

Sudden Cardiac Arrest Information Sheet for Student Athletes and Parents/Guardians

What is Sudden Cardiac Arrest?

Sudden Cardiac Arrest (SCA) is the sudden onset of an abnormal and lethal heart rhythm, causing the heart to stop pumping adequately. When this happens, blood stops flowing to the brain and other vital organs, and, if left untreated, can quickly result in death.

How common is Sudden Cardiac Arrest?

While SCA in student athletes is rare, it is the leading medical cause of death in young athletes. The chance of SCA occurring to any individual student athlete is estimated to be about one in 80,000 to 100,000 per year.

What causes Sudden Cardiac Arrest in student athletes?

SCA is caused by several structural and electrical conditions of the heart. These conditions predispose an individual to have an abnormal heart rhythm. SCA is more likely during exercise or physical activity, placing student athletes with undiagnosed heart conditions at greater risk. Some of these conditions are listed below.

- **Inherited conditions present at birth of the heart muscle** (passed on from family): Hypertrophic Cardiomyopathy (HCM), Arrhythmogenic Right Ventricular Cardiomyopathy (ARVC), and Marfan Syndrome
- **Inherited conditions present at birth of the electrical system:** Long QT Syndrome (LQTS), Catecholaminergic Polymorphic Ventricular Tachycardia, and Brugada Syndrome (BrS)
- **Noninherited conditions** (not passed on from the family, but still present at birth): Coronary artery abnormalities, Aortic valve abnormalities, Non-compaction Cardiomyopathy, and Wolff-Parkinson-White Syndrome (occurs from an extra conducting fiber in the heart's electrical system)
- **Conditions not present at birth but acquired later in life:** Commotio Cordis (occurs from a direct blow to the chest), Myocarditis (infection or inflammation of the heart), and Recreational/Performance Drug Use
- **Idiopathic:** Sometimes the underlying cause of Sudden Cardiac Arrest is unknown, even after autopsy.

What are the warning signs that Sudden Cardiac Arrest may occur?

- **Fainting, passing out, or seizure** - especially during or right after exercise
- **Chest pain or discomfort** - especially with exercise
- **Excessive Shortness of breath** - with exercise
- **Racing heart or irregular heartbeat** - with no apparent reason
- **Dizziness or lightheadedness** - especially with exercise
- **Unusual Fatigue/Weakness** - with exercise
- **Fainting** - from emotional excitement, emotional distress, or being startled
- **Family history of sudden cardiac arrest prior to the age of 50**

While a heart condition may have no warning signs, in more than a third of sudden-cardiac deaths, there were warning signs that were not reported to an adult or taken seriously. If any of the above warning signs are present, a cardiac evaluation by a qualified health care provider such as a physician, physician assistant, or advanced practice nurse is recommended. If the health care provider has concerns, a referral to a pediatric cardiologist is recommended.

What are the risks of practicing or playing after experiencing SCA warning signs?

Ignoring such signs and continuing to play could be catastrophic and result in sudden cardiac death. Taking these warning symptoms seriously and seeking timely appropriate medical care can prevent serious and possibly fatal consequences.