Boulder Community Health



What is a concussion?

A concussion is a brain injury. It is caused when the head moves quickly, and the brain is hit against the inside of its protective skull, causing nerve cells to be stretched, torn, or injured.

This usually happens by a sudden blow or jolt to the head or body, though your head does not need to hit anything for a concussion to occur. You do NOT have to be knocked out or lose consciousness to have a concussion. Most people recover from a concussion without any major complications. For some people, however, a concussion can cause emotional, cognitive (thinking), or physical problems that make it much more challenging to function normally at work or school.

How do you know if you have a concussion?

There are many signs that may indicate a person has a concussion. Some signs occur right after an injury while others may not happen for hours or days after an injury. Some symptoms may not be noticed until you try to go back to your normal cognitive or physical activity.

Diagnosing a concussion in infants and toddlers can be especially difficult since they cannot talk and will often have different symptoms than adults and older children, for example changes in eating or sleeping behaviors or increased crankiness.

Common problems seen after a concussion are listed below and may need further medical assistance:

Physical	**Thinking (Cognitive)**	**Behavioral/Emotional**
Headaches	Slowed thinking	Irritability/grouchiness
Nausea/vomiting	Trouble paying attention	Easily upset/frustrated
Dizziness/balance problems	Trouble remembering	Nervous/anxious
Low energy/run down/tired	Acting like “in a fog”	Sadness/depression
Trouble with vision/seeing	Easily confused	Acting without thinking
Sensitivity to light or noise	Decline in school performance	Personality changes
Sleep problems	Difficulty finding words	Feeling of brain/body disconnect
Changes to hearing	Decreased organization	

Recovery from a concussion:

When recovering from a concussion, your brain needs more rest to heal. You can do this by making short-term changes to your daily activities, such as reducing your workload and making time for rest breaks. As you begin to feel better, you can slowly remove these changes. **Use symptoms as your guide** to help you return to a regular routine more quickly. Be aware, this could change from day to day. It is important to remember that each concussion and each person is unique, so your recovery should be based on your own symptoms.

For children and adolescents, notify schools when a concussion injury occurs. The most recent evidenced-based research is showing that returning to school within 1-3 days after a concussion provides students with the best outcomes for recovery-both physically and academically. Too much rest can actually make healing time longer. Many schools now have supportive measures in place to help students through this process. Terms you may hear include “return to learn” and/or “return to play” (see info on back for details). For adults, consider telling your employer or school so they can watch for problems and provide extra support if needed.

When to be concerned:

Watch for exaggerated symptoms, usually within the first few days and up to 1-2 weeks after an injury (e.g. seizure, headaches that get worse or do not go away, having the “worst headache of your life”, repeated vomiting, loss of consciousness, increased confusion, restlessness, agitation, lethargy/difficult to arouse, etc.). These may mean you need to return to the emergency department.

Reasons to consider seeing a concussion specialist:

- Any of the above problems last longer than 2-4 weeks or sooner if symptoms seem especially severe.
- History of previous concussion or other brain injury.
- If your brain injury is more severe (e.g. bleeding seen on imaging scan).

Below are guidelines published by an international body of professionals on concussion management. Use this as a guide until you can follow up with your primary care provider and/or a provider in your area who is trained in concussion. Your school district and/or healthcare provider will then guide you in this process.

Graduated Return to School Strategy (Return to Learn):

Stage	Aim	Activity	Goal of each step
1	Daily activities at home that do not give the child symptoms	Typical activities of the child during the day if they do not increase symptoms (e.g. reading, texting, screen time). Start with 5-15 minutes at a time and build up.	Gradual return to typical activities
2	School activities	Homework, reading, or other cognitive activities outside the classroom.	Increase tolerance to cognitive work
3	Return to school part-time	Gradual introduction of schoolwork. May need to start with a partial school day or with increased breaks during the day.	Increase academic activities
4	Return to school full-time	Gradually progress school activities until a full day can be tolerated.	Return to full academic activities and catch up on missed work.

Graduated Return to Sport (RTS) Strategy (Return to Play):

An initial period of 24-48 hours of both relative physical rest and cognitive rest is recommended before beginning the RTS progression. There should be at least 24 hours (or longer) for each step of the progression. If any symptoms worsen during exercise, the athlete should go back to the previous step. Resistance training should be added only in the later stages (stage 3 or 4 at the earliest). If symptoms are persistent (e.g. more than 10-14 days in adults or more than 1 month in children), the athlete should be referred to a healthcare professional who is an expert in management in concussion.

Stage	Aim	Activity	Goal of each step
1	Symptom-limited activity	Daily activities that do not provoke symptoms.	Gradual re-introduction of work/school activities
2	Light aerobic exercise	Walking or stationary cycling at slow to medium pace. No resistance training.	Increase heart rate
3	Sport-specific exercise	Running or skating drills. No head impact activities.	Add movement
4	Non-contact training drills	Harder training drills (e.g. passing drills). May start progressive resistive training.	Exercise, coordination, and increased thinking
5	Full contact practice	Following medical clearance, participate in normal training activities.	Restore confidence and assess functional skills by training staff
6	Return to sport	Normal game play.	

This material is for informational purposes only. It does not replace the advice or counsel of a physician or health care professional. BCH makes every effort to provide information that is accurate and timely, but makes no guarantee in this regard. You should consult with, and rely on the advice of your physician or health care professional.

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