

# Traumatic Brain Injury Facts: TBI & Older Adults

## What is a traumatic brain injury (TBI)?

A traumatic brain injury (TBI) occurs as the result of a sudden physical insult to the brain. The injury may be caused by the head forcefully hitting an object such as the dashboard of a car (closed head injury) or by something passing through the skull and piercing the brain, such as a gunshot wound (penetrating head injury). The person may or may not lose consciousness at the time of injury. Often the term "concussion" is used to refer to a mild brain injury.

## How many older adults experience a traumatic brain injury?

The Centers for Disease Control and Prevention reports that each year as a result of TBI, 10,000 older adults (persons age 65 and older) die, 55,000 are hospitalized, and 80,000 visit the Emergency Department. An unknown number of older adults visit a private physician or do not seek care and may have an undiagnosed traumatic brain injury.

Persons age 75 years and older have the highest rates of TBI hospitalization and death (261.0 per 100,000 and 50.0 per 100,000 respectively). The majority of traumatic brain injuries in older adults are caused by falls and motor vehicle crashes.<sup>1</sup>

## What problems are created by a traumatic brain injury?

The extent and location of the injury largely determines its severity and resulting problems relating to physical, behavioral, or cognitive abilities. Other factors, such as an individual's personality and pre-injury abilities, may affect post-injury behavior. Some of the common consequences of traumatic brain injury include:

- ❑ Cognitive impairments include difficulty concentrating for varying periods of time, organizing thoughts, and becoming easily confused or forgetful. The person may have difficulty learning new information, be unable to interpret others' actions, and may speak or behave inappropriately for the situation. Many individuals will have difficulty solving problems, making decisions, and planning. After an injury, judgment is often affected.
- ❑ Language problems include word-finding difficulty, poor sentence formation, lengthy and often faulty descriptions or explanations, and difficulty using language socially such as being confused by humor or sarcasm, monopolizing conversations, or appearing rude. Individuals with traumatic brain injuries are often unaware of their errors. After an injury, an individual may become frustrated or angry and may blame the person with whom he or she are speaking for any communication difficulties. Frequently after a TBI, an individual needs to re-learn how to communicate in a global sense to avoid blurting out whatever one is thinking, take turns in conversation, understand relevancy, and pick up on others' non-verbal cues.
- ❑ Speech may be slow, slurred, and difficult or impossible to understand.
- ❑ Sensory losses may include hearing, taste, smell, and vision. Blurred vision, double vision, light sensitivity, and focusing difficulty are typical neurological symptoms, as are nausea, dizziness, spatial disorientation, and problems with attention or concentration.
- ❑ Balance problems may impair one's ability to stand up, bend over, reach for something, drive a car, or go to the store.

- ❑ Emotional problems may include depression or mood swings, unusually reduced emotional expression, and lack of capacity to initiate. Behavior challenges can appear in many forms but most frequently impair social skills or interactions with others and may involve aggression toward others, self-injury, irritability, tantrums, yelling, cursing, or being noncompliant with other's requests.

## How can these problems be distinguished from other problems that older adults experience?

Changes in a person who has sustained a traumatic brain injury may not be immediate. It may be days or weeks after the injury when the person may exhibit a decline in mental capacity or may appear to have sudden signs of a dementia. An evaluation is needed whenever problems interfere with daily living such as work, routine chores, shopping, dressing, bathing, and finances. A primary care physician may conduct a neurological exam or may refer the individual to a specialist for more extensive testing.

## What is the usual course of treatment for traumatic brain injury, and what type of professionals are usually involved?

Many different types of professionals may be involved in the assessment, treatment and rehabilitation process at the time of the injury, while in the emergency department or hospital, and during post-acute rehabilitation. Professionals may include medical doctors such as a physiatrist, who is a doctor specializing in physical medicine and rehabilitation; nurses; therapists (occupational, physical, recreational, speech/language); neuropsychologist; psychologist; social workers; and case managers or service coordinators.

Rehabilitation helps the individual learn ways to compensate for abilities that have been permanently changed because of the brain injury. Rehabilitation should focus on return to community and independent living including socialization and other activities that are common to older adults and are conducted in familiar surroundings. Individuals who are elderly face unique psychosocial difficulties such as inadequate family support and involvement, special needs of the caregiver, and the need to improve or expand social networks. Rehabilitation, discharge, and transition plans should address these issues.

Services and supports that enable an older adult to live more independently include personal care assistance, in-home support, home modifications, and transportation services. While the goal is to return a person to his or her own home, many older adults transition to an assisted living or other type of residential program following an injury

## Where do elderly individuals with a traumatic brain injury generally go after hospitalization?

Older persons are most likely to be discharged from the hospital to a nursing home. However, 60 percent of older adults who sustain a mild TBI are likely to return home, and 30-50 percent of older adults who sustain severe TBI are likely to return home. Family involvement, social support networks, and financial resources vary greatly among older patients. In general, older persons tend to have less support and personal resources than younger persons.<sup>2</sup>

## If there is no medical diagnosis, what are some ways to screen for traumatic brain injury?

Asking questions of a caregiver, service provider(s), family member(s), and others who are familiar with the person may provide some basis for pursuing a more extensive evaluation or assessment. These questions include:

- ❑ Has the individual recently begun exhibiting unusual behaviors?
- ❑ Is the individual suddenly irritable, argumentative, combative, confused, verbally disinhibited, or unusually forgetful?
- ❑ Has the individual recently fallen? Are unexplainable bruises visible, especially around the head/face?
- ❑ If there was a fall, has there been a change in the person's mental skills?
- ❑ Has the individual recently been in a car crash, even a minor accident?

