



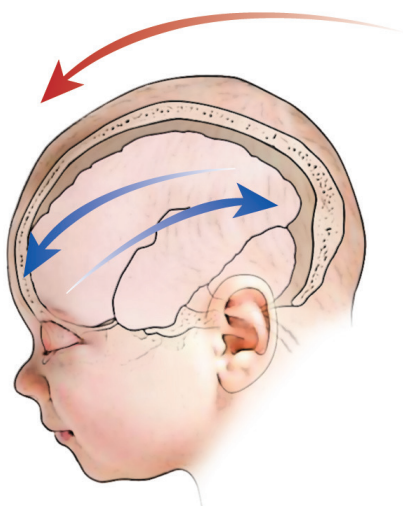
Caring for your child with a concussion

Ages 4 years and younger

What is a concussion?

A concussion:

- Is a type of traumatic brain injury (TBI) caused by a blow to the head or another part of the body.
- **Affects how the brain functions and processes** information at the neurochemical level.
- **Is not a structural injury** to the brain, so imaging tests like a CT scan or MRI will most often look normal.



The blow causes the head to quickly move back and forth or turn from side to side.

The movement inside the skull can cause a direct, back and forth, or rotating force to the brain.

This can stretch and damage cells, sometimes causing chemical changes in the brain.

Concussions are rarely life-threatening. Despite sometimes being referred to as a "mild" TBI, a concussion is still a TBI and can have serious effects, especially if not recognized and treated. Multiple concussions are especially dangerous.

What are common symptoms of a concussion

Symptoms of a concussion can occur right away or up to two days after the injury. They may include:

Physical

- Headache
- Sensitivity to noise and light
- Loss of balance
- Trouble walking
- Being really tired or drowsy
- Nausea or vomiting
- Vision changes

Thinking and remembering

- Trouble thinking clearly
- Trouble remembering
- Feeling slowerchanges

Social and emotional

- Being irritable or fussier than normal
- Feeling more emotional
- Feeling sad or nervous
- Being aggressive
- Hard to consologes

Sleep

- Sleeping less than normal
- Sleeping more than normal
- Trouble falling asleep



Caring for your child with a concussion

Ages 4 years and younger (continued)

What to watch for after your young child's concussion

1. Symptoms may worsen or new ones may appear over the first 48 hours.
2. Your child may not know they have symptoms until they try to do their normal activities.
3. Most children feel better within about two weeks. If your child does not, they may need to see a specialist.

What to do in the first few days

1. Have your child take it easy in a quiet environment. When symptoms are more severe:

- Limit cognitive (thinking or remembering) and physical activities to allow the brain to heal.
- Avoid excessive screen time, such as watching TV or looking at a cellphone or computer screen. Find relaxing activities at home like drawing and playing with toys.
- Slowly resume normal activity, as long as symptoms do not worsen.

2. Your child may slowly return to regular (non-strenuous) activities as they start to feel better. During this time, encourage them to:

- Spend time outside participating in activities like taking short walks.
- Get as much sleep as possible at night.
- Take fewer daytime naps or return to their daytime nap schedule (as appropriate for their age).

3. As symptoms improve, you may:

- Encourage outside time.
- Return your child to their regular schedule.
- Have your child take breaks if their symptoms worsen. If you notice any changes, call your child's doctor.

Important tips

1. **Make an appointment with your child's primary care doctor as soon as possible.** Keep the appointment even if your child starts to feel better. Your child's doctor will track their recovery and advise you on their safe return to school and sports or play activities.
2. **Avoid waking up your child at night to check on them.** Your child's brain needs to rest and get as much sleep as possible in the first few days after a concussion.
3. **Have your child eat a healthy diet and drink more clear fluids, such as water, than normal.** Even though your child may not feel like eating, offer small amounts of food and fluids every three to four hours and before bed.
4. **Give acetaminophen (Tylenol) or ibuprofen (Motrin or Advil) for pain if advised by your child's doctor.**

Helping your child safely return to day care or school

Your child may:

- Need to take a short time off from day care or school right after the concussion, but it is not necessary for a child to be 100% symptom-free before returning to school. Multiple absences from school and prolonged inactivity after a concussion are discouraged.
- Return to day care or school with accommodations even if they still have symptoms. Accommodations are changes to your child's normal schedule and activities that are supported by the school. For most children, only short-term changes are needed.

Note: Returning to day care or school does not mean returning to play. Your child should not return to play outside or go to PE class or recess until their doctor says it is OK.



