

## Abstract

### Title: A Walk(er) to Remember

Alzheimer's disease (AD) is a neurological disorder that affects an individual's cognitive and physical abilities, making falls extremely common. Older adults with AD have a 60 to 80 percent chance of falling each year. Present-day solutions for fall prevention rely on the usage of mobility aids, such as canes and walkers. The market for rollator walkers was valued at 72 million in 2021 and is projected to reach 139.5 million by 2026. However, if an individual with AD were to use one of these devices, their likelihood of falling increases three-fold.

As mobility aids make falls more prevalent in those with AD, the goal is to redesign a rollator suitable for individuals with cognitive difficulties. A Walk(er) to Remember focuses on providing natural movement for the user in addition to an automatic braking mechanism. The three-wheeled structure, front Omni-wheel, and high handlebars allow the walker to move smoothly with the user. Safety is ensured by incorporating a mechanical pressure sensor that will automatically stop the walker if the individual loses balance. This design carefully considers the impact that AD has on the ability to walk and therefore, should reduce falls and fall-related injuries unlike other alternatives on the market.

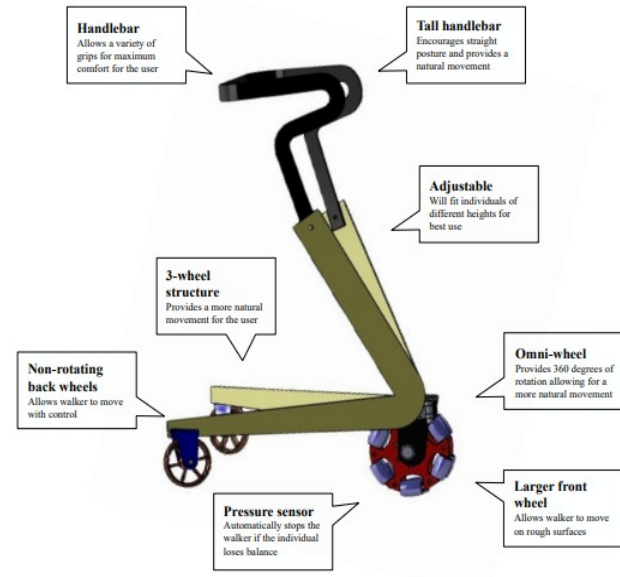


Figure 1. Design features of A Walk(er) to Remember.



Figure 2. MAJLM Team 6. From left to right team members include Laik Bradley, Adonay Tedla, Jennifer Ramos, Marlene Kouakam, and Madison Carlgren.