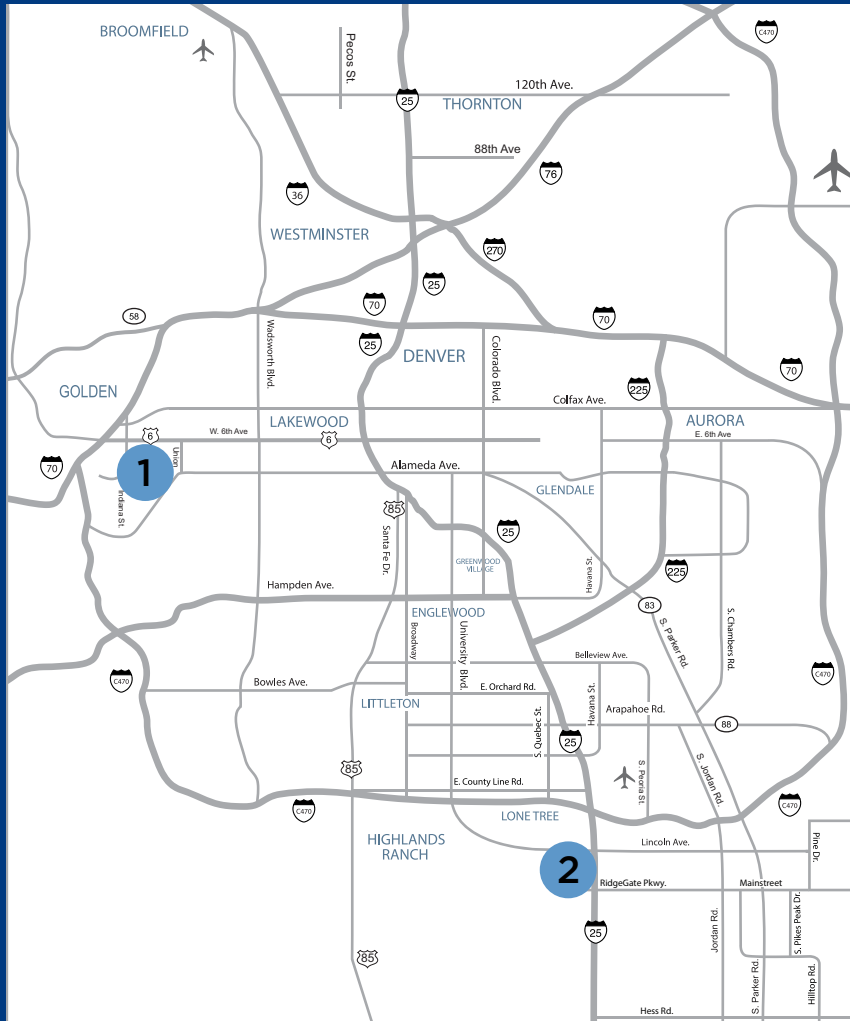




Roadmap to Concussion Recovery



Locations



1 Rocky Mountain Pediatric OrthoONE at Red Rocks Medical Center
400 Indiana St., Suite 350
Golden, CO 80401
(303) 861-2663

2 Rocky Mountain Pediatric OrthoONE at Sky Ridge Medical Center
10107 RidgeGate Pkwy., Suite 310
Lone Tree, CO 80124
(303) 861-2663

Rocky Mountain Pediatric OrthoONE Center for Concussion

At the Center for Concussion, we provide coordinated, patient-centered care for ages 5-20.

We know that concussion recovery can sometimes be complicated, so we have a team of providers who can support your recovery. Our physicians will do a detailed evaluation to confirm the diagnosis and prescribe medical care. Our psychologist can communicate with your school to support your academic adjustments and will help with the stress, anxiety or sadness that you might feel. Our concussion rehabilitation program, "PACER," has physical therapists who are experts at treating the complications that may develop from a concussion. All of us here at the Center for Concussion stay up-to-date with current treatments and often update our treatment program based on new information. We will coordinate with specialists who may be needed during a concussion recovery.





