FACT SHEET

Reducing Work-Related Traumatic Brain Injury Risk

This WorkCare Fact Sheet describes traumatic brain injury risks, symptoms, emergency response, treatment and—most importantly—prevention.

In many cases, traumatic brain injury (TBI) is preventable, yet it is one of the most common, costly and disabling injuries experienced by Americans, according to the Centers for Disease Control and Prevention.

Public health studies show that:

- Falls are a leading cause of TBI-related hospitalizations
- Motor vehicle crashes and assaults are also among common causes of TBIs
- Firearm-related suicide is the most common cause of TBI-related deaths in the U.S.

At work and in the general population, falls are the leading cause of TBI across all age groups. Work-related falls frequently involve slippery, cluttered or unstable walking/working surfaces; unprotected edges; floor holes and wall openings; poorly positioned ladders; and misused personal protective equipment, according to studies conducted by the National Institute for Occupational Safety and Health.

Other common injury causes at work include being hit by a moving object, bumping against a fixed object such as a cabinet or overhang, and vehicle crashes.

Failure to wear head and fall protection gear, buckle a seat belt, secure loose objects and take precautions to prevent slips and falls significantly heightens injury risk. Gender also may be a risk factor: Men have significantly higher rates of TBI-related injuries and fatalities than women.

TBI Signs and Symptoms

A TBI is caused by a bump, blow, jolt or blast impact to the head, or a penetrating wound. Injury severity may range from mild (brief change in mental status or consciousness) to severe (extended period of unconsciousness or amnesia). A concussion, one of a number of types of brain injuries, is usually caused by a blow to the head. It also may be caused by violent shaking or a whiplash-type movement.

Signs and symptoms of brain injury include:

- Inability to remember the cause or events that occurred immediately before or after the incident
- Confusion and disorientation
- Short-term memory loss
- Headache
- Dizziness
- Blurred vision
- Slurred speech
- Nausea and vomiting
- Ringing in ears
- Changes in emotions
- Sleep disruption
- Feeling dazed or in a fog
- Listlessness or fatigue

Delayed onset symptoms may include:

- Concentration and memory complaints
- Irritability, aggression, mood swings and other personality changes
- Sensitivity to light and noise
- Sleep disturbances
- Psychological adjustment problems
- Depression
- Disorders of taste and smell

Certain types of traumatic brain injury may increase the risk of developing Alzheimer's disease or other types of dementia years after the injury occurs.

Emergency Response, First Aid and Treatment

Emergency responders should be called for anyone who loses consciousness or experiences seizures, repeated vomiting or symptoms that seem to worsen. Emergency

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care should also be sought for anyone whose head was injured in a vehicular accident or who fell from a height of more than 3 feet. Check for emergency response signs such as unequal pupils, weakness on one side of the body, confusion and/or severe drowsiness.

First aid may include applying ice wrapped in a cloth to the head and having the person rest quietly. An over-the-counter pain medication may be recommended for headache. A medical evaluation should be obtained when symptoms develop after impact to the head and when a concussion is suspected. Even when symptoms are mild, a brain injury may have occurred. A physician should be consulted for guidance on return to work, a contact sport or other activities that could cause another concussion before the brain has healed.

Severe brain injury requires hospitalization and rehabilitation. In some cases, surgery may be necessary. A severe injury can permanently affect brain function, speech, hearing and vision, and the ability to work and perform routine life activities such as driving and cooking.

Prevention

Injuries may be prevented and severity reduced by the selection and use of a safety helmet or hard hat and other personal protective equipment appropriate for the job. This includes wearing slip-resistant footwear, obeying warning signs, and taking added precautions when working and walking on wet, icy and uneven surfaces.

The Occupational Safety and Health Administration's Personal Protective Equipment standard, 29 CFR, Part 1910.135 on head protection, requires employers to ensure that employees wear a protective helmet whenever there is a potential for head injury. Head protection must comply with American National Standards Institute consensus standards, as outlined in the rule. Helmets must resist penetration, absorb the shock of a blow and protect against electrical shock.

Federal regulations and industry consensus standards provide specific measures and performance-based recommendations for fall prevention and protection. The Walking/Working Surfaces Standard, 29 CFR 1910.22, requires employers to keep all places of employment clean and orderly and in a sanitary condition.

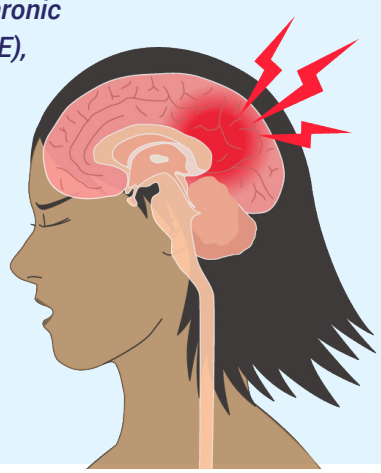
It also is important to wear seat belts in moving vehicles, properly secure objects that could fall from a height, and follow lockout/tagout rules for valves and other devices under pressure.

Successful reduction of TBI injury and fatality rates depends on a collaborative approach to improve workplace health and safety and provide continuous workforce education, occupational health and safety experts say.

How Does the Brain Get Bruised?

On impact, the brain gets bruised when it bumps the interior of the skull on the side where it is hit and on the opposing side as it rebounds. An incident of this nature can have short- and long-term effects. Multiple concussions can cause permanent brain damage.

Another type of brain injury, chronic traumatic encephalopathy (CTE), is a progressive, fatal brain disease associated with repeated concussions and blows to the head. People who play contact sports and military veterans are among those with higher risk for CTE and the development of dementia.



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