

# Falls and Traumatic Brain Injury: The Basics



Brain Injury Association  
of America



*This brochure  
was developed  
for persons with  
brain injury,  
family members,  
caregivers, and  
friends to suggest  
ways to deal  
with the problems  
one may face  
when living with  
brain injury.*

**Falls and Traumatic Brain Injury:  
The Basics**

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## INTRODUCTION

This brochure is for individuals who may be at risk of sustaining a traumatic brain injury due to a fall. It's especially important for older people and their family and friends to understand the causes of falls, how to prevent them, what action should be taken if a fall does occur, and the potential health consequences that may result. Since this booklet is only intended as a starting point, it ends with a list of resources that readers can use to obtain further information.

## WHAT IS A TRAUMATIC BRAIN INJURY?

A **traumatic brain injury (TBI)** is caused by a blow or jolt to the head or a penetrating head injury that disrupts the function of the brain. Not all blows or jolts to the head result in a TBI. The severity of a TBI may range from "mild" (a brief change in mental status or consciousness) to "severe" (an extended period of unconsciousness or amnesia). In the United States, **falls are the leading cause of TBI.**

## CAUSES OF FALLS

The causes of falls are known as risk factors. The greater the number of risk factors to which an individual is exposed, the greater the probability of a fall, and the more likely the results of the fall will threaten the person's health and independence.

- Fall rates are highest for children age 0 to 4 years and adults age 75 and older.
- Among older people, the risk of falling increases with age and is greater for women than for men.
- Two-thirds of those who experience a fall will fall again within six months.
- At least one-third of all falls among older people involve environmental hazards in the home.

Poor lighting or throw rugs in your home can make you more liable to trip or slip. The ordinary changes that come with aging, such as diminished eyesight or hearing, can also make you more likely to fall. A decrease in bone density contributes to falls and the injuries that result.

Illnesses and physical conditions, whether related to aging or not, can affect your strength and balance and contribute to a fall. Failure to exercise regularly can be a factor, too, because it results in poor muscle tone, decreased strength, and loss of bone mass and flexibility.

The side effects of some medicines can also cause falls. Medications for depression, sleep problems, and high blood pressure often make a person more likely to fall. Some medicines for diabetes and heart conditions can also make you unsteady on your feet. You may be more likely to fall if you are taking four or more medicines or have changed your prescription or dosage in the past two weeks.

## ARE YOU AT RISK?

**You are especially at risk for a fall if you:**

- Have had a previous fall
- Have physical limitations (including visual problems)
- Have more than one chronic disease
- Take more than four medications or use psychoactive medications (such as antidepressants)
- Are cognitively impaired
- Have lower body weakness or gait or balance problems

Though falls can be seen as a normal part of aging, many falls can be avoided if people are aware of the risk factors and take preventive action. Ask yourself the following questions—the more often you answer "Yes," the higher your risk:

- During the past year, have you fallen more than once?
- Are you currently taking medication for heart disease, hypertension, arthritis, anxiety, and/or depression?
- When you make sudden changes in movement (for example, standing up or bending down), do you feel dizzy or unsteady?
- Do you have a history of seizures or experience blackouts?
- Do you have a history of stroke, Parkinson's disease, or other neurological problems that have impaired your balance?
- Do you have poor sensation or numbness in your legs and/or feet?

- ❑ Do you need help to get around, or do you use a walker, cane, or wheelchair?
- ❑ Do you exercise less than recommended, which is at least three times a week for 20-30 minutes each time, or is your lifestyle generally inactive?
- ❑ When you are climbing stairs, do you feel unsteady or lose your balance?
- ❑ Do you have problems getting up from a seated or lying position?

## FOUR WAYS TO HELP PREVENT FALLS

### *1. Make Your Home Safer*

About half of all falls happen at home. Take the following steps to make your living space more fall-proof:

- Remove things you can trip over (such as papers, books, clothes, and shoes) from stairs and places where you walk.
- Install handrails and lights in staircases.
- Get rid of small throw rugs, or use double-sided tape to keep the rugs in place.
- Keep frequently used items in cabinets or storage areas that you can reach easily (without using a step stool).
- Install grab bars next to your toilet and your tub or shower.
- Use non-slip mats in the bathtub and on shower floors.
- Improve the lighting in your home. As you get older, you need brighter lights to see well. Turn on the lights when entering your house at night.