Your road map to concussion recovery

Concussions are one of the most common injuries in kids and teens. You may get a concussion from playing sports or from being in an accident. It's important for every parent and athlete to know how to recognize a concussion and how to help recover from a concussion.

What is a concussion?

A concussion is a brain injury that happens when you get hit in the head or the body and it shakes your brain. You won't see any bruising or bleeding, but the concussion hurts your brain and makes it work differently. Because the brain is such a complicated organ, every concussion can be different.

How do I know if I have had a concussion?

A concussion is diagnosed with signs and symptoms. A symptom is something that the patient is feeling. A sign is something that someone else can see in the patient.

Here is a list of signs and symptoms that might happen with a concussion. If you have had an impact to your head or body and have even one sign or one symptom, the best thing is to see a medical provider to be checked for a concussion.

Signs/Symptoms of Concussion

Not everyone will experience all of these symptoms

Physical Symptoms

- Headache or head pressure
- Balance changes
- Dizziness
- Double or blurry vision
- Seeing "stars"
- Nausea and/or vomiting
- Sensitivity to light and/or noise



Physical Signs

- Looks glassy eyed or dazed



Emotional Symptoms

- Feels sad, irritable or depressed
- Feels nervous or anxious
- Feels more emotional



Emotional Signs

- Personality change
- Inappropriate emotions
- Seems very irritable

Sleep or energy Symptoms

- Fatigue or low energy
- Having a hard time falling asleep or staying asleep



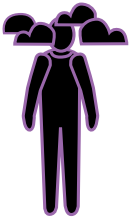
Sleep/Energy Signs

- Drowsy
- Sleeping more or less than usual



Cognitive (Thinking) Symptoms

- Mentally foggy
- Feels slowed down or off
- Difficulty remembering things
- Hard to concentrate
- Distracted easily



Cognitive Signs

- Repetitive comments or questions
- Speech slowed or having difficulty using the right word
- Seems confused or disoriented



Do I need a picture of my brain?

A picture of the brain doesn't help to diagnose a concussion. If you have a concussion, your picture is normal because the injury is so small you can't see it with a normal CT or MRI. CT scans have radiation, so we try not to order these for everyone. If you go to the emergency room (ER) to see if you've had a concussion, the ER provider will follow a checklist to decide if you need a CT scan. But, you'll only need a CT scan if there are signs or symptoms that make us worry that there might be bleeding or bruising in the brain, which is a different injury from a concussion.

How long does it take to get better from a concussion?

Everyone is different, and recovery can vary for different people. Most adults will recover in about 10 days. However, teens have different brains and they take longer to recover: on average 3-4 weeks. We aren't sure how long the average concussion recovery is for younger kids, but they may last longer than adults. Almost everyone will fully recover after a concussion, but a few people might have a longer recovery or may have permanent problems from a concussion.

Who might take longer to recover from a concussion?

Patients who keep getting concussions, who have ADHD or learning difficulties, who experience migraine headaches or have anxiety and/or depression may have a harder time recovering from a concussion.



What can I do to help myself get better?

Rest

We used to recommend strict rest when someone was recovering from a concussion. We have learned that strict rest often doesn't help and may make things worse. Newer studies show that some rest just after the injury helps, but you don't have to shut yourself in a dark room. As soon as you feel a little better, you can be up and about in the house, spending time with your friends and family. Listen to your body and take rest breaks whenever you need.

School

Within 2-3 days of getting a concussion, most teens and kids can return to school even if they are still having some symptoms as long as the school is able to provide "adjustments" during the recovery. It's important to try to get back to school as soon as possible so you don't miss too much. Talk to your school nurse, psychologist, counselor and/or teachers so that they know you've had a concussion. Ask them to start their "concussion protocol" so that you can get academic help during your concussion recovery. Parents of elementary and middle school students can make this call, but high school students will need to meet with their counselor and teachers themselves so they are advocating for what they need during the recovery.