Caring for your child with a concussion

Ages 4 years and younger (continued)

Helping your child safely return to sports and play

1. Your child should not return to sports and play on the same day of the injury.
2. Your child's doctor will let you know when it is OK for your child to return to sports.
3. The Children's Healthcare of Atlanta Sports Medicine team has return-to-play instructions for 11 sports on choa.org. The stages vary depending on the sport.

See the separate return-to-play instructions for more information.

When to seek help right away

If you cannot reach your doctor right away, return to the emergency department if your child:

- Has more headaches or neck pain
- Is hard to wake up
- Vomits more than two times in 24 hours
- Has unusual behavior or seems confused, restless or agitated
- Cannot think clearly or remember things
- Has slurred speech, weakness, or numbness, or does not move like normal
- Cannot recognize people or places
- Has convulsions or seizures
- Passes out

Have questions? Call the Children's Concussion Program nurse

Speak with our Concussion Program nurse for advice and help if you cannot reach your doctor. Our nurses can also help you schedule an appointment if your child needs to see a Children's concussion specialist.

1. Call **404-785-KIDS (5437) Monday through Friday from 8 a.m. to 4 p.m.**
2. Visit choa.org/concussion for more education and return-to-learn and return-to-play instructions.
3. You can also find information at cdc.gov/headsup (Centers for Disease Control and Prevention).

In case of an urgent concern or emergency, call 911.



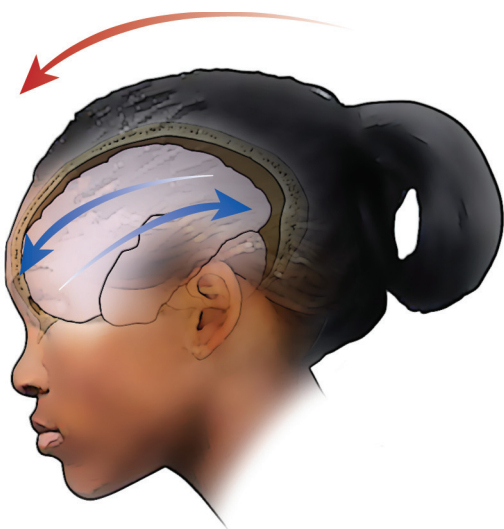
Caring for your child with a concussion

Ages 5 to 21 years

What is a concussion?

A concussion:

- Is a type of traumatic brain injury (TBI) caused by a blow to the head or another part of the body.
- **Affects how the brain functions and processes** information at the neurochemical level.
- **Is not a structural injury** to the brain, so imaging tests like a CT scan or MRI will most often look normal.



The blow causes the head to quickly move back and forth or turn from side to side.

The movement inside the skull can cause a direct, back and forth, or rotating force to the brain.

This can stretch and damage cells, sometimes causing chemical changes in the brain.

Concussions are rarely life-threatening. Despite sometimes being referred to as a "mild" TBI, a concussion is still a TBI and can have serious effects, especially if not recognized and treated. Multiple concussions are especially dangerous.

What are common symptoms of a concussion

Symptoms of a concussion can occur right away or up to two days after the injury. They may include:

Physical

- Headache
- Sensitivity to noise and light
- Loss of balance
- Trouble walking
- Being really tired or drowsy
- Nausea or vomiting
- Vision changes

Thinking and remembering

- Trouble thinking clearly
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- Being irritable or fussier than normal
- Feeling more emotional
- Feeling sad or nervous
- Being aggressive
- Hard to consolenges

Sleep

- Sleeping less than normal
- Sleeping more than normal
- Trouble falling asleep



Caring for your child with a concussion

Ages 5 to 21 years (continued)

What to watch for after your child's concussion

1. Symptoms may worsen or new ones may appear over the first 48 hours.
2. Your child may not know they have symptoms until they try to do their normal activities.
3. Most children feel better within about two weeks. If your child does not, they may need to see a specialist.

What to do in the first few days

1. Take it easy in a quiet environment. When symptoms are more severe:

- Limit cognitive (thinking or remembering) and physical activities to allow the brain to heal.
- Avoid excessive screen time, such as watching TV or looking at a cellphone or computer screen. Find relaxing activities at home like drawing and playing with toys.
- Slowly resume normal activity, as long as symptoms do not worsen.

2. Your child may slowly return to regular (nonstrenuous) activities as they start to feel better. During this time, encourage them to:

- Spend time outside participating in activities like taking short walks.
- Get as much sleep as possible at night.
- Take fewer daytime naps or return to their daytime nap schedule (as appropriate for their age).
- Do homework for 10 to 15 minutes at a time, as long as symptoms do not get worse.

