



# Facts about Concussion and Brain Injury

WHERE TO GET HELP



About Concussion  
Signs and Symptoms  
Getting Better  
Where to Get Help  
Resources

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL AND PREVENTION



# Facts about Concussion and Brain Injury

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# ABOUT CONCUSSIONS



"Facts about Concussion and Brain Injury: Where to Get Help," is a publication of the Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. See [www.cdc.gov/TraumaticBrainInjury](http://www.cdc.gov/TraumaticBrainInjury).

A concussion is a mild form of traumatic brain injury (TBI) caused by a bump, blow, or jolt to the head. Concussions can also occur from a fall or a blow to the body that causes the head to move rapidly back and forth. Doctors may describe these injuries as “mild” because concussions are usually not life-threatening. Even so, their effects can be serious. Understanding the signs and symptoms of a concussion can help you get better more quickly.







## Leading causes of concussion

*(seen in emergency departments):*

- falls
- motor vehicle-related injury
- unintentionally being struck by or against an obstacle
- assaults
- playing sports

After a concussion, some people lose consciousness (“knocked out”) for a short time. However, most concussions do not result in a loss of consciousness. Not being able to remember events (amnesia) prior to, or following the injury, for a period of time is another sign of concussion. Yet, some people simply feel dazed or confused.

Symptoms of concussion usually fall into four categories:

-  **THINKING/REMEMBERING**, such as difficulties remembering recent events (even those immediately before and/or after the concussion), or feeling mentally “foggy”
-  **PHYSICAL**, such as headaches or difficulty with bright light or loud noises
-  **EMOTIONAL/MOOD**, such as irritability, sadness, or nervousness
-  **SLEEP DISTURBANCE**, such as sleeping more or less than usual

*See page 5 for more information and a full list of concussion signs and symptoms*

Most people with a concussion recover quickly and fully. But for some people, symptoms can last for days, weeks, or longer. In general, recovery may be slower among older adults, young children, and teens. Those who have had a concussion in the past are also at risk of having another one and may find that it takes longer to recover if they have another concussion.





## MEDICAL HELP

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People with a concussion need to be seen by a doctor. While most are seen in an emergency department or a doctor's office, some people must stay in the hospital overnight.

Your doctor may do a scan of your brain (such as a CT scan) or other tests. Other tests, known as “neuropsychological” or “neurocognitive” tests, assess your learning and memory skills, your ability to pay attention or concentrate, and how quickly you can think and solve problems. These tests can help your doctor identify the effects of a concussion. Even if the concussion doesn't show up on these tests, you may still have a concussion.

*Persons taking blood thinners should be seen immediately by a health care provider if they have a bump or blow to the head even if they do not have any symptoms listed on page 5.*

Your doctor will send you home with important instructions to follow. Be sure to follow all of your doctor's instructions carefully.

If you are taking medications—prescription, over-the-counter medicines, or “natural remedies”—or if you drink alcohol or take illicit drugs, tell your doctor. Also, tell your doctor if you are taking blood thinners (anticoagulant drugs), such as Coumadin and aspirin, because they can increase the chance of complications.



## DANGER SIGNS – ADULTS

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In rare cases, a dangerous blood clot may form on the brain in a person with a concussion and crowd the brain against the skull. Contact your doctor or emergency department right away if you have any of the following danger signs after a bump, blow, or jolt to the head or body:

- Headache that gets worse and does not go away
- Weakness, numbness or decreased coordination
- Repeated vomiting or nausea
- Slurred speech

The people checking on you should take you to an emergency department right away if you:

- Look very drowsy or cannot be awakened
- Have one pupil (the black part in the middle of the eye) larger than the other
- Have convulsions or seizures
- Cannot recognize people or places
- Are getting more and more confused, restless, or agitated
- Have unusual behavior
- Lose consciousness (a brief loss of consciousness should be taken seriously and the person should be carefully monitored).



## DANGER SIGNS – CHILDREN

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Take your child to the emergency department right away if they received a bump, blow, or jolt to the head or body, and:

- Have any of the danger signs for adults listed above
- Will not stop crying and cannot be consoled
- Will not nurse or eat

# SYMPTOMS OF CONCUSSION







## PERSONS OF ALL AGES

*“I just don’t feel like myself.”*

Most people with a concussion have one or more of the symptoms listed below and recover fully within days, weeks or a few months. But for some people, symptoms of concussion can last even longer. Generally, if you feel that “something is not quite right,” or if you are feeling “foggy,” you should talk with your doctor.

