

# Sports & Heart Health

A PARENT'S GUIDE TO SIGNS AND SYMPTOMS, TREATMENT AND PREVENTION

## WHAT IS SUDDEN CARDIAC DEATH?

Sudden cardiac arrest is when the heart abruptly stops functioning. When the heart is no longer pumping blood to the brain and other vital organs, death can occur. Parents and athletes alike often worry about sudden cardiac death because they hear a lot about it in the news. However, sudden cardiac death is extremely rare. Detailed below are some facts about SCD and pre-sports screening.

## WHAT CAUSES SUDDEN CARDIAC DEATH?

Some of the most common causes are:

- **Hypertrophic cardiomyopathy (HCM)**  
A thickening of the heart muscle, causing an enlarged heart.
- **Coronary artery abnormalities**  
Abnormality or malformation of the blood vessels that supply the blood to the heart muscle.
- **Long QT syndrome**  
A disturbance of the heart's electrical system causing an abnormal heartbeat.
- **Acute heart infections**  
Inflammation of the heart's muscle, usually caused by a virus.

It is important to remember that asthma and other non-cardiac diseases can also lead to sudden death.

## WHAT ARE THE SYMPTOMS?

Unfortunately, some of the conditions listed above may be clinically silent for some time and an athlete may not have any symptoms of the underlying problem. If symptoms appear, it is usually during exercise.

Symptoms include:

- Fainting or passing out during exercise.
- Chest pain while exercising.
- Palpitations (sensation of the heart racing).
- Excessive fatigue or inability to keep up with teammates.
- Shortness of breath.
- Dramatic change in stamina.

If your child has experienced any of these symptoms while participating in sports, consultation with your child's primary care physician or a pediatric cardiologist is recommended.

## HOW DO I KNOW IF MY CHILD IS AT RISK?

Sudden cardiac death devastates families, schools, and communities touched by such tragedies. Fortunately this is rare. A thorough physical exam and review of your child's and family's medical history by your child's regular physician is vital to prevention. Over time, this physician has accumulated knowledge regarding your child's medical history, making him or her more attuned to your child's development and any changes in

symptoms and medical history. In addition, the pediatrician or family doctor is equipped to monitor changes in family history that influence recommendations for further testing or monitoring. The following questions are aimed at identifying underlying inherited conditions that may predispose a child to sudden cardiac death.

### Patient Medical History — Key Questions for Heart Screening:

- Have you ever fainted or passed out during or after exercise?
- Have you ever experienced discomfort, pain, tightness or pressure in the chest during exercise?
- Does your heart ever race or skip beats while exercising?
- Have you begun to have excessive fatigue with routine exercise?
- Has there been a dramatic change in your stamina?
- Do you get more tired or short of breath more quickly than your friends during exercise?

### Family Medical History — Key Questions for Heart Screening:

- Has any family member or relative died of heart problems or a sudden unexplained death before the age of 50?
- Is there a family history of cardiomyopathy?
- Is there a family history of Long QT syndrome or other life-threatening arrhythmias?

If you answer yes to any of these questions, an exam and advanced screening by a pediatric cardiologist is recommended.

## WHAT OTHER TESTS CAN BE HELPFUL?

An Electrocardiogram (ECG) measures the electrical activity in the heart, and it can help identify cardiac disease. However, many ECG studies may be normal in athletes who have risk factors for cardiac disease and sudden cardiac death. It is important that your child's results are reviewed by a pediatric cardiologist because ECG readings are different in young athletes and adults. Your child's activity level is also important. The ECG is unlikely to detect what is known to be the primary cause of on-field sudden cardiac death in child athletes, hypertrophic cardiomyopathy, which is a progressive problem that gets worse with time and additional training. In adolescents, the ECG is more helpful in diagnosing hypertrophic cardiomyopathy. Alone, the ECG is likely to miss important signs or symptoms of heart disease. The second leading cause of sudden cardiac death in athletes is not detected by the ECG; this is called a coronary artery abnormality. The diagnosis and treatment for this problem requires an extensive echocardiogram (an ultrasound of the heart) performed by a specialized pediatric cardiologist in a multi-disciplinary setting. Screening echocardiograms are unlikely to pick up on the difficult diagnosis of a coronary artery

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**T**he Sports Medicine Center at Children's offers the only comprehensive, integrated program in North Texas specifically designed for young and growing athletes. The center goes beyond treatment and rehabilitation of traumatic injuries that occur on the playing field to problems associated with sports participation, including cardiac disorders, asthma and nutrition.

**The Children's Sports Medicine Center** at the Legacy campus in Plano features a 5,000-square-foot facility complete with diagnostic imaging capabilities, a dedicated sports therapy gym, video motion analysis, isokinetic muscle testing and state-of-the-art rehabilitation equipment – all geared to provide your child with the best medical evaluation by the experts treating young and growing athletes.

### **Sports Medicine Center**

Children's Medical Center at Legacy  
Ambulatory Care Pavilion  
7601 Preston Road  
Plano, Texas 75024  
469-303-3000



For more information visit  
[www.childrens.com/sportsmedicine](http://www.childrens.com/sportsmedicine)

abnormality. This thorough testing is recommended only for patients who have signs and symptoms of cardiac problems that are discovered on a detailed history.

### **HOW ELSE CAN SCD BE PREVENTED?**

Since up to 70 percent of SCD cases in young people do not occur on the athletic field, it is important to have a regular review of history and symptoms to contribute to decisions about additional screening and tests for cardiac disease or other problems that can lead to sudden death. Annually, or as required by the school or sports organization, a pre-participation examination should be performed by the primary care physician to take into consideration the unique, and changing situation of your young and growing athlete.

### **SHOULD MY CHILD BE SCREENED WITH ECG OR ECHO?**

Seeking the advice and counsel of your child's primary care doctor is the best place to start. Carefully review your child's medical history and the family history regularly and rely upon the primary care physician's recommendations for additional testing. If concerns or worries arise, working together with the providers in the Sports Medicine Center to care for our community's young and growing athletes, the Heart Center at Children's Medical Center is available to provide consultation and recommend more advanced testing, when appropriate.

### **To make an appointment:**

- For an appointment or a consultation, please call the Children's Heart Center at 214-456-2333. Appointments are available the day you call or the next day at many of our locations – Dallas, Plano, Southlake, Tyler and Abilene.
- If your child has other problems or symptoms not related to the heart that are affecting sports participation in sports, call the Children's Sports Medicine Center for an appointment at 469-303-3000.



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