

# Concussion

## INFORMATION SHEET



This sheet has information to help protect your children or teens from concussion or other serious brain injury. Use this information at your children's or teens' games and practices to learn how to spot a concussion and what to do if a concussion occurs.

### What Is a Concussion?

A concussion is a type of traumatic brain injury—or TBI—caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move quickly back and forth. This fast movement can cause the brain to bounce around or twist in the skull, creating chemical changes in the brain and sometimes stretching and damaging the brain cells.

### How Can I Help Keep My Children or Teens Safe?

Sports are a great way for children and teens to stay healthy and can help them do well in school. To help lower your children's or teens' chances of getting a concussion or other serious brain injury, you should:

- Help create a culture of safety for the team.
  - Work with their coach to teach ways to lower the chances of getting a concussion.
  - Talk with your children or teens about concussion and ask if they have concerns about reporting a concussion. Talk with them about their concerns; emphasize the importance of reporting concussions and taking time to recover from one.
  - Ensure that they follow their coach's rules for safety and the rules of the sport.
  - Tell your children or teens that you expect them to practice good sportsmanship at all times.
- When appropriate for the sport or activity, teach your children or teens that they must wear a helmet to lower the chances of the most serious types of brain or head injury. However, there is no "concussion-proof" helmet. So, even with a helmet, it is important for children and teens to avoid hits to the head.



**Plan ahead.** What do you want your child or teen to know about concussion?

### How Can I Spot a Possible Concussion?

Children and teens who show or report one or more of the signs and symptoms listed below—or simply say they just "don't feel right" after a bump, blow, or jolt to the head or body—may have a concussion or other serious brain injury.

#### Signs Observed by Parents or Coaches

- Appears dazed or stunned
- Forgets an instruction, is confused about an assignment or position, or is unsure of the game, score, or opponent
- Moves clumsily
- Answers questions slowly
- Loses consciousness (even briefly)
- Shows mood, behavior, or personality changes
- Can't recall events *prior to* or *after* a hit or fall

#### Symptoms Reported by Children and Teens

- Headache or "pressure" in head
- Nausea or vomiting
- Balance problems or dizziness, or double or blurry vision
- Bothered by light or noise
- Feeling sluggish, hazy, foggy, or groggy
- Confusion, or concentration or memory problems
- Just not "feeling right," or "feeling down"

**Talk with your children and teens about concussion.** Tell them to report their concussion symptoms to you and their coach right away. Some children and teens think concussions aren't serious, or worry that if they report a concussion they will lose their position on the team or look weak. Be sure to remind them that *it's better to miss one game than the whole season.*



## CONCUSSIONS AFFECT EACH CHILD AND TEEN DIFFERENTLY.

While most children and teens with a concussion feel better within a couple of weeks, some will have symptoms for months or longer. Talk with your children's or teens' healthcare provider if their concussion symptoms do not go away, or if they get worse after they return to their regular activities.

### What Are Some More Serious Danger Signs to Look Out For?

In rare cases, a dangerous collection of blood (hematoma) may form on the brain after a bump, blow, or jolt to the head or body and can squeeze the brain against the skull. Call 9-1-1 or take your child or teen to the emergency department right away if, after a bump, blow, or jolt to the head or body, he or she has one or more of these danger signs:

- One pupil larger than the other
- Drowsiness or inability to wake up
- A headache that gets worse and does not go away
- Slurred speech, weakness, numbness, or decreased coordination
- Repeated vomiting or nausea, convulsions or seizures (shaking or twitching)
- Unusual behavior, increased confusion, restlessness, or agitation
- Loss of consciousness (passed out/knocked out). Even a brief loss of consciousness should be taken seriously

**Children and teens** who continue to play while having concussion symptoms, or who return to play too soon—while the brain is still healing—have a greater chance of getting another concussion. A repeat concussion that occurs while the brain is still healing from the first injury can be very serious, and can affect a child or teen for a lifetime. It can even be fatal.

