

## Frequently Asked Questions about Sudden Cardiac Arrest (SCA)

### What are the most common causes of Sudden Cardiac Arrest (SCA) in a student athlete?

SCA is caused by several **structural** and **electrical** diseases of the heart. These conditions predispose an individual to have an abnormal rhythm that can be fatal if not treated within a few minutes. Most conditions responsible for SCA in children are **inherited**, which means the tendency to have these conditions is passed from parents to children through the genes. Some of these conditions are listed below.

1. *Hypertrophic cardiomyopathy (HCM)*: HCM involves an abnormal thickening of the heart muscle and it is the most common cause of SCA in an athlete.
2. Coronary artery anomalies: The second most common cause is congenital (present at birth) abnormalities of coronary arteries, the blood vessels that supply blood to the heart.
3. Other possible causes of SCA are:
  - a. *Myocarditis*: an acute inflammation of the heart muscle (usually due to a virus).
  - b. Disorders of heart electrical activity such as:
    - i. *Long QT syndrome*.
    - ii. *Wolff-Parkinson-White (WPW) syndrome*.
    - iii. *Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT)*.
  - c. *Marfan syndrome*: a condition that affects heart valves, walls of major arteries, eyes, and the skeleton.
  - d. Congenital aortic valve abnormalities.
4. *Commotio Cordis*: concussion of the heart from **sudden blunt non-penetrating blow** to the chest
5. Use of recreational, **performance-enhancing** drugs, and **energy drinks** can also bring on SCA.

### How can we minimize the risk of SCA and improve outcomes?

The risk of SCA in student athletes can be minimized by providing appropriate prevention, recognition, and treatment strategies. One important strategy is the requirement for a yearly pre-participation screening evaluation, often called a sports physical, performed by the athlete's medical provider.

1. It is very important that you **carefully and accurately complete the personal history and family history section** of the "[Pre-Participation Physical Evaluation Form](#)."
2. Since the majority of these conditions are inherited, **be aware of your family history**, especially if any close family member:
  - a. had sudden unexplained and unexpected death before the age of 50.
  - b. was diagnosed with any of the heart conditions listed above.
  - c. died suddenly /unexpectedly during physical activity, during a seizure, from Sudden Infant Death Syndrome (SIDS) or from drowning.
3. **Take seriously the warning signs and symptoms of SCA**. Athletes should notify their parents, coaches, or school nurses if they experience any of these warning signs or symptoms.
4. Schools in Maryland have AED policies and emergency preparedness plans to address SCA and other emergencies in schools. Be aware of your school's various preventive measures.
5. If a cardiovascular disorder is suspected or diagnosed based on the comprehensive pre-participation screening evaluation, a referral to a child heart specialist or pediatric cardiologist is crucial. Such athletes will be excluded from sports pending further evaluation and clearance by their medical providers.