

SafeStep

A stair navigation assist device



University of Pittsburgh researchers have developed a novel low-cost, common sense approach to assist older adults and those with reduced mobility to independently navigate stairs.

SafeStep, is a simple, low-cost modular device based on a cable-driven “moving” escalator handrail, similar to a ski slope tow rope. SafeStep can easily be installed into any home allowing the user to climb the stairs in an upright position while having continuous engagement with a handrail.

Applications

- Active aging
- Supporting older adults and those with reduced mobility to live in their own homes
- Healthcare setting to support adults living in residential care

Advantages

Traditionally, stairlifts are the go-to option for at-home stair navigation systems. These can be obtrusive especially in homes with a single staircase and can compromise escape routes. Additionally, given they are designed to passively transfer users, this is often more support than adults wishing to remain active require.

SafeStep is designed as a modular system allowing it to be adapted and installed in a range of stair designs inside and outside the home. Unlike traditional stair lifts, it is suitable for homes with only one staircase as it will not impede escape routes and can be building regulation compliant. Activation is controlled by the user, actively leading them up and down the stairs in an upright position and in the absence of the trip hazards presented by many existing products allowing those with reduced mobility to live safely in their own home.



Development Status

A prototype based on a cable/rope driven system has been developed.

Invention Readiness

Functional Prototype

IP Status

Patent Pending

Inventors

A. Everette James III, JD MBA [Research Profile](#)
Jonathan L. Pearlman, PhD [Research Profile](#)
David M. Brienza, PhD [Research Profile](#)
Rayhan Afsar, PhD [Research Profile](#)
Todd Hargroder, [Research Profile](#)
Paulina Villacreces, MS [Research Profile](#)
Alexandra Marie Delazio, MS [Research Profile](#)

Healthy Home Lab Contact Information

For more information visit our website at HealthyHomeLaboratory.pitt.edu

If you are interested in partnering, contributing or joining the Healthy Home Laboratory, contact us at HealthyHomeLab@pitt.edu

For licensing interest contact the University of Pittsburgh Office of Innovation and Entrepreneurship at partner@pitt.edu