Concussion symptoms are often grouped into four categories, including:

 <b>THINKING/ REMEMBERING</b>	 <b>PHYSICAL</b>	 <b>EMOTIONAL/ MOOD</b>	 <b>SLEEP DISTURBANCE</b>
<ul style="list-style-type: none"><li>• Difficulty thinking clearly</li><li>• Feeling slowed down</li><li>• Difficulty concentrating</li><li>• Difficulty remembering new information</li></ul>	<ul style="list-style-type: none"><li>• Headache</li><li>• Nausea or vomiting (early on)</li><li>• Balance problems</li><li>• Dizziness</li><li>• Fuzzy or blurry vision</li><li>• Feeling tired, having no energy</li><li>• Sensitivity to noise or light</li></ul>	<ul style="list-style-type: none"><li>• Irritability</li><li>• Sadness</li><li>• More emotional</li><li>• Nervousness or anxiety</li></ul>	<ul style="list-style-type: none"><li>• Sleeping more than usual</li><li>• Sleeping less than usual</li><li>• Trouble falling asleep</li></ul>

Some of these symptoms may appear right away, while others may not be noticed for days or months after the injury, or until the person starts resuming their everyday life and more demands are placed upon them. Sometimes, people do not recognize or admit that they are having problems. Others may not understand why they are having problems and what their problems really are, which can make them nervous and upset.

The signs and symptoms of a concussion can be difficult to sort out. Early on, problems may be missed by the person with the concussion, family members, or doctors. People may look fine even though they are acting or feeling differently.



## **YOUNG CHILDREN**

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Very young children (i.e., infants, toddlers, and preschoolers) often bump and bruise their heads. This can happen as a result of motor vehicle crashes, falls, getting hit in the head with a ball or toy, or from tricycle/bike accidents.

Sometimes these events can be serious and result in a concussion.





Young children can have the same symptoms of a concussion as older children, but it is harder for them to let others know how they are feeling. In addition to the symptoms mentioned on page 5, call your child's doctor right away if your child seems to be getting worse or if you notice any of the following:

- Crying more than usual
- Headache that will not go away
- Change in the way they play, perform or act at school
- Change in nursing, eating, or sleeping patterns
- Becoming easily upset or increased temper tantrums
- Sad mood
- Lack of interest in usual activities or favorite toys
- Loss of new skills, such as toilet training
- Loss of balance, unsteady walking
- Poor attention



## OLDER ADULTS

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Because concussions are often missed or misdiagnosed among older adults, be especially alert if you know that an older adult has fallen or has a fall-related injury, such as a hip fracture. Older adults may have a higher risk of serious complications from a concussion, such as bleeding on the brain. Headaches that get worse or increased confusion are signs of this complication. If they occur, see a doctor right away. Older adults often take blood thinners; if they do, they should be seen immediately by a health care provider if they have a bump or blow to the head or body even if they do not have any of the symptoms listed on page 5.

# GETTING BETTER

*“Sometimes the best thing you can do is just rest and then try again later.”*

Although most people recover fully after a concussion, how quickly they improve depends on many factors. These factors include how severe their concussion was, their age, how healthy they were before the concussion, and how they take care of themselves after the injury.

Some people who have had a concussion find that at first it is hard to do their daily activities, their job, to get along with everyone at home, or to relax. Ignoring your symptoms and trying to “tough it out” often makes symptoms worse.

**Rest is very important after a concussion because it helps the brain to heal.** You’ll need to be patient because healing takes time. Only when the symptoms have reduced significantly, in consultation with your doctor, should you slowly and gradually return to your daily activities, such as work or school. If your symptoms come back or you get new symptoms as you become more active, this is a sign that you are pushing yourself too hard. Stop these activities and take more time to rest and recover. As the days go by, you can expect to gradually feel better.

If you already had a medical condition at the time of your concussion (such as chronic headaches), it may take longer for you to recover from the concussion. Anxiety and depression

may also make it harder to adjust to the symptoms of a concussion. While you are healing, you should be very careful to avoid doing anything that could cause a bump, blow, or jolt to the head or body. On rare occasions, receiving another concussion before the brain has healed can result in brain swelling, permanent brain damage, and even death, particularly among children and teens.

After you have recovered from your concussion, you should protect yourself from having another one. People who have had repeated concussions may have serious long-term problems, including chronic difficulty with concentration, memory, headache, and occasionally, physical skills, such as keeping one's balance.



