

# Traumatic Brain Injury for VR Counselors

Margaret A. Struchen, Ph.D. and Laura M. Ritter, Ph.D., M.P.H.

## Training Session 3c: Technology and Assistive Devices that May Facilitate Functioning in the Workplace for Persons with TBI.

- [Technology that May Assist Functioning in the Workplace](#)
- [Other Assistive Devices that May Assist Vocational Functioning](#)
- [References](#)

In this section, we will review some of the assistive devices that are available to assist clients with TBI in their daily functioning. Although this is not an exhaustive list, it does provide some information about commonly utilized devices with which your clients may find benefit.

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### *Technology that May Assist Functioning in the Workplace*

#### Personal planning/data assistants:

External aids are often recommended to assist the client with TBI in compensating for cognitive impairments, including problems such as poor initiation, memory, and/or organization. These aids are often referred to as “cognitive orthoses” or “cognitive prosthetics.” While the specific tool or device may vary, all of these external aids are designed to directly assist the person with TBI in performing their everyday activities and can be customized to meet the particular needs of the individual. Another feature shared by these external aids is that persons with injury, their caregivers, or professionals must program the device with the appropriate times and messages. Such programming may be difficult for persons with injury to do. Development of cognitive orthoses is an area of rapid growth, such that new products are continuously being developed and existing products upgraded. Some electronic devices, like personal digital assistants (PDAs) and pagers, are available to the general public for use while others are specifically designed for the user with cognitive and/or physical disabilities. Likewise, some devices are fairly simplistic in design and use, while others are complex and designed to meet multiple user demands.

Within this educational website, we will not be referring to specific products but rather will describe some of the types of products that are available. The interested VR counselor may find more information about specific products through a search of the internet, such as the section on the assistive technology and cognitive disabilities project page at the website of the Brain Injury Association of America [www.biausa.org/at.htm](http://www.biausa.org/at.htm). For nearly all of the electronic devices, someone will have to enter the activities on the calendar and program the calendar to send a message to their cell phones, electronic pagers, or PDAs to remind them of certain activities. This can be used in the client’s home life, but can also be an important tool in facilitating performance in the workplace.

However, simply providing the devices to your client will likely be of limited value, as the clients will need support and training to utilize the systems effectively. Even with training, utilization of the device itself is a task that requires memory and initiation. The therapist and/or family members will need to work to develop systems that reinforce the use of the external aid to maximize benefit. For those with severe cognitive impairments, therapists, family members, and/or work supervisors will likely need to assist the person with injury to determine the activities and other information that are included in the reminders.



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### Voice Recorders

Some individuals may benefit from the use of handheld recorders, such as those with a dictaphone-like device that can store the individuals' own messages for later replay and recall.

### Pagers/mobile phones

Some systems use a pager or cell phone as the method for delivering reminder messages to the person with TBI. Such systems usually involve some type of software that can be programmed with the user's schedule in a calendar system where messages are then sent to the pager or cell phone at appropriate times. While some systems like this are available for a fee, others are available on the internet at no cost to the user, such as the calendar feature at yahoo.com.

### Electronic diaries or personal data assistants

PDA's can be programmed by the client, a family member, or a therapist to provide reminders about activities that the client needs to complete. In addition, the client can readily access a calendar, a "to do" list, etc. to help with memory and organizational needs. Clients with more severe cognitive impairments may have some difficulties in accessing information and/or entering information into devices that may be more complex in nature.

### Written diaries or planners

The more "low tech" approach involves the use of a day planner or diary in which appointments can be written into a calendar, "to do" lists can be maintained, and other important information (such as phone numbers and contacts) can be stored. Other low tech devices include the use of alarms, key finders, pillboxes, and the like to get around difficulties with initiation, memory, and organization.

### Computer access:

For those clients with motor or visual impairment, access to the computer may be a challenge. Several devices are available to assist the user in gaining access to computers and/or other electronic devices.

### Expanded keyboard

Some clients may benefit from the use of an expanded or "large-size" keyboard. These keyboards have larger keys and keys may be more widely set apart, so that clients do not have difficulty with seeing the correct key if visuospatial problems are present and/or pressing multiple keys at once due to poor motor control.



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### One-handed keyboard

For clients with hemiparesis (motor weakness on one side), a keyboard designed to be used with one hand may be helpful. This and other modifications can increase the ability to your clients to function in the workplace.

[Return to top](#) or [Continue](#)



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### *Other Assistive Devices that May Assist Vocational Functioning*

Clients with mobility problems or problems with motor functioning may require assistive devices to facilitate their return to work. Such devices and/or equipment may assist your client in negotiating the work environment or in getting to and from the workplace. Assistive equipment can include items such as:

- **Wheelchairs**
- **Canes**
- **Ramps**
- **Rails and grab bars**
- **Aids to daily living (devices to assist with grabbing or bracing hand for writing, etc.)**
- **Vehicle modification**

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Some of the information in this guide was adapted, with permission of the authors, from the following sources:

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[Return to top](#)



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