At this point, your child may check their cell phone, watch TV, play video games and visit with friends for short periods of time, as long as symptoms do not get worse.

3. As symptoms improve, you may:

- Encourage outside time.
- Return your child to their regular schedule.
- Have your child take breaks if their symptoms worsen. If you notice any changes, call your child's doctor.

Important tips

1. **Make an appointment with your child's primary care doctor as soon as possible.** Keep the appointment even if your child starts to feel better. Your child's doctor will track their recovery and advise you on their safe return to school and sports or play activities.
2. **Avoid waking up your child at night to check on them.** Your child's brain needs to rest and get as much sleep as possible in the first few days after a concussion.
3. **Have your child eat a healthy diet and drink more clear fluids, such as water, than normal.** Even though your child may not feel like eating, offer small amounts of food and fluids every three to four hours and before bed.
4. **Give acetaminophen (Tylenol) or ibuprofen (Motrin or Advil) for pain if advised by your child's doctor.**

Helping your child safely return to school

Your child may:

- Need to take a short time off from school right after the concussion, but it is not necessary for a child to be 100% symptom-free before returning to school. Multiple absences from school and prolonged inactivity after a concussion are discouraged.
- Return to school with accommodations even if they still have symptoms. Accommodations are changes to your child's normal schedule and activities. Most schools require written accommodations from your child's doctor. For most children, only short-term changes are needed.

Note: Returning to school does not mean returning to sports and play. Your child should not return to PE class, recess, sports or workouts until their doctor says it is OK. .



Caring for your child with a concussion

Ages 5 to 21 years (continued)

Helping your child safely return to sports and play

1. Your child should **not** return to sports and play on the same day of the injury.
2. Your child must return to **normal schoolwork and studies before** returning to game play.
3. Your child's doctor will let you know when it is OK for your child to **return to sports**.
4. The Children's Healthcare of Atlanta Sports Medicine team has **return-to-play instructions** for 11 sports on choa.org. The stages vary depending on the sport.
5. If your child is a student athlete, it is **very important that their school is aware** of their concussion. Returning to sports too early may slow healing and increase risk of a second concussion, which has serious effects (e.g., second impact syndrome).

See the separate return-to-learn and return-to-play instructions for more information.

When to seek help right away

If you cannot reach your doctor right away, return to the emergency department if your child:

- Has more headaches or neck pain
- Is hard to wake up
- Vomits more than two times in 24 hours
- Has unusual behavior, or seems confused, restless or agitated
- Cannot think clearly or remember things
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In case of an urgent concern or emergency, call 911.



Mild head injury and concussion

Return-to-Learn Guidelines

Stage of healing	Home activity	School activity	Physical activity
Stage 1 – Your child still has many symptoms and problems.	<ul style="list-style-type: none"> Limited or minimal stimulation Allow as much sleep as possible Limit things that require your child to think, focus, reason or remember Remove any electronics and computers from your child's room Remove any activity planners and to-do lists from your child's room Give your child plenty of fluids to drink Feed small, frequent meals during the day and at bedtime Give your child plenty of carbohydrates to eat, such as whole grain breads and cereals, pasta and rice 	<ul style="list-style-type: none"> Your child may not go to school. It is typical to rest for 24 to 48 hours and monitor if symptoms improve 	See Stage 1 in next chart
Stage 2 – Your child still has some symptoms and problems.	<ul style="list-style-type: none"> Slowly increase cognitive activity (thinking and remembering) as symptoms improve Allow for enough sleep—at least eight hours Allow your child to use TV, video games, texting, tweeting and email for a short time—less than two hours a day; for example, he might have 20 minutes of brain work followed by a one-hour brain break Help your child not to stress over missed schoolwork Continue with fluids, small frequent meals and carbohydrates, as in Stage 1 As your child has less symptoms, begin adding homework in short sittings to avoid falling behind 	<ul style="list-style-type: none"> Return to school for half days Attend core classes only or have shortened class time Rest in the nurse's office between classes, as needed Your child may not take tests or quizzes Use pre-printed class notes Complete short homework assignments—work 20 minutes at a time with rest breaks in between Talk with the school nurse or teacher about academic accommodations from your doctor and create a plan Avoid very loud noises like music and noise in cafeterias, at PE and recess 	See Stages 2-3 in next chart
Stage 3 – Your child's symptoms and problems have gone away.	<ul style="list-style-type: none"> Slowly return to watching TV, playing video games and texting Allow family interactions again Continue with fluids, small frequent meals and carbohydrates, as in Stage 1 	<ul style="list-style-type: none"> Your child may gradually return to a full day of classes He may need to schedule make-up work, tests and quizzes He may take one test or quiz a day with extra time, as needed, to complete Tell the school nurse or teacher if any symptoms or problems return 	See Stages 2-4 in next chart
Stage 4 – Your child seems back to normal.	<ul style="list-style-type: none"> Your child may have near-normal home and social interactions 	<ul style="list-style-type: none"> Your child may begin to complete past assignments and become caught up 	See Stages 5 and 6 in next chart
Stage 5 – Your child may return to full activities.	<ul style="list-style-type: none"> Your child may return to normal home and school interactions with five days of no symptoms 	<ul style="list-style-type: none"> Your child may return to normal school function without the need for extra accommodations or restrictions 	See Stage 7 in next chart