## TIPS FOR HEALING - ADULTS

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Tips to help you get better:

- Get plenty of sleep at night, and rest during the day.
- Avoid activities that are physically demanding (e.g., heavy housecleaning, weightlifting/working-out) or require a lot of concentration (e.g., balancing your checkbook). They can make your symptoms worse and slow your recovery.
- Avoid activities, such as contact or recreational sports, that could lead to a second concussion. (It is best to avoid roller coasters or other high speed rides that can make your symptoms worse or even cause a concussion.)
- When your doctor says you are well enough, return to your normal activities gradually, not all at once.
- Because your ability to react may be slower after a concussion, ask your doctor when you can safely drive a car, ride a bike, or operate heavy equipment.
- Talk with your doctor about when you can return to work. Ask about how you can help your employer understand what has happened to you.
- Consider talking with your employer about returning to work gradually and about changing your work activities or schedule until you recover (e.g., work half-days).
- Take only those drugs that your doctor has approved.
- Do not drink alcoholic beverages until your doctor says you are well enough. Alcohol and other drugs may slow your recovery and put you at risk of further injury.
- Write down the things that may be harder than usual for you to remember.

- If you're easily distracted, try to do one thing at a time. For example, don't try to watch TV while fixing dinner.
- Consult with family members or close friends when making important decisions.
- Do not neglect your basic needs, such as eating well and getting enough rest.
- Avoid sustained computer use, including computer/video games early in the recovery process.
- Some people report that flying in airplanes makes their symptoms worse shortly after a concussion.



## TIPS FOR HEALING - CHILDREN

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Parents and caregivers of children who have had a concussion can help them recover by taking an active role in their recovery:

- Having the child get plenty of rest. Keep a regular sleep schedule, including no late nights and no sleepovers.
- Making sure the child avoids high-risk/ high-speed activities such as riding a bicycle, playing sports, or climbing playground equipment, roller coasters or rides that could result in a second bump, blow, or jolt to the head or body. Children should not return to these types of activities until the doctor says they are well enough.
- Giving the child only those drugs that are approved by the pediatrician or family physician.
- Talking with the doctor about when the child should return to school and other activities and how the parent or caregiver can help the child deal with the challenges that the child may face. For example, your child may

need to spend fewer hours at school, rest often, or require more time to take tests.

- Sharing information about concussion with parents, siblings, teachers, counselors, babysitters, coaches, and others who interact with the child helps them understand what has happened and how to meet the child's needs.



# WHERE TO GET HELP



## HELP FOR PEOPLE WITH CONCUSSION

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*“It was the first time in my life that  
I couldn’t depend on myself.”*

There are many people who can help you and your family as you recover from a concussion. You do not have to do it alone.

Show this booklet to your doctor or health care provider and talk with them about your concerns. Ask your doctor about whether you need specialized treatment and about the availability of rehabilitation programs.

Your doctor can help you find a health care provider who has special training in treating concussion. Early treatment of symptoms by a specialist may speed recovery. Your doctor may refer you to a neuropsychologist, neurologist, or specialist in rehabilitation.

Keep talking with your doctor, family members, and loved ones about how you are feeling, both physically and emotionally. If you do not think you are getting better, tell your doctor.

For more information, see the Resources on page 15.



## HELP FOR FAMILIES AND CAREGIVERS

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*“My husband used to be so calm. But after his injury, he started to explode over the littlest things. He didn’t even know that he had changed.”*

When someone close to you has a concussion or a more serious brain injury, it can be hard to know how best to help. They may say that they are “fine,” but you can tell from how they are acting that something has changed.

If you notice that your family member or friend has symptoms of a concussion that are getting worse, talk to them and their doctor about getting help. They may need help if you can answer YES to any of the following questions:

- Are any of the concussion symptoms substantially affecting their life activities (such as feeling restricted in their activities due to symptoms, performance in school or at work has changed, unhappy with life changes)?
- Has their personality changed?
- Do they get angry for no reason?
- Do they get lost or easily confused?
- Do they have more trouble than usual making decisions?

You might want to talk with people who share your experience. The Brain Injury Association of America can put you in contact with people who can help (see page 15).





## RESOURCES

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*“I thought I was all alone, but I’m not.  
There are lots of people out there who understand  
what I’ve been through.”*



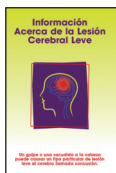
Several groups help people and their families deal with concussion and more serious brain injuries. They provide information and put people in touch with local resources, such as support groups, rehabilitation services, and a variety of health care professionals.

