

Traumatic Brain Injury for VR Counselors

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

Training Session 2b: Motor Changes that May Occur Following TBI, Impact on Vocational Issues, and Strategies to Address these Changes.

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Hemiparesis/hemiplegia and Spasticity (Moderate/Severe):

If motor pathways or centers have been damaged due to the TBI, an individual can experience weakness on one side of the body. This weakness can be total (hemiplegia) or can be partial (hemiparesis). Persons with hemiparesis often have problems with spasticity. Spasticity is a condition in which certain muscles are continuously contracted. Symptoms can include increased muscle tone, rapid muscle contractions, exaggerated deep tendon reflexes, muscle spasms, involuntary leg crossing, and fixed joints. Weakness and spasticity can interfere with walking and with performing activities of daily living like grooming.

How might hemiparesis/hemiplegia and spasticity impact vocational success?

Motor issues related to a traumatic brain injury can have implications at the work place for your client. Jobs with a strong physical component (e.g., construction, farming, etc.) may be greatly affected by difficulties in walking and/or use of an arm or leg. There may be activity limitations recommended by your client's physician (for example, not being able to climb ladders or lift a certain amount of weight). Alternatively, there may be certain aspects of the job which will require more effort or will take more time than had been the case prior to the injury (e.g., typing on the computer with arm motor weakness). There may be some subtle social changes that occur as a result of motor weakness that may require staff education or may need to be reviewed with your client. For example, a client may no longer be able to shake hands with the right hand and may need to use the left hand or adopt an alternative method of greeting customers and co-workers. In addition, the physical environment of the workplace may pose challenges to accessibility that may impact your client's ability to perform his or her job duties successfully. A careful evaluation of the job requirements may help identify specific accommodations that may be needed in order for your client to return to work or may lead to the consideration of job modification or different types of employment.

What strategies may be helpful to my client in managing hemiparesis/hemiplegia and spasticity to facilitate vocational success?

- Changes to the work environment to facilitate accessibility may be needed, including such things as changes to computer setup, seating, reorganization of the work station, etc. The workspace should be organized so that frequently used items are within easy reach and readily accessible.
- Encourage your client to allow for extra time when getting ready for and getting to activities and/or work-related appointments.



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- Consider movement problems when evaluating transportation needs to and from work and work-related activities.
- As mentioned previously, find out if there are any activity limitations recommended by the client's physician (for example, not being able to climb ladders or perform certain physical job demands, etc.). If such information is not available, consider referring your client for an evaluation with a physician (preferably a neurorehabilitation specialist or physiatrist) to obtain recommendations about activity limitations.
- Encourage your client to talk with their physician about possible referrals for physical therapy, occupational therapy, or for equipment (for example, walker, cane, etc.).

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Slowed Performance (Moderate/Severe):

People who experience moderate to severe TBI may have a slowed speed of performance. It may take them longer to accomplish motor tasks, like walking or tying their shoelaces. Writing and even speech can be slowed. Such slowing can be due to problems with motor weakness or can be due to diffuse injury to the brain, which can contribute to overall slowed transmission of nerve signals.

How might slowed performance impact vocational success?

Following TBI, a person might take longer to complete activities. This may result in missed deadlines or difficulty in keeping up with task demands in a fast-paced work environment (e.g., work in a fast-food restaurant or assembly line). A good job analysis may help you in determining the degree to which speed of performance is a large factor in the specific job to which your client may be employed.

What strategies may be helpful to my client in managing slowed performance to facilitate vocational success?

- If your client is exhibiting signs of slowed performance, you may wish to consider placing him or her in a position that has minimal time demands and pressures.
- You may wish to provide education to your client's supervisor and colleagues about how to set reasonable deadlines for projects, given your client's slowed performance.
- It is recommended that your client with slowed performance speed avoid working with equipment or machinery that requires quick reaction time, in order to maintain safety at the workplace.

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Poor Coordination (Moderate/Severe):

Sometimes persons with brain injury may experience difficulties with coordination. Control of gross and/or fine motor movements may be impaired. This can result in difficulties with activities like sitting, walking, buttoning a shirt, typing, etc. Individuals with coordination and motor control problems may be more unsteady when sitting, standing, or walking; may bump into things; or have trouble picking up things or manipulating them.

How might poor coordination impact vocational success?

For individuals with jobs that require a great deal of fine motor skill (such as seamstresses, jewelers, surgeons), job modification or change in employment may be necessary if fine motor dexterity has been affected by the injury. However, even jobs with a lesser focus on fine motor skills may be affected, since skills like typing on a keyboard, handwriting, and so forth may be slowed or difficult. Safety issues may be present if problems with gait control affect walking and increase the likelihood of falls.

What strategies may be helpful to my client in managing visual field cuts to facilitate vocational success?

- Remind your client not walk while carrying boxes or other items, as this could have implications on their coordination and balance. Encourage him or her to use a trolley or other device to transport items from one place to another.
- You may also wish to consider working with your client's physical therapist to identify positions and activities that will minimize the functional impact of motor difficulties. For example, your client might become unsteady when standing for long periods of time and as a result, you might work your client's employer to identify activities he or she can do while seated.
- Alternatively, perhaps adaptive equipment can be used to address your client's fine motor difficulties when completing work-related activities that require the manipulation of objects.

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Slurred Speech (dysarthria) (Moderate/Severe):

Individuals with TBI may have problems with slurred speech. Articulation can be affected by a variety of factors, but typically involves motor weakness or poor motor control of the muscles associated with the production of speech. Occasionally, this slurring of speech related to motor control difficulties as a result of injury may be misinterpreted by others as intoxication. As a social worker encountering individuals with slurred speech, it is important to ascertain whether a neurological problem related to injury is causal rather than assuming that a substance use condition is involved.

How might slurred speech impact vocational success?

Slurred speech may make it more difficult for co-workers and customers to understand the communication that is being attempted. Increased reliance on alternative forms of communication (e.g., e-mail, notes, etc.) may be necessary to ensure that the message has been understood by others. Slurred speech may result in communication tasks taking more time and energy than had been the case previously. Slurring of speech can become more pronounced with fatigue.

What strategies may be helpful to my client in managing slurred speech to facilitate vocational success?

- You and your client might need to consider the communication needs of his or her current position or of that of a position that he or she would like to obtain. Modifications might need to be made to the amount of time spent in face-to-face communication, as slurred speech could worsen after prolonged periods of speaking. You and your client might need to identify ways, such as email, that your client could alternatively use to communication within the workplace.
- Occasionally, the slurring of speech related to motor control difficulties after a TBI may be misinterpreted by others as intoxication. It could be important to educate your client's supervisor and co-workers that slurred speech after TBI is a neurological problem related to injury rather than making the assumption that a substance use condition is involved. You may also work with your client to come up with a way to explain the slurring of speech to current and potential customers and to recognize when such an explanation may be needed.



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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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