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Mild head injury and concussion

Return-to-Play and Sports Guidelines

Stage of healing	Activity allowed	Examples of sports	Examples of other activities	Goal
1	<ul style="list-style-type: none"> No activity Complete cognitive and physical rest 	<ul style="list-style-type: none"> Complete physical rest 	<ul style="list-style-type: none"> Quiet time with rest Avoid groups, videos, reading, computers, video games, cellphones, noisy places 	<ul style="list-style-type: none"> Brain rest and healing BE FREE OF SYMPTOMS
2	<ul style="list-style-type: none"> Light aerobic activity 	<ul style="list-style-type: none"> 10 to 15 minutes of walking or stationary bike Light sweat on the brow Slight increase in breathing rate 	<ul style="list-style-type: none"> Walk in park or neighborhood Avoid group activities 	<ul style="list-style-type: none"> Increase heart rate to 30-40% at most
3	<ul style="list-style-type: none"> Moderate aerobic activity Light resistance training 	<ul style="list-style-type: none"> 20 to 30 minutes of jogging or stationary bike Arm curls, shoulder raises, or leg lifts with weights that can be comfortably lifted One set of 10 repetitions for each activity 	<ul style="list-style-type: none"> Supervised play Low risk activities, such as dribbling a ball, playing catch, changing directions, jumping, side-to-side slides, chasing a ball or catching a ball on the run 	<ul style="list-style-type: none"> Increase heart rate to 40-60% at most Add resistance Use eyes to track objects
4	<ul style="list-style-type: none"> Intense aerobic activity Moderate resistance training Sport-specific exercise 	<ul style="list-style-type: none"> 40 to 60 minutes of running or stationary bike Same resistance exercises with weight for three sets of 10 reps Pre-competition warm-ups, such as passing a soccer ball, throwing a football or doing ladder drills 	<ul style="list-style-type: none"> Supervised play Moderate risk activities, such as balance and agility drills No head contact activities Can sweat and breathe heavy 	<ul style="list-style-type: none"> Increase heart rate to 60-80% at most Increase resistance Mimic the sport
5	<ul style="list-style-type: none"> Controlled-contact training drills 	<ul style="list-style-type: none"> 60 to 90 minutes of time on the field, court or mat for specific drills Take part in normal practice session Contact that is normally part of the sport—only use items that do not hit back, such as a sled in football Recheck for symptoms or problems often 	<ul style="list-style-type: none"> Free play Run and jump as able Full return to PE Recheck for symptoms or problems often 	<ul style="list-style-type: none"> Mimic the sport or free play without the risk of head injury
6	<ul style="list-style-type: none"> Full-contact practice 	<ul style="list-style-type: none"> After OK from the doctor, may take part in normal training activities 	<ul style="list-style-type: none"> With parent or adult supervision, may take part in normal activities 	<ul style="list-style-type: none"> Build confidence Assess skills
7	<ul style="list-style-type: none"> Return to play 	<ul style="list-style-type: none"> Normal game play 	<ul style="list-style-type: none"> Normal playtime and activities 	<ul style="list-style-type: none"> No restrictions

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Mild head injury and concussion

Where can I get more information?

You can get more information on mild head injury and concussion from the following websites:

- American Academy of Neurology: aan.com
- American Academy of Pediatrics: aap.org
- American College of Sports Medicine: acsm.org
- Centers for Disease Control and Prevention: cdc.gov

Children's Healthcare of Atlanta has not reviewed all of the sites listed as resources and does not make any representations regarding their content or accuracy. Children's Healthcare of Atlanta does not recommend or endorse any particular products, services or the content or use of any third party websites, or make any determination that such products, services or websites are necessary or appropriate for you or for the use in rendering care to patients. Children's Healthcare of Atlanta is not responsible for the content of any of the above-referenced sites or any sites linked to these Sites. Use of the links provided on this or other sites is at your sole risk.