

ORGANIZATION NEWS

Information/Education Page

Balance Problems After Traumatic Brain Injury



Between 30-65% of people with traumatic brain injury (TBI) report problems with balance at some point in their recovery. Common balance issues include dizziness and disequilibrium.

Balance is the ability to keep your body centered over your feet. The ability to maintain your balance is determined by many factors, including your physical strength, coordination, senses, and cognitive (thinking) ability. Adjusting your posture or taking a step to maintain your balance before, during, and after movement is a complex process that is often affected after brain injury.

Balance problems depend on many factors including:

- Where in your brain you were injured.
- Other injuries you had along with your brain injury.
- Medications you may be taking.

Why is balance important?

When you have poor balance you have a high risk of falling and reinjuring yourself. Maintaining balance while sitting and standing is important for all daily activities, including self-care, walking, and driving.

Diagnosing balance problems

Many different kinds of healthcare providers may be involved in diagnosing and treating balance problems, including psychiatrists, neurologists, otolaryngologists, neuro-ophthalmologists, neuro-optometrists and physical therapists. The Berg Balance Scale and the Dynamic Gait Index are two tests commonly used to identify balance problems.

What are common causes of balance problems after traumatic brain injury?

- **Medications:** A number of commonly used medications (including those for blood pressure, infections, and seizures) can cause dizziness, lightheadedness, and imbalance. A change in medications or dosages may improve balance problems.
- **Postural hypotension:** A drop in blood pressure when standing or sitting up suddenly, called postural hypotension, can make you feel lightheaded and dizzy.
- **Vision impairments:** Problems with vision, one of the key senses you need to keep your balance, can lead to balance issues.
- **Vestibular impairments:** Your inner ear contains many tiny organs that help you keep your balance. Called the vestibular system, these organs rely on a complex interaction of fluid, tubes, and crystals to detect movement and maintain your balance. There are several types of vestibular impairments:

- **Benign paroxysmal positional vertigo (BPPV)** is one of the most common causes of vertigo, a type of dizziness associated with the perception of motion. With trauma, the crystals in the inner ear can be moved out of place, making you sensitive to changes in gravity. Symptoms are triggered by changes in head position.
- **Labyrinthine concussion or injury** to the nerve to the vestibular system can also cause vertigo and imbalance.
- **Traumatic endolymphatic hydrops** occurs when there is a disruption of the fluid balance within the inner ear. You may have periods of vertigo, imbalance, and ringing in your ears that last for hours to days.
- **Sensory impairments:** Nerves in various parts of your body, like the feet, send messages to your brain that help you keep your balance. Damage to these nerves can lead to balance issues.
- **Brainstem injury:** Damage to the brainstem and cerebellum (parts of the brain that control movement) can make it hard for you to walk and balance.
- **Perilymph fistula:** Leakage of inner ear fluid into the middle ear, called perilymph fistula, sometimes occurs after head injury. It can cause dizziness, nausea, and unsteadiness when walking or standing. It can get worse when you are more active.
- **Mental health issues:** Sometimes people with brain injuries have anxiety, depression, or a fear of falling. These conditions can cause or increase balance problems. Doctors call this psychogenic dizziness.

Treatment options

Balance problems can have many different causes, each one requiring a different treatment.

Ways you can improve your balance:

- Increase your strength and flexibility. Specific exercises include ankle stretches, mini-squats, and standing leg lifts. Go to www.nia.nih.gov/Go4Life for more information about these exercises.
- Find your balance limits by moving your body over your feet as far as you can without lifting your feet. This will help you develop strategies to prevent losing your balance.
- Practice standing or walking in different conditions. For example, you can practice standing with your eyes closed to decrease your dependency on vision for balance. You can also try to walk longer distances or in busy areas like the grocery store.

- Be cautious when working on your balance to avoid falling when no one is around. A physical or occupational therapist can help design a program that is safe for you to practice at home.
- BPPV is treated by using movements to relocate the crystals in your inner ear. To learn more about the treatment of BPPV, go to <http://www.dizziness-and-balance.com/disorders/bppv/bppv.html>.

How quickly can your balance improve?

How quickly your balance problems improve depends on the extent of injury and your health status before your injury.

Most people with TBI are able to walk independently within three months of injury. Residual problems with quick movements needed in high-level activities like sports can persist. With hard work, people with TBI can continue to improve their balance for many years after injury.

Disclaimer

This information is not meant to replace the advice from a medical professional. You should consult your healthcare provider regarding specific medical concerns or treatment.

Source

Our health information content is based on research evidence whenever available and represents the consensus of expert opinion of the TBI Model System directors.

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