## ***2. Begin a Regular Exercise Program***

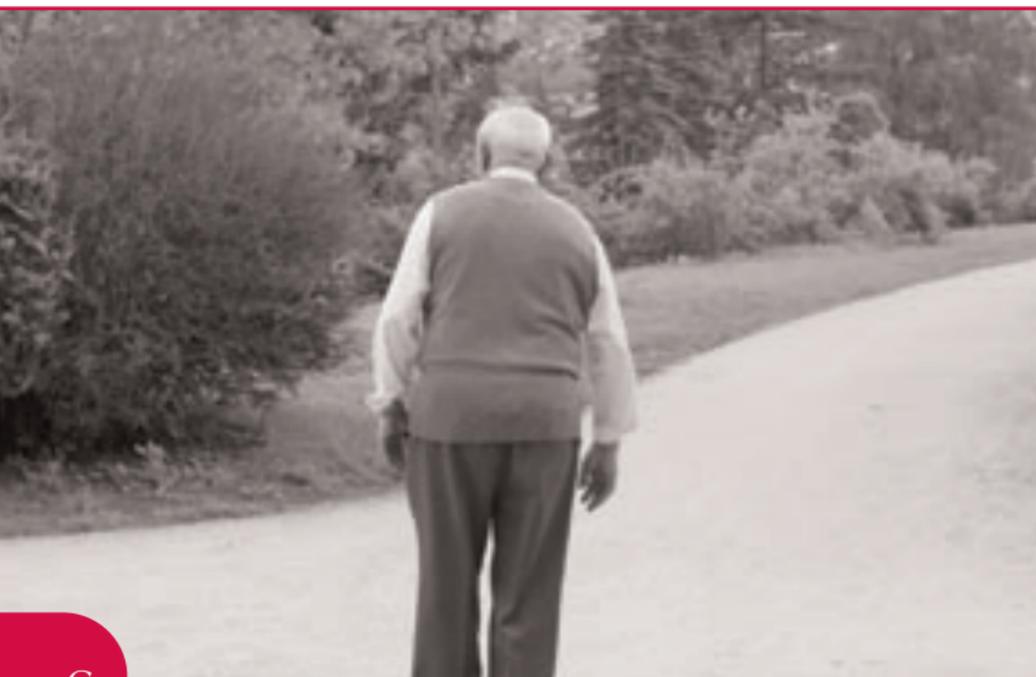
Exercise is one of the most important ways to reduce falls because it increases strength and agility, lessening the likelihood of a fall. Ask your doctor or health care worker about the best type of exercise program to meet your specific needs.

## ***3. Review Your Medicines***

As you get older, the physical effects of some medicines—or combination of medicines—can change. Some can lead to falls by making you drowsy or light-headed. Ask your doctor or pharmacist to review all the medications you take, including over-the-counter medicines, and see if adjustments can be made to minimize your risk of falls.

## ***4. Check Your Vision***

Poor vision can increase your chances of falling. You may be wearing the wrong glasses or have an undiagnosed eye condition that limits your vision. Have your vision checked by an eye doctor.



## IN THE EVENT OF A FALL

If a person is knocked unconscious in a fall, he or she should be taken to a hospital right away. Any delay could be life-threatening.

However, even if the injured person does not lose consciousness, a blow to the head can have serious medical consequences. The possibility of a TBI cannot be taken lightly. Keep in mind that it is impossible to tell what kind of damage the brain has sustained just by looking at the injured person. Symptoms can be delayed. Err on the side of caution, particularly if the injured person is taking blood thinners or if he or she has a bleeding disorder such as hemophilia.

Seek immediate medical attention if the injured person shows any of the following symptoms:

- Headaches, nausea, sleepiness, or problems concentrating
- Changes in behavior, such as irritability or confusion
- Dilated pupils (pupils that are bigger than normal) or pupils of different sizes
- Trouble walking or speaking
- Drainage of bloody or clear fluids from ears or nose
- Vomiting
- Seizures
- Weakness or numbness in the arms or legs

## POSSIBLE CONSEQUENCES OF A FALL

Repeated mild TBIs (these are also frequently called concussions) occurring over a period of months or years can result in cumulative problems. Repeated mild TBIs that occur within a short period of time—hours, days, or weeks—can be catastrophic or fatal.

Impairments caused by brain injury can be divided into three major categories: physical, cognitive, and behavioral.