### What Should I Do if My Child or Teen Has a Possible Concussion?

As a parent, if you think your child or teen may have a concussion, you should:

1. Remove your child or teen from play.
2. Keep your child or teen out of play the day of the injury. Your child or teen should be seen by a healthcare provider and only return to play with permission from a healthcare provider who is experienced in evaluating for concussion.
3. Ask your child's or teen's healthcare provider for written instructions on helping your child or teen return to school. You can give the instructions to your child's or teen's school nurse and teacher(s) and return-to-play instructions to the coach and/or athletic trainer.

Do not try to judge the severity of the injury yourself. Only a healthcare provider should assess a child or teen for a possible concussion. Concussion signs and symptoms often show up soon after the injury. But you may not know how serious the concussion is at first, and some symptoms may not show up for hours or days.

The brain needs time to heal after a concussion. A child's or teen's return to school and sports should be a gradual process that is carefully managed and monitored by a healthcare provider.

To learn more, go to [cdc.gov/HEADSUP](http://cdc.gov/HEADSUP)



**Discuss the risks of concussion and other serious brain injuries with your child or teen, and have each person sign below.** Detach the section below, and keep this information sheet to use at your children's or teens' games and practices to help protect them from concussion or other serious brain injuries.

I learned about concussion and talked with my parent or coach about what to do if I have a concussion or other serious brain injury.

Athlete's Name Printed: \_\_\_\_\_ Date: \_\_\_\_\_

Athlete's Signature: \_\_\_\_\_

I have read this fact sheet for parents on concussion with my child or teen, and talked about what to do if they have a concussion or other serious brain injury.

Parent or Legal Guardian's Name Printed: \_\_\_\_\_ Date: \_\_\_\_\_


Parent or Legal Guardian's Signature: \_\_\_\_\_


## Website Resources


- Sudden Death in Athletes  
<http://tinyurl.com/m2gjmva>
- Hypertrophic Cardiomyopathy Association  
[www.4hcm.org](http://www.4hcm.org)
- American Heart Association [www.heart.org](http://www.heart.org)

## Collaborating Agencies:

  
American Academy of Pediatrics  
New Jersey Chapter  
3836 Quakerbridge Road, Suite 108  
Hamilton, NJ 08619  
(p) 609-842-0014  
(f) 609-842-0015  
[www.aapnj.org](http://www.aapnj.org)

  
American Heart Association  
1 Union Street, Suite 301  
Robbinsville, NJ, 08691  
(p) 609-208-0020  
[www.heart.org](http://www.heart.org)

  
New Jersey Department of Education  
PO Box 500  
Trenton, NJ 08625-0500  
(p) 609-292-5935  
[www.state.nj.us/education/](http://www.state.nj.us/education/)

  
New Jersey Department of Health  
P. O. Box 360  
Trenton, NJ 08625-0360  
(p) 609-292-7837  
[www.state.nj.us/health](http://www.state.nj.us/health)

*Lead Author: American Academy of Pediatrics,  
New Jersey Chapter*

*Written by: Initial draft by Sushma Raman Hebbat,  
MD & Stephen G. Rice, MD PhD*

*Additional Reviewers: NJ Department of Education,  
NJ Department of Health and Senior Services,  
American Heart Association/New Jersey Chapter,  
NJ Academy of Family Practice, Pediatric Cardiologists,  
New Jersey State School Nurses*

*Revised 2014: Nancy Curry, EdM;  
Christene DeWitt-Parker, MSN, CSN, RN;  
Lakota Kruse, MD, MPH; Susan Martz, EdM;  
Stephen G. Rice, MD; Jeffrey Rosenberg, MD,  
Louis Teichholz, MD; Perry Weinstock, MD*

# SUDDEN CARDIAC DEATH IN YOUNG ATHLETES

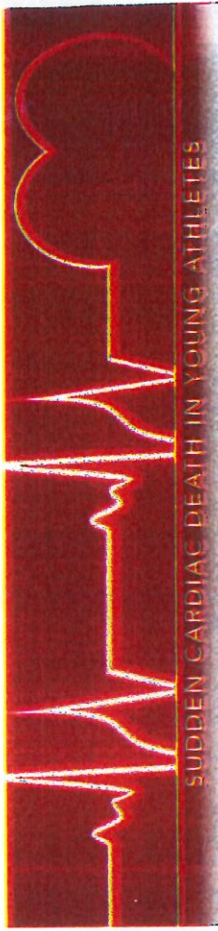
## The Basic Facts on Sudden Cardiac Death in Young Athletes



