

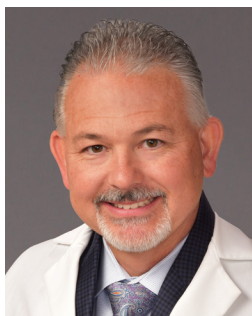


Sports Concussion Treatment Guide

Doctors Who Treat Sports Concussion



Stacy
Majoras, DO



David C. Waterson,
DO



James T. VanHuysen,
DO



Thomas Goodwin,
DO, FAOASM



Robert
J. Baker, MD, PhD

To make an appointment, contact:

 **BRONSON**
Sports Medicine
Specialists

315 Turwill Lane
Kalamazoo, MI 49006
(855) 618-2676

bronsonhealth.com/sportsconcussion



Welcome to the Bronson Sports Medicine Concussion Clinic

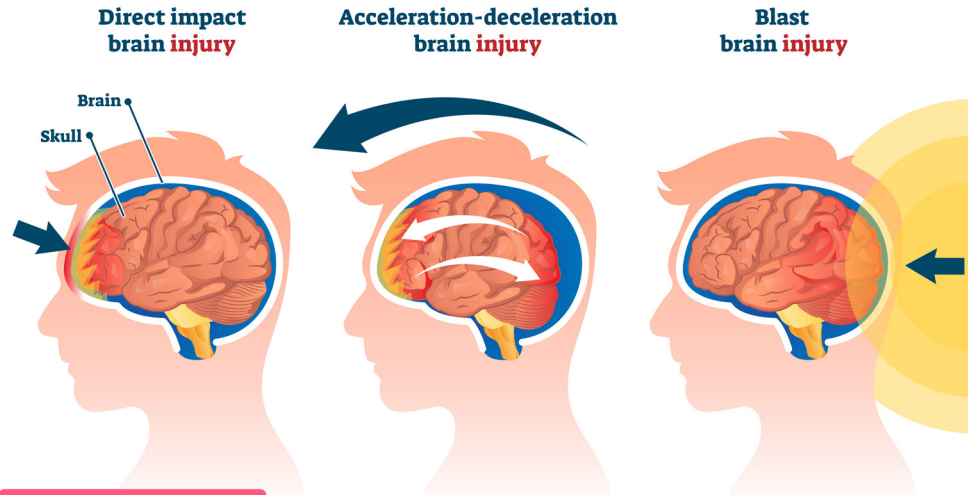
Your brain means the world to us.

Our mission at Bronson Sports Medicine is to educate and guide you on your path to health and sport. Our team of concussion specialists are here to help. Our network consists of certified athletic trainers, physical therapists, primary sports medicine physicians, neurologists and a dedicated clinical staff.

Please do not hesitate to contact us with any questions or concerns that may arise during your road to recovery. We know this can be a difficult and confusing time. We are here to help. Thank you for making Bronson your sports concussion provider.

CONCUSSION

A concussion is a traumatic **brain injury** that affects your brain function



CONCUSSION SYMPTOMS

- Headache or a feeling of pressure in the head
- Temporary loss of consciousness
- Confusion or feeling as if in a fog
- Amnesia surrounding the traumatic event
- Dizziness or "seeing stars"
- Ringing in the ears
- Nausea
- Vomiting
- Slurred speech
- Delayed response to questions
- Appearing dazed
- Fatigue

What is it?

A concussion is a group of symptoms caused by a trauma to the head. It will resolve with time. A concussion is a brain injury common to many sports, especially contact and collision sports. American football, hockey, wrestling and soccer athletes have a higher risk of getting a concussion. Athletes in all sports can have this injury. Concussions occur in many situations. Athletes may fall and hit their heads against the ground or hit each other directly during sports. Concussions happen when there is a direct blow to the head, forceful rotation of the head and neck, or both. These injuries can cause a loss of consciousness. Most concussions do not cause loss of consciousness. Because of this, some people have concussions and don't know it.

The diagnosis of concussion is made by a health care provider based on the physical examination and history. A health care provider may include: a certified athletic trainer, nurse practitioner, physician's assistant, or physician. The provider should know and feel comfortable with the management of concussions. The athlete may choose to see a specialist. The concussion exam has many parts and may be repeated for hours to weeks as the injury changes.

What happens with a concussion is not fully understood. It is most likely related to forces delivered to the brain causing stretching of the nerves in the brain, leading to multiple symptoms. This leads to increased use of fuel and decreased blood flow that causes loss of energy to the brain.

