



# LEARNING CENTER

We believe that safe sports, good health decisions, excellent care and informed policy begin with education.



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Every two to three days in the U.S., a young athlete dies as the result of sudden cardiac arrest. In fact, sudden cardiac arrest is the number one cause of sudden death in exercising young athletes.

In most cases, the arrest occurs with no warning. In the midst of play or practice, the athlete suddenly collapses. And if appropriate action is not taken within minutes, the athlete will die or be left with serious brain damage.

By being aware of the causes of sudden cardiac arrest and knowing who is at greatest risk, you will take the first step in preparing to save your athlete's life.

## What is sudden cardiac arrest?

In sudden cardiac arrest, the heart suddenly loses its normal rhythm and stops pumping blood. It typically strikes without warning, and unless effective emergency steps are taken immediately, death or serious disability will occur.

Sudden cardiac arrest in young athletes is usually caused by a structural or electrical abnormality of the heart. Most of these abnormalities are inherited, but remain undiagnosed and may be unknown to the athlete.

Exercise can be a trigger for sudden cardiac arrest in individuals with an abnormal heart condition.

Because these inherited conditions often run in families, any athlete who has a family member who developed heart disease or died suddenly from heart disease at an early age, particularly before age 40, should be evaluated for these heart conditions by a knowledgeable physician.

In some cases, a hard blow to the chest, for example from a baseball or hockey puck or from contact with another player, can trigger sudden cardiac arrest. When this happens it is called "commotio cordis."

## Who is at risk?

About 1 or 2 in every 100,000 young athletes experience a sudden cardiac arrest each year. Males are at greater risk than females, and African American athletes are at greater risk than Caucasian athletes. For example, about 6 in every 100,000 college African American male athletes have a sudden cardiac arrest each year.

For reasons we don't understand, the risk seems to be higher in football and men's basketball. The rate is highest among NCAA Division I male basketball players, whose risk is 20 per 100,000 per year.

No method of detecting heart problems in athletes is perfect. A comprehensive medical history and physical exam is required for all young athletes before they participate in sports. However, this evaluation has shown limited effectiveness to detect at-risk condition athletes.

Some medical experts are adding a screening electrocardiogram (EKG) to the standard pre-participation physical evaluation. The addition of EKG improves detection of heart abnormalities that may increase an athlete's risk of sudden cardiac arrest.

The "best" screening protocol is still being researched. If EKG is included, it should be performed by a health professional knowledgeable in EKG detection of these abnormalities and with proper cardiology resources available.

## The warning signs of sudden cardiac arrest

In most cases, sudden cardiac arrest strikes young athletes without warning. However, in some cases, there are warning signs or symptoms that an athlete may have a heart condition that puts him at risk of a sudden cardiac arrest.

These signs include:

- Fainting or passing out during exercise
- Chest pain with exercise
- Excessive shortness of breath with exercise
- Palpitations (heart racing) for no reason
- Unexplained seizures

Of course, athletes are often short of breath when they are working out, and their hearts may pound. But when the racing, pounding heart or shortness of breath are out of proportion to the level of exercise or one's conditioning—there's cause for concern. Of these warning signs, fainting or passing out during exercises is the most worrisome. Sudden cardiac arrest can look like a seizure – so patients with unexplained 'seizures' should have an evaluation for underlying heart conditions.

## Recognize and respond: 9-1-1, CPR and AED



emergencies. Every EAP should specify how to respond to a suspected sudden cardiac arrest. The staff's ability to execute every eler of its EAP can be lifesaving.

Research has shown that having onsite AEDs available in public locations such as schools, airports and casinos increases the sudder cardiac arrest survival rate by as much as tenfold, from 8 percent to as much as 80 percent. Some states (including Washington) nov require all public high schools to have an AED program.

Ask your child's coach if the team has easy access to an AED at practices and games or competitions. If not, work with other parents, school administrators, coaches and health professionals to make AEDs available.

Also ask your child's coach if the team has developed and practiced an EAP. If the team does not have an EAP, insist on developing o the team has an EAP but has not practiced, insist on practicing it.



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