

Thoroughly **Modern** Mobility

What's New and Unique in Walkers, Crutches and Canes?

by Bill Dupes

People with disabilities encounter a multitude of problems in all aspects of daily life that limit their ability to work, live independently, travel and interact with others. Approximately 13 million people use assistive devices to help them with these and other activities. In fact, the assistive technology market is expected to grow dramatically over the next two decades to keep pace with the rapidly growing population of seniors with disabilities. The

following devices are just a few examples of recent innovations in walkers, crutches and canes designed to enhance safety, comfort and mobility.

Walkers

The ED Walker[®]

Many inventions and advances in technology

come about simply because someone becomes frustrated with a device and says, "There has to be another way." This was Joseph Schrader's experience when he injured his knee in a skiing accident in 1993. Following his knee surgery, he was dissatisfied with the limitations that traditional crutches posed while trying to work with his hands. Schrader, an inventor with a background in mechanical engineering and fluid dynamics, decided to address the problem by coming up with something that would allow more freedom of movement.

The result of a decade of research and modifications is the Ergonomically Designed (ED) Walker, a versatile rehabilitation and mobility tool that

can be described as "a bicycle seat with handles" (patents pending and approved and FDA listed). The average time required to learn how to use it is about 15 minutes, a considerably shorter time than the time required to learn to ride an actual bike. It is designed to benefit people with all levels of lower-extremity amputation or injury by providing increased stability and mobility, improving body alignment, and freeing the user's hands.

The ED Walker is a modular device that can be easily customized to a patient's height or configured for either left or right limbs, ergonomically centering the body. The modular design is particularly convenient for adapting to the ever-changing needs (and size) of children. The adults' lightweight, stainless steel frame will support over 300 pounds. The walker's seat allows an upright seating stance for resting or performing daily activities.

Schrader's experience as a Level III ski instructor provided him unique insight into balance and stability issues, which contributed to the walker's design. The walker's flexible base features a foam stabilization plate that provides a "self-correcting" function to preserve stability if it is brought down at an angle. Additional accessories, or extenders, are available to increase stability if needed. The treaded base provides traction even on wet, snow-covered or irregular surfaces.

To move forward, you lift the device slightly by the handgrips, causing the walker's leg and foot assembly to pivot forward automatically, beginning the next stride. Using a lifting, rather than leaning, motion eliminates the shoulder stress, underarm irritation and muscle fatigue experienced by crutch users, Schrader says. The walker's ease of use is also a benefit for "hoppers," amputees who add wear and tear to their sound limb by choosing to literally hop rather than take the time to don their prosthesis just to cross the room or to make a midnight trip to the bathroom.

A published study performed at Syracuse University indicated that the walker allows weight transfer through the pelvic girdle, enabling the user to selectively bear weight, which is instrumental in reducing skin irritation. The study also showed higher muscle activity in certain femoral muscle groups when using the walker compared to crutches, suggesting less muscle atrophy and recovery time.* Walter Reed Army Medical Center is currently evaluating the ED Walker in an occupational therapy program for recovering veterans called Fort Independence. The preliminary results have been extremely positive, Schrader says.

The Pilot™ Walker and Rollator

Physical therapists (and patients) collaborated with the engineers of Full Life Products in the design of the new Pilot™ walker. An innovative second set of handles positioned lower on the walker assists users in rising from a seated position with less arm strength. Another unique feature in the walker's design is a receptacle that can be used to hold an IV pole or other equipment. The walker also has a built-in seat that allows patients to rest, and the seat folds up so users can step into the walker for enhanced access and mobility (to work at a counter, for example).

The walker is sized to fit over toilets to avoid the need for external handholds and to allow the use of standard height public toilets. Easy-to-use safety releases can be activated from a standing or sitting position. For convenient transport, the walker folds and locks flat, with wheels aligned for easy rolling.

A rollator