Symptoms

Symptoms of a concussion can be subtle. They may not occur until a few days after the injury. Common symptoms include headache, dizziness, nausea, irritability and trouble concentrating. Kids and young adults in school might notice that their symptoms become worse when they try to read or do homework. Exercise also tends to make symptoms worse. The force of the injury does not always match how bad the injury might be. Sometimes athletes have minor head injuries with symptoms that last for a long time.

Physical		Thinking	Emotional	Sleep
Headaches	Sensitivity to light	Mentally foggy	Irritability	Drowsiness
Nausea/ Vomiting	Sensitivity to noise	Problems concentrating	Sadness	Sleeping more than usual
Fatigue	Numbness/Tingling	Problems remembering	Feeling more emotional	Sleeping less than usual
Visual problems/ Dizziness	Balance Problems	Feeling more slowed down	Nervousness	Trouble falling asleep

Sports Medicine Assessment

Concussions are serious injuries. It is important to properly diagnose a concussion soon after it happens. A sports medicine physician will ask an athlete questions about his or her symptoms, and perform a physical exam. The exam includes:

- Testing the athlete’s memory, balance and strength.
- Checking for a more severe head injury.
- Reviewing any symptoms noticed by the athlete.

Imaging, like a computed tomography (CT) scan, is only needed if the doctor thinks it is needed to check for head injuries such as a brain bleed or skull fracture. Brain MRI is also not used in the evaluation of concussion but may be needed in cases with longer healing times.



The concussion assessment starts on the field. Often, there will be a certified athletic trainer present for practices or games of contact sports. If any of the following symptoms are reported or seen, the athlete should stop playing right away:

- Loss of consciousness (LOC)
- Seizure, tonic posturing
- Gross motor instability
- Confusion
- Amnesia

The athlete may have a more serious head injury if they have:

- A prolonged LOC
- Severe worsening headache
- Repeated vomiting
- Declining brain or mental status
- Focal neurological deficit
- Suspicion of cervical spine injury.

If the health care professional checks the athlete and they are found to NOT have a concussion, they should be safe to keep playing.

After an athlete is evaluated on the playing field and determined to have a concussion, the athlete should be sent to a health care provider qualified to care for a concussion. During the athlete's office visit the practitioner will perform a complete history and physical exam. They will review details of injury, brain functioning, sleep/wake changes, eye function, balance function, walking, neurologic exam, and a neck examination. A video of the injury can be helpful in detecting the type of injury, severity of injury, and the athletes' response.

If computer testing (IMPACT) was done prior to injury, this may be repeated. Computer testing evaluates your baseline memory, recall, and reaction times. This testing can be helpful when returning athletes to play.

Management of Concussion

Most concussions improve with time and rest. Studies report that concussion symptoms improve in 80-90 percent of teenagers and adult athletes within 2 weeks. In younger athletes, recovery may take longer. These numbers are averages and each brain is different. It is important to avoid athletic activities immediately after a concussion while symptoms are still present. Athletes should not return to play on the same day of a concussion. Athletes should be evaluated by a healthcare provider for any suspected concussion. They should be re-evaluated during recovery and before returning to their sport.

Treatment

An athlete may need 24 to 48 hours of brain and physical rest followed by a gradual increase in activity. You may be able to advance your activity if you are feeling better. Limited activity including activities of daily living and non-contact aerobic exercise may begin after a period of brain and physical rest, if you have decreased symptoms.

Other members of the health care team may help in your management of concussion.

- Physical therapy may be needed for neck and balance problems, this is called vestibular therapy. The therapist will teach you exercises to help manage your symptoms.
- Medicine may be prescribed for headaches or to help manage other symptoms. Please tell your doctor of any other medicine you are taking: prescribed, or over the counter, or illicit. Do not stop taking medicine prescribed by another doctor.
- A sports psychologist or counselor may help with symptoms like sadness, irritability and anxiety. Counselors can be very helpful if the athlete is struggling with their injury or returning to the sport.
- Athletic trainers to help with return to play.
- An eye doctor may help with any vision issues.

How to get started after a concussion

Sleep

Sleep is the most important part of healing. The brain heals best when you get enough good quality sleep. Try not to take naps during the day. If you need to nap during the day within the first 3 days, limit your nap to less than 1 hour. After 3 days, you should no longer be napping. If you can't sleep at night, stop napping during the day. If you are not able to sleep consider taking Melatonin 3-5 mg before bed. You may take Melatonin with Tylenol or Motrin. Follow these tips to assist with good sleep.

