



IR AND BLUETOOTH: OPTIONS THAT CAN LEAD TO GREATER INDEPENDENCE

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For many people who utilize high-end complex rehabilitation mobility products, access to their everyday environment can be very frustrating and limited by their disability. If someone does not have, or is in the process of, losing function of their upper or lower extremities, activities the rest of the population consider common, can be out of reach. This can lead to a feeling of helplessness and frustration. That, along with feelings of loss of independence and control, may cause the person to either lash out at those around them or lose the motivation to fully participate in daily life.

Something as simple as controlling the mouse on a computer, answering a cell phone, changing the channel on a television, or controlling the temperature in a room can be unattainable without utilizing available assistive technology options. Anyone who works in the complex mobility field is focused on the consumer's abilities, needs and goals to achieve independence. That is why, as a group of professionals, we need to remember and explore what other assistive technologies can benefit the people we are working with on a daily basis.

Each of the main power wheelchair manufacturers have systems available that can be added to a power base in order to control Bluetooth and infrared (IR) technology. Some manufacturers may make use of radio frequency, so be sure you are aware of what type of technology a manufacturer utilizes to support access to the environment. Also, be aware of whether these features are standard or optional (additional cost).

Unfortunately, this type of enabling technology, despite promoting independence and inclusion, is underutilized. People may not know it is available or even that it may exist in the wheelchair electronics they already own. One reason for this may be a misconception that it takes too long or is too complicated to program.

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As professionals, we need to educate the consumer on what is available and what features could benefit them. It is important to explain to the consumer that the set-up may take some time to program to their exact needs. In addition, consumers and their care providers need to become comfortable with the use of this technology and take responsibility for possible future programming.

BLUETOOTH:

Pairing the power wheelchair and an external Bluetooth capable device can provide access for communication, computer use and control of other "smart" devices in a variety of environments. The driving method can now control the paired device. The evaluation should include a thorough exploration of the consumer's needs to determine if Bluetooth technology is required. Specific Bluetooth features vary between electronics systems. This needs to be reviewed to help the consumer make an informed decision about which power wheelchair manufacturer provides the best technology match to meet their needs.

When it comes to Bluetooth capabilities, there are several factors to consider. Personally, I have found that speech generating devices (SGD) are often times the most temperamental devices to pair with Bluetooth technology. Some SGD manufacturers have a Bluetooth chip in their devices which is only usable with the equipment they sell. If Bluetooth can be paired, the power wheelchair driving method now acts as mouse input on the SGD. This allows the client to use the power wheelchair input device to control the mouse movements of the cursor on the SGD screen. The SGD includes strategies to send mouse clicks to choose desired vocabulary.

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INFRARED:

Infrared, which is a signal frequency utilized by some wheelchair manufacturers, can also open access to the person's environment and allow a greater level of independence. This type of independence can make the difference between needing a caregiver present constantly or being able to remain alone for periods of time.

Simple activities such as changing the channel or controlling the volume on a television or stereo can enhance someone's life tremendously (see Picture 2). Sometimes, being able to do something that is seemingly minor can truly make a large difference in a consumer's life. I have had the experience of setting up a television or a stereo to the infrared transmitter on a consumer's wheelchair. This experience has allowed me to see the elation in their face when they realize that they now have another activity they can achieve independently. Keep in mind that not all remote controls utilize infrared signals. Satellite and cable TV companies often use both radio frequency and infrared signals in one remote control. The easiest way that you can identify whether a company is using a radio frequency or an infrared signal is to press a button with the remote pointed at your cell phone camera and look at the cell phone screen. If you can see the transmitter light up, then infrared is being utilized (you cannot see infrared with the naked eye, but you can see it on a cell phone camera). Another way to identify which technology is being used is to go into an adjoining room and press a button on the remote. If the television or device changes channels, then radio frequency is being applied, as infrared requires line of sight to function.

Programming infrared signals in wheelchair electronics is much easier

now than ever before. With universal remote technology set up inside most IR transmitting modules on wheelchairs, it is as simple as following the programming steps on the wheelchair electronics display, pointing a remote at the display and pressing the buttons on the remote control. Does it take time? Yes, but it is worth it for the individual whose life was just enhanced. Furthermore, they will gain an unforgettable experience with you and therefore will consider working with you again in the future. The extra effort makes a big difference.

Other appliances that can potentially be controlled by infrared technology include thermostats, stereos, individual heat sources and air conditioners, televisions, cable/satellite boxes, sound systems, lights, doors and many other devices found around the house. Visit the website <http://www.Insteon.com> or <http://www.smarthome.com> in order to look at the capabilities of infrared systems and how you can meet the needs of each individual you work with.

CONCLUSION:

Meeting the consumer's everyday needs beyond the wheelchair can seem daunting when you already have a significant work load. Just keep in mind that maximizing a consumer's independence is something that they will never forget. This type of professional effort will keep them coming back year after year and allow you to feel satisfied that you are making a difference in the lives of consumers.

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