You can go to OrthoONEDenver.com for more information on returning to school during your concussion recovery and suggestions for adjustments. Remember that you can't go back to sports until you can attend full school and do all of your schoolwork.

Electronics Screens

If you are having any eye tracking issues from your concussion, the screens on electronics may make your symptoms worse. Try to limit how much time you spend on smart phones and computers, especially if it increases your symptoms. Avoid all video games until your brain has healed.

Sleep

Good sleep is essential to helping your brain heal. Many patients have sleep problems when they are recovering from a concussion. For the first few days, you will probably be more tired and it's ok to sleep whenever your body is telling you to sleep. After the first few days, it's important to try to get on a regular sleep schedule. Get rid of daytime naps after the first week. Go to our website for more tips on how to sleep better during your recovery.

OrthoONEDenver.com/service/concussion

Exercise

After resting for a few days, it can help if you start some safe, light cardio exercise. Work with your medical provider to decide when to start exercise and what to do. Even if you don't normally exercise, it's important to incorporate exercise into your recovery, especially after 2-3 weeks.

It is much easier to injure your brain when it hasn't yet healed from the concussion so it's important to not go back to sports or any activities where you could hit your head again before you are cleared from your concussion. Exercising for recovery is not the same thing as returning to your sports; you should only go back to your prior sports under the supervision of a qualified medical provider.

Social activities

Starting to feel like life is normal again can really help the concussion recovery. Rest and a quiet environment may help recovery in the beginning, but as symptoms begin to improve, connecting with friends socially can be important. When you connect with friends by phone or in-person, let your symptoms be the guide. For younger kids, this needs to be closely supervised and cut off if symptoms get worse. For older kids it's better to talk or have short visits with friends in person rather than spend a lot of time on the phone or texting.

Hoping is Coping

When children are recovering from a concussion, they can feel frustrated because there are restrictions from normal daily living such as playing sports or recreational activities. Remember, almost all concussions will heal. Having the mindset of "I'm getting better" can be a powerful way of getting through the concussion recovery and has been shown to be very helpful in managing a concussion. Other ways to cope with the concussion recovery include "self care," seeking emotional support from family and friends, and/or learning tools to manage emotional distress from a psychologist or behavioral health professional. You can go to our website for ideas on how to practice "self care". OrthoONEDenver.com/util/documents/pediatrics/Self-Care-RMPOO.pdf



Nutrition and Hydration

What you do and don't put in your body can make a difference in how your brain heals: Your brain has to have the right fuel. Drink lots of water and avoid caffeinated and sugary beverages like soda. Eat healthy foods such as avocado, olive oil, nuts and fish. Avoid toxic fats that come in processed food and fast food. Healthy eating means a good recovery.

We live in Colorado where marijuana is legal so sometimes teens think it's no big deal. Marijuana is a big deal and can cause cognitive (thinking) problems and may delay your concussion recovery. It's important to avoid alcohol or drugs of any kind.

Medical Care

A concussion is a brain injury. Your brain is the most complicated organ in your body and sometimes the recovery doesn't go as expected. It's very important for you to seek medical care during your recovery, either with your primary care provider or with us here at the Center for Concussion.

Because we know that the recovery can sometimes be complicated, we have a team of providers who can support your recovery. Our psychologist can work with your school to support your academic adjustments and can help with the stress, anxiety or sadness that you might feel. Our concussion rehabilitation program, "PACER," has physical therapists who are experts at treating the complications that may develop from a concussion. All of us here at the Center for Concussion work hard to stay up-to-date with current treatments and update our treatment program based on new information.

At the Center for Concussion, we provide coordinated, patient-centered care. We will coordinate with specialists who may be needed during a concussion recovery, from neurologists to neuro-optometrists.

How do I know that my concussion has healed and when I can get cleared for sports?

To go back to sports you need to be "cleared from your concussion," which means that a medical provider (MD, DO, NP or PA) needs to check you out to make sure that the concussion has healed. Right now, the only way that we can tell if your concussion has healed is by looking at three things: your symptoms, a physical exam and cognitive function.