1. Keep a regular bed time and wake time within a 30 minute window (i.e.: 9 -9:30 pm to 8 – 8:30am).
2. Try to get 8-10 hours of uninterrupted sleep.
3. Only sleep in bed. If reading, watching TV or eating get up and go somewhere else.
4. Do not eat, drink, or exercise within 1 hour of bedtime.
5. Avoid caffeine after noon.
6. Create a nighttime routine – 15 minute routine you do every night to tell the body it's preparing for sleep.
7. More tips for sleep can be found at <https://www.sleepfoundation.org/articles/sleep-hygiene>.

Eating and Drinking

Try to eat at least 3 healthy meals a day even if you're not hungry.

1. The brain needs a balance of carbohydrates, protein, and fats to heal.
2. You may find it is easier to eat snacks instead.
3. If you experience any vomiting call the office at (855) 618-2676. This may be due to the concussion or illness.
4. Drink plenty of fluids to stay hydrated.

Screen time

1. Avoid screen time as much as possible. Looking at TV and other screens may increase your symptoms.
2. Limit texting to emergencies only. Make phone calls instead.
3. Use a blue light filter for screens, especially cell phones.
4. If classes are on the computer, have the information printed for you instead.

Medicines

You may need to take medicine for pain. Your provider may tell you to take:

1. Ibuprofen (Motrin, Advil) - do not take within 48 hours of injury.
2. Naproxen (Aleve) - do not take within 48 hours of injury.
3. Acetaminophen (Tylenol)
4. May take melatonin with pain medicines (ibuprofen/Aleve and/or Tylenol) if needed to help sleep.

Activity/Sports

1. May start light cardiovascular activity such as biking, walking, or swimming when you symptoms improve.
2. NO ball sports or high risk activities (trampolines, outside biking without helmet) – hockey pucks are considered a “ball”
3. No formal organized sport activity until you have no symptoms
4. No weight lifting until progressed by certified athletic trainer
5. Return to full sporting activity will be managed by a certified athletic trainer, parent, coach or doctor

Return to Learn

The return to learn process is the first step when returning to normal daily activities for most student athletes. Returning to school may require using academic adjustments (see Table 1). Follow the steps below in order for the process to proceed smoothly and quickly.

1. Alert school staff of the injury and start a school plan right away.
2. To start mental activities at home find a quiet, comfortable place to work. If you are able to study for 30 minutes straight without having symptoms, you may be ready to go back to school.
3. When you return to school, start with a half day at a time. You can switch between mornings and afternoons. If you experience symptoms while at school, you should lie down or go home. If you complete 2 half days at school without symptoms, you can try a full day of school without after school activities. Be sure to check in with your certified athletic trainer when you return to school.
4. Mental activity at school should be done as tolerated. If you wake up with severe symptoms you should not go to school. If symptoms get worse while at school, find a place to rest. If symptoms do not get better, go home. If symptoms get better with rest, go back to class.
5. You may need extra time to finish assignments or tests. Please allow yourself to make up work as you heal the brain in an appropriate time frame. You may need assignments printed to avoid increased screen time during school and homework.
6. When you are able to go to 2 days of school in a row without symptoms, you may start the return to sport activities. Your certified athletic trainer or physician will guide you back to sporting activities following the “Return to Play” guidelines.
7. You should also focus on optimizing your health and sleep so common symptoms do not delay your return to learning or sport
8. Dehydration, poor sleep, and poor diet can lead to several common symptoms so remember to stay hydrated, focus on good sleep hygiene, and eat a well-balanced diet.



Table 1. Return to Learn / Academic Accommodations

Communication and steps to return to school
• Notify school personnel of injury
• Get consent for communication between medical and school teams.
• Name a point person to monitor student’s progress related to academics, recovery and coping with injury. This person will communicate with medical team. A school health professional, guidance counselor, or athletic trainer may be the point person.
• Develop plan for missed assignments and tests.
• Adjust schedule for reduced or modified attendance, if needed.

