

## **Assistive Technology Devices for Individuals with Disabilities**

Millions of people live with disabilities that complicate or prohibit the performance of daily tasks. Fortunately, technology to assist with fulfilling these functions has consistently improved, both functionally and in terms of variety. Today, nearly 7 million people in America alone use assistive technology of some type to complete tasks and attain more independence.

We are all aware of wheelchairs, prosthetic limbs, hearing aids, and closed captioning, which have all had vastly beneficial effects on quality of life and are always getting better when it comes to versatility and ease of use.

What many are less aware of are newer developments springing from innovative thinking and ever-improving technology. So let's look at some of them.

### **Personal Emergency Response Systems**

Most of the time when someone falls out of a chair, it is merely embarrassing. When this happens to a wheelchair-bound individual, especially one living alone, it can be life-threatening. A PERS is a small object (usually a bracelet, pendant, or pin) that can be clipped to clothing and activated by pressing a button in the event of a serious injury or other emergency. When activated, the PERS alerts a designated caregiver.

### **Robots, Smart Assistants, and Assistive Gadgets**

Science fiction (and fantasy) is becoming reality as there are now robots that can perform household tasks such as mopping and vacuuming. Smart assistants (think Amazon Echo) can handle relatively minor jobs such as updating calendars, playing music, or reporting on the weather to more complicated ones like placing online orders. Assistive gadgets both mechanized and not also make life just a little easier. For example, users can mount laptops to wheelchairs, utilize voice-to-text programs, and more. Smart Watches synchronized with phones help keep track of schedules and monitor email and text messages (and, again, more).

### **Adaptive Tools**

People with disabilities impacting their motor skills benefit from tools adapted to specific tasks. Examples include utensils, specialized handles, modified keyboards, and automatic page-turners.

### **Eye-tracking Devices**

Among the newest and most innovative systems are ones using eye-tracking technology. Through them, the speech-impaired employ sophisticated software enabling them to look at

icons or data on a screen. This then generates speech or allows communication through selection of generated phrases.

## **Stair-ascending and Positioning Devices**

Ramps are not everywhere they're needed, and wheelchair users also sometimes have to navigate stairs. Technology to transport people up and down staircases is not new, but now there are wheelchairs that can actually climb stairs themselves while keeping the user stable and level. Devices helping with positioning allow an individual to maintain a particular posture when sitting or standing.

## **Transfer Devices**

Some of the most promising and revolutionary developments right now are occurring in the field of transfer devices. Patient transfers occur when a patient has to be moved from a bed to a wheelchair (or vice versa), to a shower or toilet, or to and from pools and therapy facilities. This has traditionally involved lifting by one or more caregivers, often resulting in injuries to caregivers and patients alike. Mechanical transfer devices offer game-changing ways to tackle these problems.

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### **SOURCES USED:**

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