**Physical impairments** can include:

- Speech, vision, hearing, and other sensory impairments
- Headaches
- Lack of coordination
- Muscle spasticity (stiff, tight muscles, especially in the arms and legs, making movements rigid, jerky, or uncomfortable)
- Paralysis
- Seizure disorders
- Sleep problems
- Dysphagia (difficulty in swallowing)
- Dysarthria (difficulty in speaking)

**Cognitive impairments** can include:

- Short- and long-term memory deficits
- Slowness of thinking
- Problems with reading and writing skills
- Difficulty maintaining attention and concentration
- Impairments of perception,

- communication, and reasoning
- Impaired problem solving, planning, sequencing, and judgment

**Behavioral impairments** can include:

- Mood swings
- Depression and/or anxiety
- Lowered self-esteem
- Lack of motivation
- Sexual dysfunction
- Difficulty relating to others
- Restlessness and impatience
- Irritability and agitation
- Inability to self-monitor; inappropriate social responses
- Excessive laughing or crying
- Difficulty with emotional control and anger management
- Abrupt acts of violence
- Delusions, paranoia, or mania

## OUTCOMES

Every individual with a brain injury is different, with a unique recovery process and outcome. However, the older the person with the injury, the more likely it is that he or she will have a poorer prognosis or outcome. Studies reveal that individuals with brain injuries who are age 55 and older:

- Have significantly longer, more costly stays on rehabilitation units
- Recover approximately half as quickly as younger people with similar injuries
- Have greater cognitive impairment at discharge than younger people with similar injuries

Older individuals in good health tend to have better outcomes than ones who are in poorer health or have preexisting medical conditions.

## CONCLUSION

The best cure for traumatic brain injury is prevention. Older people in particular should take decisive action to minimize the risk of a fall that could result in a TBI. However, if a fall should occur, immediate medical action must be taken, and both the individual with the injury and his or her family and friends must be aware of the physical, mental, and emotional impairments that may result.

## ORGANIZATIONS AND RESOURCES

Brain Injury Association of America  
National Brain Injury Information Center  
1-800-444-6443  
[www.biausa.org](http://www.biausa.org)

Centers for Disease Control and  
Prevention-Injury Center  
[www.cdc.gov/ncipc](http://www.cdc.gov/ncipc)  
1-800-311-3435  
See especially the CDC's toolkit  
"Preventing Falls Among Older Adults" at  
[www.cdc.gov/ncipc/pub-res/toolkit/toolkit.htm](http://www.cdc.gov/ncipc/pub-res/toolkit/toolkit.htm).

U.S. Consumer Product Safety  
Commission  
1-800-638-2772  
[www.cpsc.gov](http://www.cpsc.gov)

National Institute on Aging–Health  
Information  
1-800-222-2225  
[www.nia.nih.gov/HealthInformation](http://www.nia.nih.gov/HealthInformation)

The Fall Prevention Project and HEROS ©  
(Health, Education, Research and  
Outreach for Seniors)  
[www.temple.edu/older\\_adult](http://www.temple.edu/older_adult)

American Academy of Orthopaedic  
Surgeons  
1-800-824-BONES  
[www.aaos.org](http://www.aaos.org)

The U.S. Administration on Aging  
[www.aoa.dhhs.gov](http://www.aoa.dhhs.gov)

Aging Network Services  
[www.agingnets.com](http://www.agingnets.com)

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Falls*. Available free at  
[www.cdc.gov/ncipc/pub-  
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brochure\\_Eng\\_desktop.pdf](http://www.cdc.gov/ncipc/publications/toolkit/Falls_ToolKit/DesktopPDF/English/brochure_Eng_desktop.pdf).

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Available free at [www.cdc.gov/ncipc/pub-  
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## ABOUT THE AUTHOR

### **Caroline Feller, MS, OTR, CCM**

For nearly 20 years, Ms. Feller has demonstrated a passionate commitment toward individuals directly affected by brain injury and their families. This passion was awakened early in her career as an occupational therapist while she was working with a client who had sustained a traumatic brain injury. Subsequently, her vocational pursuits have been consistently focused in the area of brain injury. Her work history includes positions as a cognitive specialist, clinical supervisor, case manager, program director of post-acute services, and director of brain injury services. She served as executive director of the Brain Injury Association of Wisconsin and currently is affiliate services manager for the Brain Injury Association of America.

## Notes

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*Falls and Traumatic Brain Injury: The Basics* is one in a series of brochures on "Living with Brain Injury."



*Preparing for Life after High School*



*A Basic Legal Glossary*



*Substance Abuse*



*Depression*



*Driving after Brain Injury*



*A Physician Talks About Severe Brain Injury*

*To order any of these booklets, please contact the Brain Injury Association of America at*

**1.800.444.6443 or  
www.biausa.org**