STATE OF NEW JERSEY  
DEPARTMENT OF EDUCATION

American Academy of Pediatrics  
DEDICATED TO THE HEALTH OF ALL CHILDREN™

  
American Heart  
Association  
*Learn and Live*



## SUDDEN CARDIAC DEATH IN YOUNG ATHLETES

**S**udden death in young athletes between the ages of 10 and 19 is very rare. What, if anything, can be done to prevent this kind of tragedy?



### What are the most common causes?

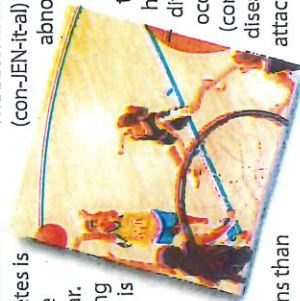
Research suggests that the main cause is a loss of proper heart rhythm, causing the heart to quiver instead of pumping blood to the brain and body. This is called ventricular fibrillation (ven-TRICK-you-lar fib-roo-LAY-shun). The problem is usually caused by one of several cardiovascular abnormalities and electrical diseases of the heart that go unnoticed in healthy-appearing athletes.

### What is sudden cardiac death in the young athlete?

Sudden cardiac death is the result of an unexpected failure of proper heart function, usually (about 60% of the time) during or immediately after exercise without trauma. Since the heart stops pumping adequately, the athlete quickly collapses, loses consciousness, and ultimately dies unless normal heart rhythm is restored using an automated external defibrillator (AED).

### How common is sudden death in young athletes?

Sudden cardiac death in young athletes is very rare. About 100 such deaths are reported in the United States per year. The chance of sudden death occurring to any individual high school athlete is about one in 200,000 per year.



The second most likely cause is congenital (con-JEN-it-al) (i.e., present from birth) abnormalities of the coronary

arteries. This means that these blood vessels are connected to the main blood vessel of the heart in an abnormal way. This differs from blockages that may occur when people get older (commonly called "coronary artery disease," which may lead to a heart attack).

## SUDDEN CARDIAC DEATH IN YOUNG ATHLETES

### Other diseases of the heart that can lead to sudden death in young people include:

- Myocarditis (my-oh-car-DIE-tis), an acute inflammation of the heart muscle (usually due to a virus).
- Dilated cardiomyopathy, an enlargement of the heart for unknown reasons.
- Long QT syndrome and other electrical abnormalities of the heart which cause abnormal fast heart rhythms that can also run in families.
- Marfan syndrome, an inherited disorder that affects heart valves, walls of major arteries, eyes and the skeleton. It is generally seen in unusually tall athletes, especially if being tall is not common in other family members.

### Are there warning signs to watch for?

In more than a third of these sudden cardiac deaths, there were warning signs that were not reported or taken seriously. Warning signs are:

- Fainting, a seizure or convulsions during physical activity;
- Fainting or a seizure from emotional excitement, emotional distress or being startled;
- Dizziness or lightheadedness, especially during exertion;
- Chest pains, at rest or during exertion;
- Palpitations - awareness of the heart beating unusually (skipping, irregular or extra beats) during athletics or during cool down periods after athletic participation;
- Fatigue or tiring more quickly than peers; or
- Being unable to keep up with friends due to shortness of breath (labored breathing).

### What are the current recommendations for screening young athletes?

New Jersey requires all school athletes to be examined by their primary care physician ("medical home") or school physician at least once per year. The New Jersey Department of Education requires use of the specific Preparation Physical Examination Form (PPE). This process begins with the parents and student-athletes answering questions about symptoms during exercise (such as chest pain, dizziness, fainting, palpitations or shortness of breath); and questions about family health history.

