

Using external aids to compensate for memory and organizational problems post-TBI

Research shows that rather than “fixing” cognitive impairments following brain injury, survivors can learn to compensate for these challenges by using a variety of helpful tools. These tools are collectively described as external aids. This research brief provides an overview of various external aids, the needs assessment process used for aid selection, and tips for training these aids across environments.

What are external aids?

External aids fall into two categories: “low tech” and “high tech.”

Low tech aids include pencil/paper systems and simple organization tools. Examples include:

- Checklist: used to record lists for items (e.g., shopping list) and/or steps for specific routines (e.g., laundry routine, homework routine)
- Wall or pocket calendar: used to record/check appointments and events (e.g., doctor’s appointments, birthdays)
- Notebooks/daily planner: used to record/check information across several categories (e.g., calendars, contact information, expenses)
- Timer: used to monitor time during specific activities (e.g., homework, cooking task)
- Medication boxes: used to organize medications by day and time

High tech aids include electronic devices that have a range of programming options and uses. Examples include:

- Digital voice recorder: a device used to record information “in the moment” for later recall.
Example: Olympus Voice recorder™
- Programmable watch: a wristwatch used for alarms/reminders to help recall important activities/events.
Example: Timex DataLink™
- PDA (personal digital assistant): a “pocket computer” with several features including: alarms, calendar, contact information, internet, e-mail, and music.
Example: iPod Touch™
- Cell phone: a mobile phone that includes contact information; several models include alarm/calendar programs, and camera.
Example: Samsung™, Jitterbug™
- Smartphone: a device that combines a full-featured mobile phone with handheld computer functions as well as GPS (global positioning system).
Example: iPhone™, Blackberry™

What is the Needs Assessment?

Before selecting an external aid, it is important to answer these questions to ensure that it is well matched to the needs of the user.

Who? Who will use the aid? What are his/her unique strengths and challenges? Specific considerations include: severity of injury; cognitive abilities (e.g., awareness, attention, executive functions, problem solving, memory, language); hearing; vision; motor; financial resources to pay for external aid and service contracts; and past/current use of external aids.

Why? Why is the aid needed? What goals and activities will the aid help the user achieve? Does the user need an aid to complete one simple task or to accomplish multiple tasks?

Where & When? Where, when and with whom will the individual use the aid?

| Sample Needs Assessment | | |
|---|--|---|
| | Liz (15 years old; 5 years post-injury) | Joe (45 years old; 1 year post-injury) |
| Who? (User background) | impaired awareness, executive functions, and vision; limited financial resources; no prior use of external aids | impaired memory; cell phone use pre & post-injury for phone calls only |
| Why? (Goals/activities) | needs to turn in homework consistently | needs to get to appointments on time |
| Where & When? (Target environments) | school (teachers); home (parents) | work & community (e.g., medical appts) |
| Recommended External Aid | use large print homework checklist in the front cover of notebook ("Step 1: record assignments; Step 2: place sheets in course folder...") | use cell phone alarm as a reminder system; program alarms to go off at least 30 minutes before scheduled activity |

What is the best way to train external aids?

Once the external aid(s) has been selected, the user is provided with the opportunity to explore the aid followed by systematic *training* in how to check and enter information. Note: Initially users with more severe impairments should only be taught how to check information; someone else should enter the information for them. It is also possible that the user will not learn to program the device but that s/he can respond to the device and use it successfully.

Before *training*, the instructor (e.g., teacher, parent, job coach) determines the steps needed to learn how to use the aid across environments. During *training*, the instructor first models the steps, providing the user multiple opportunities to correctly practice each step until mastery is achieved. After *training*, the user and instructor determine whether the external aid is helping achieve the target goal. Future briefs will specifically address the topic of best practice instruction applied to a wide range of instructional targets.

Where can I find out more information?

- * Ehlhardt, L., Sohlberg, M.M. et al. (2008). Evidence-based Practice Guidelines for Instructing Individuals with Acquired Memory Impairments: What Have We Learned in the Past 20 Years? *Neuropsychological Rehabilitation*, 18 (3), 300-342. http://www.ncds.org/pdf/articles/Ehlhardt_EBP_instruction.pdf
- * Gillette, Y., DePompei, R., & Goetz, E. <http://www.brainline.org/downloads/PDFs/PDAInterventionPlan.pdf>
- * Matching Person and Technology. <http://matchingpersonandtechnology.com/>
- * Sohlberg, M.M. & Turkstra, L. (in press). *Cognitive Rehabilitation: Teaching New Skills, Strategies and Facts to People with Acquired Brain Injury*. New York: Guilford Press.
- * Sohlberg, M.M., Kennedy, M.R.T. et al. (2007). Evidence based practice for the use of external aids as a memory rehabilitation technique. *Journal of Medical Speech Pathology*, 15(1) http://www.ncds.org/pdf/articles/sohlberg_et_al_jmslp2007-2.pdf

To contact us or receive notification of new *Fact of the Matter* Briefs, email us: mch@wou.edu