Symptoms: You have to feel like you are back to your normal self

Physical exam: Your medical providers will check things like balance, eye movements and coordination and do a neurologic exam to make sure that it looks normal.

Cognitive function: You have to be thinking and learning like your old self. Sometimes we will use a computer test to measure how your brain is working. We may also ask your teachers and parents how you are doing in school.

What if I go back to sports before my brain has healed?

It could be very dangerous to return to sports too soon because you could have another injury to your brain. A second injury when still recovering from a concussion can cause symptoms to worsen and will most likely make your concussion last longer. It could also increase the chance of having permanent problems such as chronic headaches, learning and memory difficulty, anxiety and depression and other neurological problems.

The quickest way to get back to your sport is to be honest about your symptoms, take time to recover and see a qualified medical provider to get cleared from the concussion. After all, it's your brain and you only have one!



Graduated Return to Sports Steps

The Consensus Statement on Concussion in Sport recommends that athletes go through several exercise challenges to make sure the brain has healed before returning to sports. Refer to our website for return to sport guidelines — OrthoONEDenver.com/service/concussion. Your medical provider will tell you when it's ok to start this process and what to do for each step. This process usually takes about four days in adults, but may last longer in younger kids or teens. In our clinic, we will sometimes also use a treadmill test to help us figure out if the concussion has healed. You should work with your medical provider on the best way to challenge your body to clear you from your concussion.

Athletic Trainers

Certified athletic trainers are medical providers who are trained to recognize sports related injuries and help with recovery. If you are at a school or with a sports team who has an athletic trainer, you are very lucky. Athletic trainers help make sports safer for youth athletes. Make sure you meet with your athletic trainer and work with them during your recovery. In Colorado, your athletic trainer can't clear your concussion, but they are very good at helping to identifying concussions during sporting events and can help support the recovery and help athletes through the graduated return to sport steps.



Sports and Concussion Risk

Organized sports are good for kids. Kids who participate in sports grow up to be healthier adults. Our goal at Rocky Mountain Pediatric OrthoONE Center for Concussion is to keep kids safely playing sports. However, there are times when we have to admit that a certain sport may be too dangerous for someone because of the injuries they have had. There are no strict rules about when to retire an athlete from a sport because of concussion. We will have a discussion about sports with every athlete whom we see for a concussion. If you have had more than one concussion, have had a long or difficult recovery, or have risk factors in your medical history, you should consider seeing our concussion specialists. Multiple concussions can add up and may cause long-term damage. We still need more research to help us understand the long term effects.

Know your Colorado State Concussion Law

The Jake Snakenberg Youth Concussion Act went was signed into law in Colorado in 2011.

It covers kids and teens from ages 11 – 19 and requires the following:

1. Coaches need to have annual education on how to recognize a concussion
2. Athletes suspected of having a concussion must be removed from sports participation
3. Athletes who are removed from sports participation are required to have medical clearance before they are allowed to return to sports participation. Medical clearance must be provided by an MD, DO, PA, NP or doctoral level psychologist with concussion training.

Who is my concussion team?



Sue Kirelik, MD
Medical Director and
Concussion Specialist



Michele Chetham, MD
Concussion Specialist



Jin Lee, Psy D
Clinical Psychologist



Inger Brueckner, PT
Physical Therapist,
Vestibular Specialist



Dona Martin, PT
Physical Therapist,
Vestibular Specialist

McCrory P, Meeuwisse W, Dvorak J, et al. Consensus statement on concussion in sport – the 5th international conference on concussion in sport held in Berlin, October 2016. *Br J Sports Med* 2017 Jun;51(11):838-847. PMID 28446457

<https://www.aspeninstitute.org/>

Rocky Mountain Hospital for Children ER Locations





Pediatric Orthopedic Services

- Pediatric Orthopedics
- Youth Sports Medicine
- Concussion
- Scoliosis and Spine
- Musculoskeletal Disorders
- Common Childhood Injuries



Visit OrthoONEDenver.com to schedule an appointment online.