The primary healthcare provider needs to know if any family member died suddenly during physical activity or during a seizure. They also need to know if anyone in the family under the age of 50 had an unexplained sudden death such as drowning or car accidents: This information must be provided annually for each exam because it is so essential to identify those at risk for sudden cardiac death.

The required physical exam includes measurement of blood pressure and a careful listening examination of the heart, especially for murmurs and rhythm abnormalities. If there are no warning signs reported on the health history and no abnormalities discovered on exam, no further evaluation or testing is recommended.

### Are there options privately available to screen for cardiac conditions?

Technology-based screening programs including a 12-lead electrocardiogram (ECG) and echocardiogram (ECHO) are noninvasive and painless options parents may consider in addition to the required

PPE. However, these procedures may be expensive and are not currently advised by the American Academy of Pediatrics and the American College of Cardiology unless the PPE reveals an indication for these tests. In addition to the expense, other limitations of technology-based tests include the possibility of "false positives" which leads to unnecessary stress for the student and parent or guardian as well as unnecessary restriction from athletic participation.

The United States Department of Health and Human Services offers risk assessment options under the Surgeon General's Family History Initiative available at <https://www.hhs.gov/familyhistory/index.html>.

### When should a student athlete see a heart specialist?

If the primary healthcare provider or school physician has concerns, a referral to a child heart specialist, a pediatric cardiologist, is recommended. This specialist will perform a more thorough evaluation, including an electrocardiogram (ECG), which is a graph of the electrical activity of the heart. An echocardiogram, which is an ultrasound test to allow for direct visualization of the heart structure, will likely also be done. The specialist may also order a treadmill exercise test and a monitor to enable a longer recording of the heart rhythm. None of the testing is invasive or uncomfortable.

### Can sudden cardiac death be prevented just through proper screening?

A proper evaluation should find most, but not all, conditions that would cause sudden death in the athlete. This is because some diseases are difficult to uncover and may only develop later in life. Others can develop following a

normal screening evaluation, such as an infection of the heart muscle from a virus.

This is why screening evaluations and a review of the family health history need to be performed on a yearly basis by the athlete's primary healthcare provider. With proper screening and evaluation, most cases can be identified and prevented.

### Why have an AED on site during sporting events?

The only effective treatment for ventricular fibrillation is immediate use of an automated external defibrillator (AED). An AED can restore the heart back into a normal rhythm. An AED is also life-saving for ventricular fibrillation caused by a blow to the chest over the heart (commotio cordis).

N.J.S.A. 18A:40-41a through c, known as "Janet's Law," requires that at any school-sponsored athletic event or team practice in New Jersey public and nonpublic schools including any of grades K through 12, the following must be available:

- An AED in an unlocked location on school property within a reasonable proximity to the athletic field or gymnasium; and
- A team coach, licensed athletic trainer, or other designated staff member if there is no coach or licensed athletic trainer present, certified in cardiopulmonary resuscitation (CPR) and the use of the AED; or
- A State-certified emergency services provider or other certified first responder.

The American Academy of Pediatrics recommends the AED should be placed in central location that is accessible and ideally no more than a 1 to 1 1/2 minute walk from any location and that a call is made to activate 911 emergency system while the AED is being retrieved.

# OPIOID USE AND MISUSE EDUCATIONAL FACT SHEET

## Keeping Student-Athletes Safe

School athletics can serve an integral role in students' development. In addition to providing healthy forms of exercise, school athletics foster friendships and camaraderie, promote sportsmanship and fair play, and instill the value of competition.

Unfortunately, sports activities may also lead to injury and, in rare cases, result in pain that is severe or long-lasting enough to require a prescription opioid painkiller.<sup>1</sup> It is important to understand that overdoses from opioids are on the rise and are killing Americans of all ages and backgrounds. Families and communities across the country are coping with the health, emotional and economic effects of this epidemic.<sup>2</sup>

This educational fact sheet, created by the New Jersey Department of Education as required by state law (N.J.S.A. 18A:40-41.10), provides information concerning the use and misuse of opioid drugs in the event that a health care provider prescribes a student-athlete or cheerleader an opioid for a sports-related injury. Student-athletes and cheerleaders participating in an interscholastic sports program (and their parent or guardian, if the student is under age 18) must provide their school district written acknowledgment of their receipt of this fact sheet.