Classroom Adjustments	School Environment Adjustments
• Breaks as needed during school day	• Allow the use of headphones or ear plugs to reduce noise sensitivity
• Reduce in-class assignments and homework	• Allow the use of sunglasses or a hat to reduce light sensitivity
• Allow increased time for completion of assignments, projects and testing	• Limit the use of electronic screens or adjust screen settings, including font size, as needed
• Delay exams until student is prepared and symptoms do not interfere with testing	• Allow student to leave class early to avoid crowded hallways
• Allow testing in a separate, distraction-free environment	• Avoid busy, crowded or noisy environments – music room, hallways, lunchroom, vocational classes and assemblies
• Provide preprinted notes or allow peer note taker	
• Avoid high risk or strenuous physical activity	

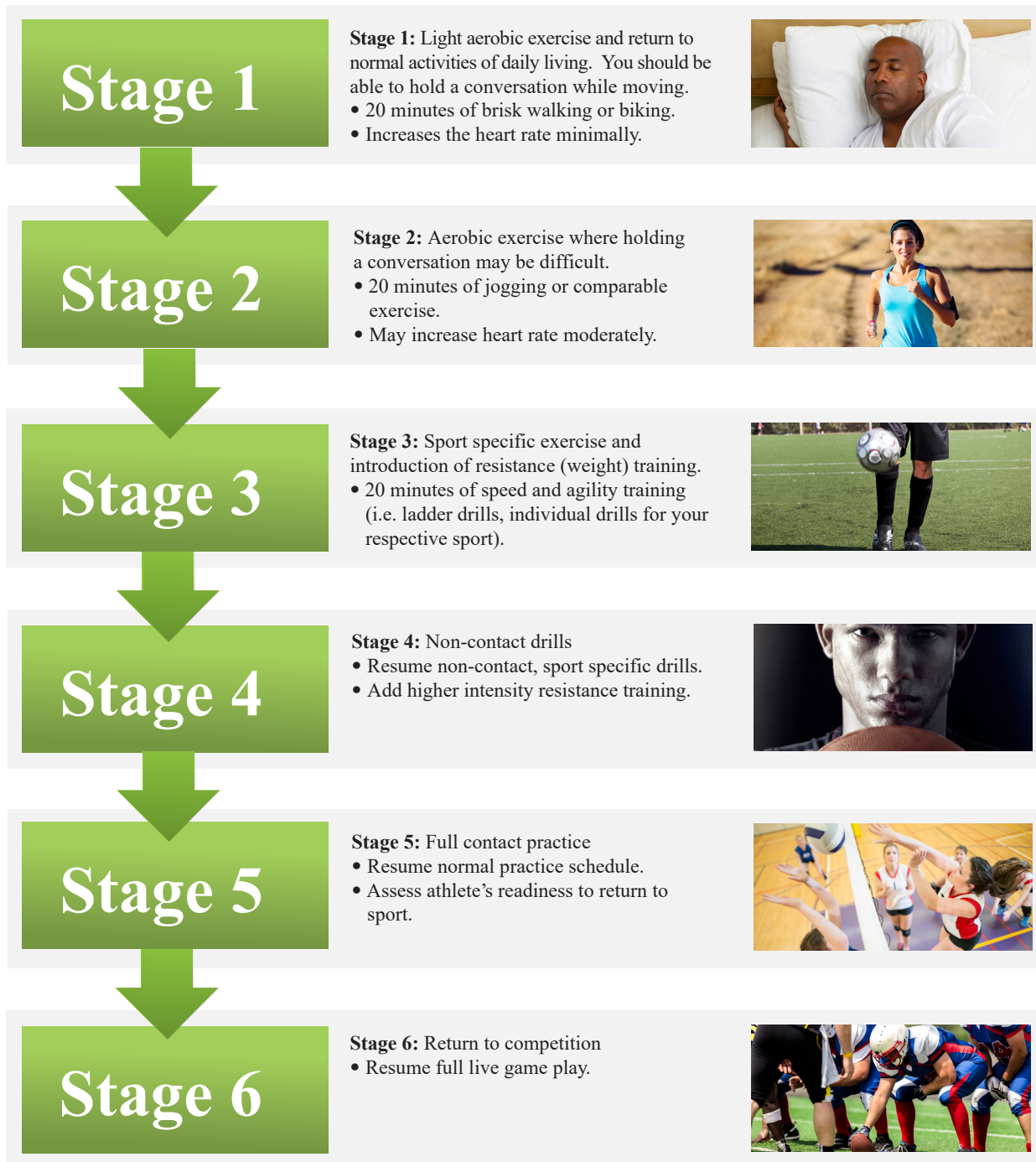
Return to Sport

Symptoms related to concussion should be resolved before returning to sport. Return-to-play involves a gradual, stepwise increase in physical exercise and sport-specific activities. This must happen without return of symptoms before the return to live play with contact. Please see Figure 1.

In general, each stage should be at least 24 hours without return of symptoms before moving to the next stage. The return to sport path should be directed by a certified athletic trainer. However, a parent or coach with proper instruction may also guide the student athlete.

