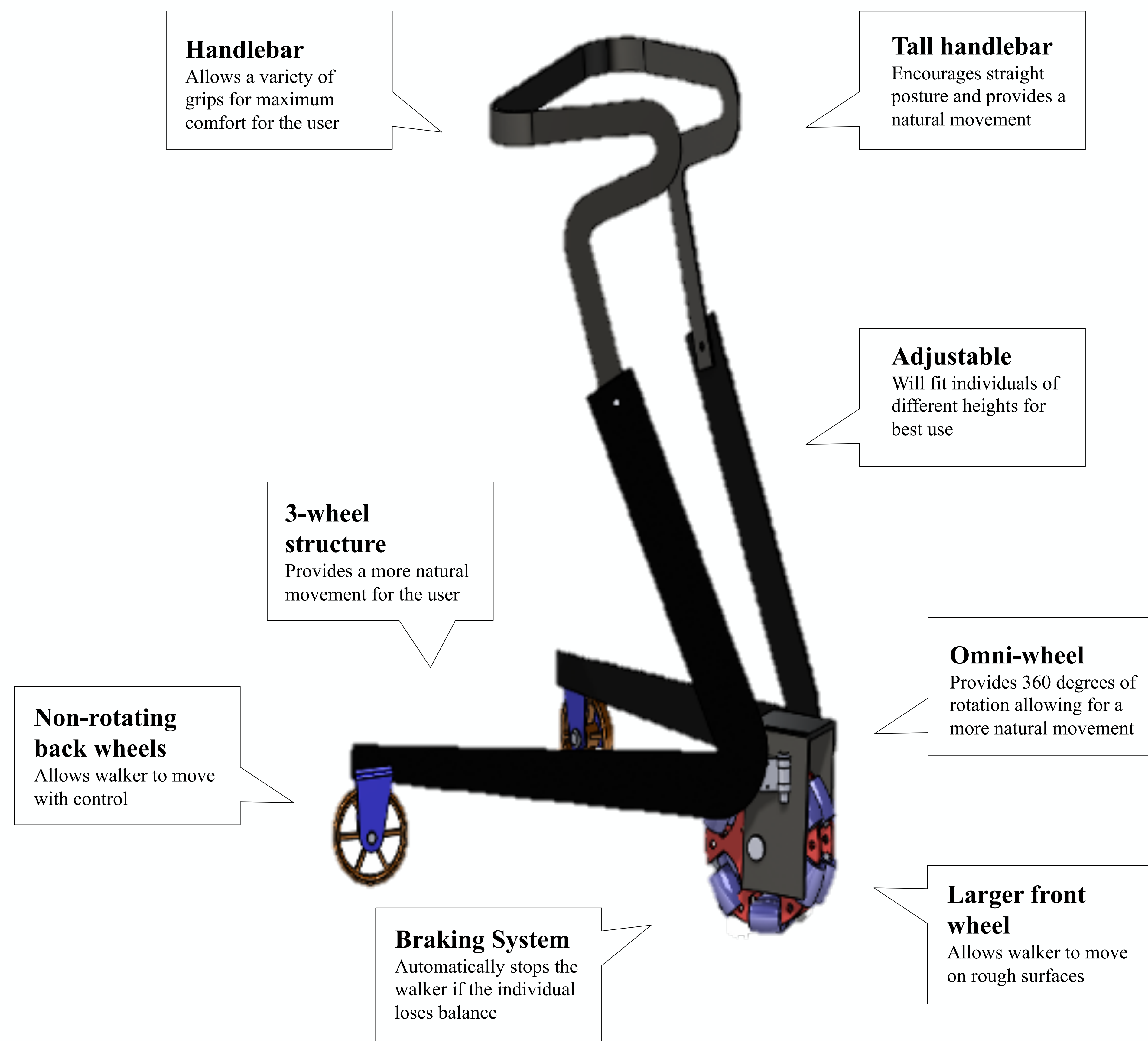


### Design Concept 3

- Two-wheeled structure
- Sensor braking system
- Modeled after lawnmower



## FINAL DESIGN



## PROTOTYPE

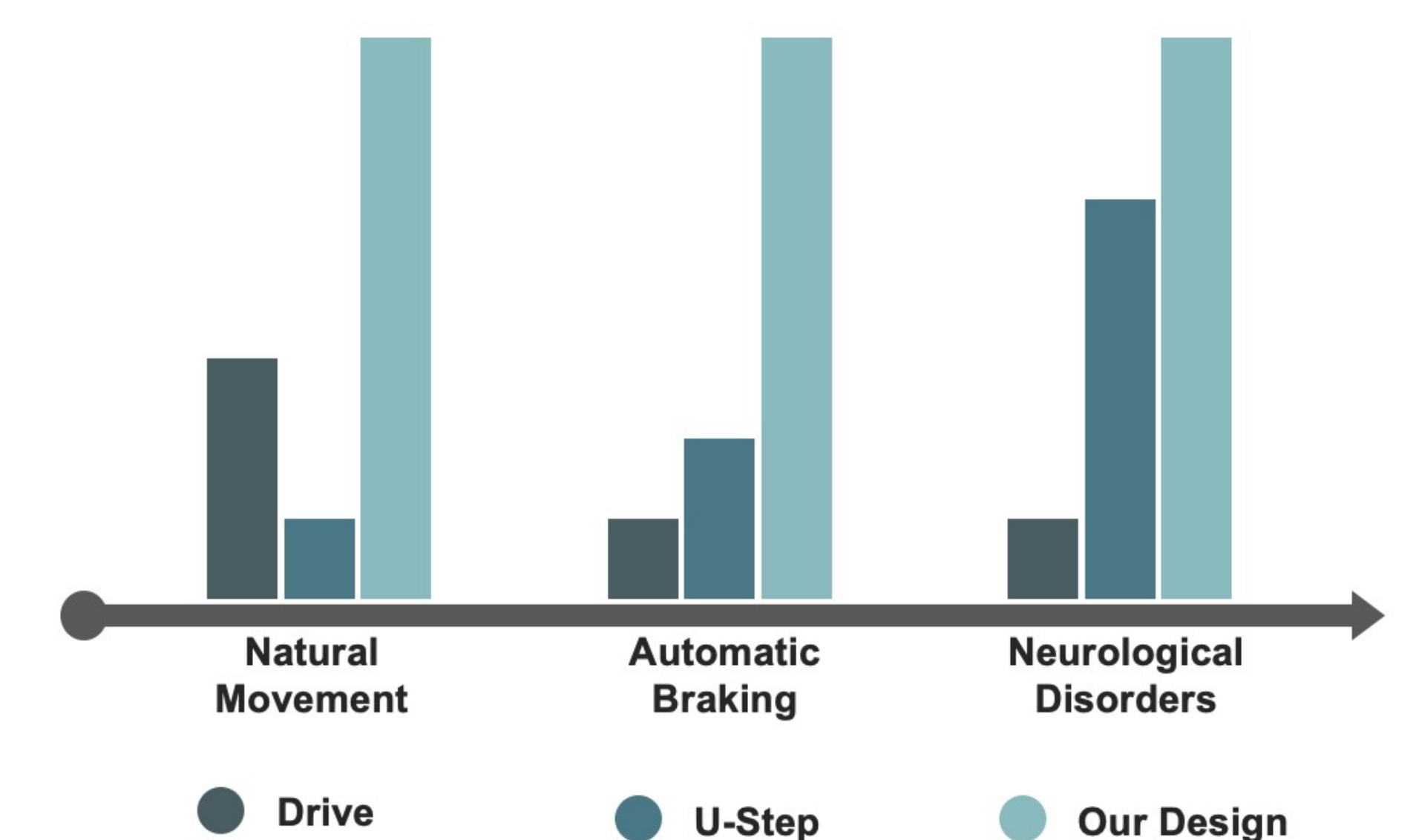


## PROTOTYPE TESTING

The prototype went through a series of structural validation, braking validation, wheel usability assessments, and user experience comparisons.

Quantitative representation of user experiences displayed in chart below.

### Market Comparison



## CONCLUSION

A Walk(er) to Remember was designed to incorporate innate movements and includes an automatic braking mechanism to reduce the risk of falls in older adults with neurological disorders.