### How Do Athletes Obtain Opioids?

In some cases, student-athletes are prescribed these medications. According to research, about a third of young people studied obtained pills from their own previous prescriptions (i.e., an unfinished prescription used outside of a physician's supervision), and 83 percent of adolescents had unsupervised access to their prescription medications.<sup>3</sup> It is important for parents to understand the possible hazard of having unsecured prescription medications in their households. Parents should also understand the importance of proper storage and disposal of medications, even if they believe their child would not engage in non-medical use or diversion of prescription medications.

### What Are Signs of Opioid Use?

According to the National Council on Alcoholism and Drug Dependence, 12 percent of male athletes and 8 percent of female athletes had used prescription opioids in the 12-month period studied.<sup>3</sup> In the early stages of abuse, the athlete may exhibit unprovoked nausea and/or vomiting. However, as he or she develops a tolerance to the drug, those signs will diminish. Constipation is not uncommon, but may not be reported. One of the most significant indications of a possible opioid addiction is an athlete's decrease in academic or athletic performance, or a lack of interest in his or her sport. If these warning signs are noticed, best practices call for the student to be referred to the appropriate professional for screening,<sup>4</sup> such as provided through an evidence-based practice to identify problematic use, abuse and dependence on illicit drugs (e.g., Screening, Brief Intervention, and Referral to Treatment (SBIRT)) offered through the [New Jersey Department of Health](#).

## What Are Some Ways Opioid Use and Misuse Can Be Prevented?

According to the New Jersey State Interscholastic Athletic Association (NJSIAA) Sports Medical Advisory Committee chair, John P. Kripsak, D.O., "Studies indicate that about 80 percent of heroin users started out by abusing narcotic painkillers."

The Sports Medical Advisory Committee, which includes representatives of NJSIAA member schools as well as experts in the field of healthcare and medicine, recommends the following:

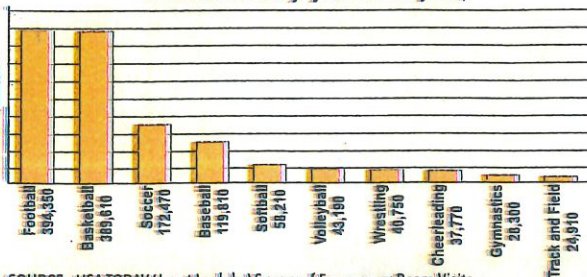
- The pain from most sports-related injuries can be managed with non-narcotic medications such as acetaminophen, non-steroidal anti-inflammatory medications like ibuprofen, naproxen or aspirin. Read the label carefully and always take the recommended dose, or follow your doctor's instructions. More is not necessarily better when taking an over-the-counter (OTC) pain medication, and it can lead to dangerous side effects.
- Ice therapy can be utilized appropriately as an anesthetic.
- Always discuss with your physician exactly what is being prescribed for pain and request to avoid narcotics.
- In extreme cases, such as severe trauma or post-surgical pain, opioid pain medication should not be prescribed for more than five days at a time;
- Parents or guardians should always control the dispensing of pain medications and keep them in a safe, non-accessible location; and
- Unused medications should be disposed of immediately upon cessation of use. Ask your pharmacist about drop-off locations or home disposal kits like Deterra or Medsaway.

