ACTIV8R Dynamic Seating Platform

The Problem

We must all move to function in life. When seated, we are continually readjusting our position to maintain comfort and actively engage with our environment. When we need to relax we can stretch back or we can lean forward if we wish to work on our computer or reach out to our friends and family. People with disabilities or the elderly are often limited in their ability to change positions to keep comfortable and maintain their ability to sit proudly. They often need a caregiver to make these adjustments. This can make them feel minimized.

People with disabilities are often given traditional wheelchairs, which do not offer anything more than a sling back and a sling seat. Adaptive wheelchair seating is available to help maintain postural alignment. This solution provides support but does not encourage movement.

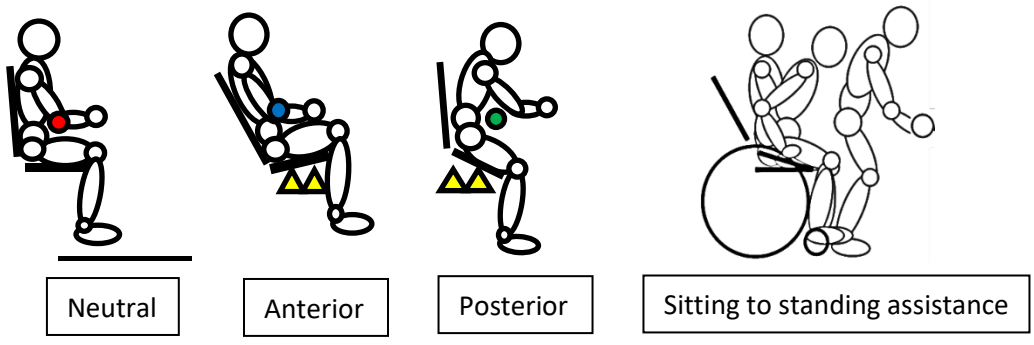
Our Solution

The ACTIV8R is a self-activated dynamic seating platform which is designed to empower people to stretch, change position and easily transfer out of their wheelchair. By simply shifting their center of gravity forward or aft the person can move from a neutral to anterior or a neutral to posterior position. The wheelchair user can go from an upright to a reclined position by simply activating a lever with a downward pressure from their elbow. The anterior tilt function also assists the wheelchair user when transferring from sitting to standing.

Our goal is to empower people to have more freedom to move and sit proudly. When we work together with our friends in a wheelchair we love to hear “I did it all by myself.”

What We Want to accomplish

This a continuation of the previous capstone project. The goal of this iteration of the ACTIV8R is to incorporate a 45-degree tilt mechanism to the existing prototype. The project needs to be more user-friendly. We want a more modular construction. It needs to be assembled as quickly and easily as possible with low skilled labor. We want it to be easier and less expensive to produce. It needs to have as few parts as possible and make use of standardized components. We want it to be sturdy and durable. A typical life-time for one of these chairs in use can be over 5 years and it needs to stand up to abuse. This is your chance to help make a huge impact for people with disabilities worldwide.



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GOAL

To incorporate the 45-degree tilt to the current prototype with a highly functional user-friendly, durable and manufacturable product.

ERGONOMICS:
Adjustability and growth range; We will need to determine the range of adjustability for the ACTIV8R to accommodate people of different shapes and sizes.

FUNCTIONALITY:
Tilt mechanism; the ACTIV8R tilts to a 45-degree angle while maintaining all previous functionality. *This is the primary goal of this project.*

Transferability; the ACTIV8R snaps onto a mobility base. The high-performance foldable and adjustable mobility base has already been developed. The snap and lock mechanism needs to be refined to be more user friendly.

Foldability; the ACTIV8R is designed to fold easily when removed from the mobility base, which also folds.

DURABILITY:
Testing and regulatory guidelines; The ACTIV8R is a Class 1 Exempt medical device that must be tested extensively before going to market.

Lightweight: The ACTIV8R and mobility base need to be light enough to lift and load for transport.

APPEARANCE:
People often sit use the wheelchair for many hours each day and they want to be seated in a product that is good looking and fashionable.

MANUFACTURABILITY:
Cost and ease of manufacturing is critical.

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