- Has the individual recently had difficulty in remembering to pay bills or other tasks important to living independently?
- Has the individual recently experienced reduced mobility, poor gait, or lack of coordination or balance?
- Has the individual stopped participating in his or her routine social activities such as playing bridge, crafts, volunteering, or attending religious services?
- Does the individual complain of headaches?
- Are there sudden problems with the person's sleep-wake cycle?

While functional assessment tools may be used to determine eligibility for State government services and programs, it is important to remember that an individual with a TBI may not be able to assess his or her difficulties accurately. A caregiver, family member, or close associate may be able to more accurately provide such information.

## What compensatory strategies help individuals with a traumatic brain injury function more independently and remain in their home and community?

For individuals who have memory and other cognitive difficulties, remembering to do things may be a problem. For example, taking medicine, keeping appointments, eating, interacting with others, or other necessary activities can be forgotten. Some strategies for assisting with these difficulties include:

- Creating memory notebooks
- Setting timers to remember tasks
- Creating a daily planner
- Using checklists
- Labeling cabinets or other areas of the home

Sometimes technology can help. For example, there are devices that dispense medications with a reminder alarm at a scheduled time. Other times, a service coordinator, family member, close friend, or service provider may need to contact the individual frequently to assist with daily activities. A clinical psychologist may be able to devise a behavioral treatment plan that will maximize independent living.

An individual experiencing physical difficulties may contact an occupational or physical therapist, nurse, or other health care worker to help assess his or her abilities/disabilities and advise on the most effective adaptations to compensate, such as handrails or a telephone with large numbers.

## How can TBI be prevented?

Falls are the most common cause of traumatic brain injury in older adults.<sup>3</sup> Increasing age, cognitive impairment, and alcohol intoxication have been identified as major risk factors for fall-related traumatic brain injury in older adults. Medication side effects and adverse drug reactions have also been associated with an increased risk of falling.

To reduce the risk of falling:

- Initiate a regular exercise program to improve strength, balance, and coordination, in accordance with doctor's orders.
- Make the home safer by removing barriers and other impediments that inhibit free or unobstructed movement.
- Improve lighting and visibility.
- Check to make sure medications are not creating dizziness or interfering with balance.
- Have the individual's vision checked.

Additional information about preventing falls is available from the Centers for Disease Control and Prevention:

- A Tool Kit To Prevent Senior Falls, 1999, <http://www.cdc.gov/ncipc/pub-res/toolkit/toolkit.htm>.
- Check for Safety: A Home Prevention Checklist for Older Adults, October 1999, <http://www.cdc.gov/ncipc/pub-res/toolkit/checkforsafety.htm>.

## What about driving after a traumatic brain injury?

Many individuals experience an age-related decline in vision, hearing, motor-reaction time, and cognitive abilities that affect driving capabilities. A traumatic brain injury may compound these problems, and as a result, the individual may not be able to respond quickly enough to his or her environment to drive safely. A doctor or rehabilitation professional may be able to evaluate these skills or may refer the individual to other professionals to determine physical, visual, and cognitive abilities.

## What are the key service programs and resources for TBI?

Most States identify a lead agency for traumatic brain injury that can provide information regarding the injury and programs that may be available to provide rehabilitative and community support services to individuals with traumatic brain injury and their families. To learn more, contact:

- ❑ National Association of State Head Injury Administrators (NASHIA) and the TBI Technical Assistance Center administered by NASHIA for further information regarding State services at 301-656-3500 or for additional reading on older adults and traumatic brain injury at [www.nashia.org](http://www.nashia.org).
- ❑ Brain Injury Association of America for information and resources about brain injury and to locate affiliates and services in your area at 1-800-444-6443, (703) 761-0750, or [www.biausa.org](http://www.biausa.org).
- ❑ U.S. Department of Health and Human Services, Administration on Aging, which provides information on aging services and resources at [www.aoa.gov](http://www.aoa.gov).

### Sources:

1. Unpublished data from National Center for Health Statistics (NVSS, NHDS, NHAMCS): 1995-1998.
2. Goleburn, C. and Golden, C. Traumatic brain injury outcome in older adults: a critical review of the literature. *Journal of Clinical Geropsychology*. 2001; 7(3): 161-187.
3. Centers for Disease Control and Prevention. Traumatic Brain Injury in the United States: A Report to Congress. December 1999.

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NASHIA is assisting state government in promoting partnerships and building systems to meet the needs of individuals with brain injury and their families.

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This information is provided by the Brain Injury Association of Virginia (BIAV). For more information about brain injury or resources in Virginia, contact BIAV at 1-800-444-6443 (in state only). Email: [info@biav.net](mailto:info@biav.net) Web: [www.biav.net](http://www.biav.net)