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### Number of Injuries Nationally in 2012 Among Athletes 19 and Under from 10 Popular Sports

(Based on data from U.S. Consumer Product Safety Commission's National Electronic Injury Surveillance System)



SOURCE: USA TODAY (Janet Loehrke) Survey of Emergency Room Visits

## Even With Proper Training and Prevention, Sports Injuries May Occur

There are two kinds of sports injuries. Acute injuries happen suddenly, such as a sprained ankle or strained back. Chronic injuries may happen after someone plays a sport or exercises over a long period of time, even when applying overuse-preventative techniques.<sup>5</sup>

Athletes should be encouraged to speak up about injuries, coaches should be supported in injury-prevention decisions, and parents and young athletes are encouraged to become better educated about sports safety.<sup>6</sup>

## What Are Some Ways to Reduce the Risk of Injury?

Half of all sports medicine injuries in children and teens are from overuse. An overuse injury is damage to a bone, muscle, ligament, or tendon caused by repetitive stress without allowing time for the body to heal. Children and teens are at increased risk for overuse injuries because growing bones are less resilient to stress. Also, young athletes may not know that certain symptoms are signs of overuse.

The best way to deal with sports injuries is to keep them from happening in the first place. Here are some recommendations to consider:



**PREPARE** Obtain the preparticipation physical evaluation prior to participation on a school-sponsored interscholastic or intramural athletic team or squad.



**CONDITIONING** Maintain a good fitness level during the season and offseason. Also important are proper warm-up and cooldown exercises.



**PLAY SMART** Try a variety of sports and consider specializing in one sport before late adolescence to help avoid overuse injuries.



**ADEQUATE HYDRATION** Keep the body hydrated to help the heart more easily pump blood to muscles, which helps muscles work efficiently.



**TRAINING** Increase weekly training time, mileage or repetitions no more than 10 percent per week. For example, if running 10 miles one week, increase to 11 miles the following week. Athletes should also cross-train and perform sport-specific drills in different ways, such as running in a swimming pool instead of only running on the road.



**REST UP** Take at least one day off per week from organized activity to recover physically and mentally. Athletes should take a combined three months off per year from a specific sport (may be divided throughout the year in one-month increments). Athletes may remain physically active during rest periods through alternative low-stress activities such as stretching, yoga or walking.



**PROPER EQUIPMENT** Wear appropriate and properly fitted protective equipment such as pads (neck, shoulder, elbow, chest, knee, and shin), helmets, mouthpieces, face guards, protective cups, and eyewear. Do not assume that protective gear will prevent all injuries while performing more dangerous or risky activities.

## Resources for Parents and Students on Preventing Substance Misuse and Abuse

The following list provides some examples of resources:

**National Council on Alcoholism and Drug Dependence - NJ** promotes addiction treatment and recovery.

**New Jersey Department of Health, Division of Mental Health and Addiction Services** is committed to providing consumers and families with a wellness and recovery-oriented model of care.

**New Jersey Prevention Network** includes a [parent's quiz](#) on the effects of opioids.

**Operation Prevention Parent Toolkit** is designed to help parents learn more about the opioid epidemic, recognize warning signs, and open lines of communication with their children and those in the community.

**Parent to Parent NJ** is a grassroots coalition for families and children struggling with alcohol and drug addiction.

**Partnership for a Drug Free New Jersey** is New Jersey's anti-drug alliance created to localize and strengthen drug-prevention media efforts to prevent unlawful drug use, especially among young people.

**The Science of Addiction: The Stories of Teens** shares common misconceptions about opioids through the voices of teens.

**Youth IMPACTING NJ** is made up of youth representatives from coalitions across the state of New Jersey who have been impacting their communities and peers by spreading the word about the dangers of underage drinking, marijuana use, and other substance misuse.

**References** <sup>1</sup> Massachusetts Technical Assistance Partnership for Prevention

<sup>2</sup> Centers for Disease Control and Prevention

<sup>3</sup> New Jersey State Interscholastic Athletic

Association (NJSIAA) Sports Medical Advisory Committee (SMAC)

<sup>4</sup> Athletic Management, David Csillan, athletic trainer, Ewing High School, NJSIAA SMAC

<sup>5</sup> National Institute of Arthritis and Musculoskeletal and Skin Diseases

<sup>6</sup> USA TODAY

<sup>7</sup> American Academy of Pediatrics

An online version of this fact sheet is available on the New Jersey Department of Education's [Alcohol, Tobacco, and Other Drug Use](#) webpage.

Updated Jan. 30, 2018.