Figure 1. Six Stages of Return to Play after a Concussion

Do not start stage 1 until you are symptom free. After each stage, if you are still symptom-free, move to the next stage. If your symptoms return, do not proceed to the next stage until you can be symptom free at the current stage for at least 24 hours.



Risks Related to Concussion

Short-Term Risks

Athletes who continue to play right after a concussion risk increasing symptoms, worsening the injury, and longer recovery. Athletes who return to sport before full recovery are at increased risk of repeat concussion. “Second impact syndrome” is rare and controversial. Second impact syndrome happens when the brain swells quickly shortly after a person suffers a second concussion before symptoms from the first concussion have ended. It is often fatal. If a person survives, they often are very disabled for life.



Long-Term Risks

The long term risks of concussion are not fully known. Some diseases such as chronic traumatic encephalopathy (CTE) have been linked to concussions. CTE describes damage done to the brain repeatedly early in a person’s life.

Persistent Concussion Symptoms

If symptoms last longer than the expected recovery time frame then symptoms are considered persistent. Symptoms do not mean there is ongoing concussion injury to the brain. Until symptoms have resolved err on the side of caution as the brain heals.

Disqualification from Sport

There is no evidence for stopping an athlete from ever returning to the sport after a concussion. There is not a set number of concussions that would indicate an athlete should retire from the season or sport at this time. You can talk to your doctor about this.

Injury Prevention

Athletes involved in contact and collision sports are at higher risk for concussions. Proper fitting equipment and proper sport technique (tackling, for instance) may decrease the risk of concussions. Although proper fitting helmets can decrease the risk of concussion, they do not prevent concussions. Helmets are designed to prevent skull fractures and major trauma; not to prevent concussion. Rule changes, enforcement of current rules, technique changes, neck strengthening, and improved equipment have been the focus for prevention.

Be careful about equipment that is marketed to reduce concussion risks. There is little research to support these claims. There is conflicting evidence regarding mouth guards and concussion reduction. They should primarily be used for preventing dental trauma.

Common Myths of Concussion

Myth: Your child should be woken up every few hours after a concussion to check symptoms.

Fact: To help your child's brain heal, they need as much sleep as possible. Waking your child up every few hours disrupts this. There is no need to wake your child to check for symptoms.

Myth: My child's CT or MRI scan was negative. This means that my child does not have a concussion.

Fact: MRIs and CT scans are used to detect damage such as bleeding or skull fractures. With concussions, there typically isn't any structural damage to the brain. The changes that happen to the brain with a concussion cannot be seen on a MRI or CT scan.

Myth: A person has to lose consciousness or blackout to have a concussion.

Fact: Most people who are diagnosed with a concussion do not lose consciousness or black out. Only about 1 out of every 10 people who are diagnosed with a concussion loses consciousness.

Myth: Children recover from concussions faster than adults.

Fact: Since the brains of children and teenagers are still growing, their brains take longer to heal when compared to adults.

Myth: Concussions only happen to boys who play football.

Fact: Concussions can happen in any sport, to boys or girls. Concussions also happen to people other than those who play sports. People can get a concussion after being in a car accident or falling and hitting their head.

Concussion Symptom Log Sheet (see next page)

To help your physician or athletic trainer assess your progress, please complete the attached log sheet.

Each day, you will need to rate each of the symptoms listed with a number between 0 and 6. If you are not having any evidence of the symptom listed, put a zero down. If you are having a symptom, rate it between 1 and 6 with 6 being really severe. You do not need to total the number you put on the log.

Concussion Symptom Log Sheet

Name:

Sport:

Date of Injury:

Symptoms	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
Headache														
“Pressure in Head”														
Neck Pain														
Nausea or Vomiting														
Dizziness														
Blurred Vision														
Balance Problems														
Sensitivity to light														
Sensitivity to noise														
Feeling slowed down														
Feeling like in a “fog”														
‘Don’t feel right”														
Difficulty concentrating														
Difficulty remembering														
Fatigue or low energy														
Confusion														
Drowsiness														
Trouble falling asleep														
More emotional														
Irritability														
Sadness														
Nervousness														
Total Symptoms														

Symptoms are based on a scale from 0 – 6. 0 = No Symptoms, 6 = Severe Symptoms

If you have questions about sports concussion or would like to make an appointment:

Call **(855) 618-2676**

To obtain additional information, scan this QR code or visit bronsonhealth.com/sportsconcussion.

