

Wheelchairs - Past, Present, and Future

To push oneself to the limits of his or her physical ability and compete against others has been a driving force for humans across the world and across centuries. It is a need that exists to this day, long after technology removed the necessity of being the fastest, strongest, or most cunning as a survival trait. Even when humans suffer debilitating disease or injury that prevents them from participating, they long to push themselves to their limits. Persons with disabilities used to be limited in their options. Advances in technology, resources, and social inclusion changed the disability stigma and allowed humans to compete against themselves and against others to fulfill the need to excel in a chosen arena.

The concept of enabling disabled persons to move about more easily is not entirely new. Wheeled chairs and wheeled tables may have been utilized as early as 600 BCE, based on drawings found from the time period. The contraptions were probably exactly what the name implies: a piece of furniture with wheels attached to some or all of the supporting legs that permitted some level of mobility. As time and cultures advanced, the design advanced. By 1595 the design improved to include the wheeled chair with foot rests and a reclining back, utilized by King Phillip II. Technology continued to advance over the next 300 years, fueled by war and necessity.

By the end of World War II, a new era of technological innovation swept across Europe and the United States to accommodate the needs of vast numbers of veterans who returned home as amputees, paraplegics, and quadriplegics. Technology once used to make motors light and powerful was adapted to allow a wheelchair rider to move about independently. New materials gave rise to lighter frames. No longer was a box with arms and wheels sufficient for disabled persons. Some chairs could be folded for travel or storage and changes in wheel configurations allowed for more maneuverability. The very definition of what disability did or didn't mean changed dramatically as people pushed for their rights and the rights of others.

Today, special divisions for wheelchair competitions in sports allow non-traditional athletes to pursue their goals. Just as athletes who were unable to perform in the traditional method find doors open to them with the advancements in wheelchair technology, dancers who lost the ability to dance due to disease and injuries follow their dreams and dance. There are programs for children with disabilities, veterans in wheelchairs, and adults with a variety of needs for whom dancing provides a way of expressing themselves. Adaptations did not stop with the inclusion of sports and dancing as a recognized arena in the world of sports, however.

Innovations that allow chairs to navigate steps, sand, gravel, and even standing water are being made every year. Some are in use in simpler stages while others are still in the experimental stages and are not available for the general public. Wheelchair designs that utilize a combination of wheels and tracks for travel over a wider variety of terrain do exist. Other chairs are being built with special sensors to sense an individual's body movement. This not only allows a chair to adapt to the physical needs of the rider, it also creates a smoother and more spontaneous movement than has been seen before now. Chairs are equipped with lifts to take a rider from a seated to a standing position, making it easier for a wheelchair rider to work in a variety of fields or to adopt more positions for everyday chores. In time, it is possible that physical impairments will be practically invisible for men, women, and children in all aspects of life.

Pushing the limits and doing what one dreams of doing is no longer an impossibility for most people with disabilities, thanks to innovations from the past, the present, and quite possibly the future.