- ▶ CDC’s Injury Center has created resources and conducts research to help prevent concussion and more serious brain injuries and improve outcomes for survivors. For more information contact CDC toll-free at 1-800-CDC-INFO (1-800-232-4636) or visit CDC’s Injury Center on the Web at [www.cdc.gov/TraumaticBrainInjury](http://www.cdc.gov/TraumaticBrainInjury).
- ▶ The Brain Injury Association of America (BIAA) has a national network of many state affiliates and hundreds of local chapters and support groups across the country that provide help in your community.

You can reach BIAA by calling the toll-free National Brain Injury Information Center at 1-800-444-6443. You can also get information through their website at [www.biausa.org](http://www.biausa.org). Both the help line and the website can provide you with information about the BIAA affiliate closest to you.

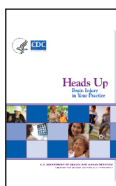
- ▶ The Defense and Veterans Brain Injury Center (DVBIC) works to ensure that active duty military and veterans with brain injury receive the best evaluation, treatment, and follow-up. You can reach DVBIC by calling toll-free at 1-800-870-9244 or by visiting their website at [www.dvbic.org](http://www.dvbic.org).
- ▶ For more information about TBI in the military, including an interactive website for service members, veterans, and families and caregivers, please visit: [www.TraumaticBrainInjuryatoz.org](http://www.TraumaticBrainInjuryatoz.org).

## ADDITIONAL CDC CONCUSSION RESOURCES



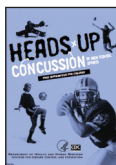
### Information about Mild Brain Injuries (Información Acerca de la Lesión Cerebral Leve) booklet

This booklet is written for Spanish-speaking people with brain injuries and their family members or caregivers. The booklet provides information about brain injury, its symptoms, tips for healing, and resources.



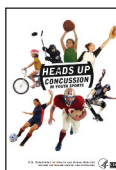
### Heads Up: Brain Injury in Your Practice initiative

Physicians and other health care providers can play a key role in helping to reduce the occurrence of mild traumatic brain injury (TBI) or concussion by educating patients and the community about risks and how to prevent these injuries. This initiative provides physicians with tools and information for improving the clinical diagnosis and management of mild TBI.



### Heads Up: Concussion in High School Sports initiative

Concussions can happen to any athlete—male or female—in any sport. This initiative, developed for high school coaches, athletic directors and trainers, contains practical, easy-to-use information, such as a video, guide for coaches, wallet card, clipboard sticker, posters, and fact sheets.



### Heads Up: Concussion in Youth Sports initiative

To help ensure the health and safety of young athletes, CDC developed the “Heads Up: Concussion in Youth Sports” initiative to offer information about concussions to youth sports coaches, administrators, parents, and athletes. This initiative provides information about preventing, recognizing, and responding to a concussion and includes fact sheets for coaches, athletes, and parents, and a clipboard, magnet, poster, and quiz.



### Help Seniors Live Better, Longer: Prevent Brain Injury initiative

This initiative was developed for caregivers and children of older adults to raise their awareness of ways to prevent, recognize, and respond to fall-related TBI among adults ages 75 and older. As part of this initiative, CDC developed English- and Spanish-language materials for older adults and their caregivers, including a brochure, booklet, fact sheet, magnet, posters, and e-cards.

For more information and resources, including multiple fact sheets available on concussion and TBI, or to order additional materials free-of-charge, call CDC toll-free at 1-800-CDC-INFO (1-800-232-4636) or visit CDC's Injury Center on the Web at [www.cdc.gov/TraumaticBrainInjury](http://www.cdc.gov/TraumaticBrainInjury).



**A bump, blow, or jolt to the head can cause a concussion, a type of traumatic brain injury (TBI). Concussions can also occur from a fall or a blow to the body that causes the head to move rapidly back and forth.**

Some symptoms of a concussion are:

- Headaches that won't go away
- Having more trouble than usual remembering things or concentrating
- Confusion about recent events
- Feeling tired all of the time
- Feeling sad or anxious
- Becoming easily irritated or angry for little or no reason

For more information about danger signs, tips for getting better, and where to go for help, look inside this booklet.

## **PARTICIPATING ORGANIZATIONS**

American College of Emergency Physicians  
Brain Injury Association of America  
Children's National Medical Center  
Emergency Nurses Association  
Human Resources and Services Administration  
Indian Health Service  
National Academy of Neuropsychology  
National Association of State Head Injury Administrators  
North American Brain Injury Society  
Special Olympics International



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