



HARFORD COUNTY PUBLIC SCHOOLS
Office of Athletics and Physical Education

SUDDEN CARDIAC ARREST AWARENESS

1. What is Sudden Cardiac Arrest?

- Occurs suddenly and often without warning.
- An electrical malfunction (short-circuit) causes the bottom chambers of the heart (ventricles) to beat dangerously fast (ventricular tachycardia or fibrillation) and disrupts the pumping ability of the heart.
- The heart cannot pump blood to the brain, lungs, and other organs of the body.
- The person loses consciousness (passes out) and has no pulse.
- Death occurs within minutes if not treated immediately.

2. What are the symptoms/warning signs of Sudden Cardiac Arrest?

- Fainting/blackouts (especially during exercise)
- Dizziness
- Unusual fatigue/weakness
- Chest pain
- Shortness of breath
- Nausea/vomiting
- Palpitations (heart is beating unusually fast or skipping beats)
- Family history of sudden cardiac arrest at age less than 50

The presence of ANY of these symptoms/warning signs that occur while exercising may necessitate further evaluation from your physician before returning to practice or a game.

3. What is the treatment for Sudden Cardiac Arrest?

- Time is critical and an immediate response is vital.
- **CALL 911**
- **Begin CPR**
- **Use an Automated External Defibrillator (AED)**

4. What causes Sudden Cardiac Arrest

- Conditions present at birth
 - **Inherited** (passed on from parents/relatives) **condition of the heart muscle;**
 - **Hypertrophic Cardiomyopathy** – hypertrophy (thickening) of the left ventricle; the most common cause of sudden cardiac arrest in athletes in the United States.
 - **Arrhythmogenic Right Ventricular Cardiomyopathy (ARVC)** – replacement of part of the right ventricle by fat and scar; the most common cause of sudden cardiac arrest in Italy.
 - **Marfan Syndrome** – a disorder of the structure of blood vessels that make them prone to rupture; often associated with very long arms and unusually flexible joints.



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- ***Inherited conditions of the electrical system:***
 - **Long QT Syndrome** - abnormality in the ion channels (electrical system) of the heart.
 - **Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT) and Brugada Syndrome** – other types of electrical abnormalities that are rare but are inherited.
- ***Non Inherited*** (not passed on from the family, but still present at birth) ***conditions;***
 - **Coronary Artery Abnormalities** – abnormality of the blood vessels that supply blood to the heart muscle. The second most common cause of sudden cardiac arrest in athletes in the United States.
 - **Aortic valve abnormalities** – failure of the aortic (the valve between the heart and the aorta) to develop properly; usually causes a loud heart murmur.
 - **Non-compaction Cardiomyopathy** – a condition where the heart muscle does not develop normally.
 - **Wolff-Parkinson-White Syndrome** – an extra conducting fiber is present in the heart's electrical system and can increase the risk of arrhythmias.
- ***Conditions not present at birth but acquired later in life:***
 - **Comotio Cordis** – concussion of the heart that can occur from being hit in the chest by a ball, puck, or fist.
 - **Myocarditis** - infection/inflammation of the heart, usually caused by a virus.
 - **Recreational/Performance-Enhancing drug use** – use of drugs such as cocaine, and or high doses of stimulants can be associated with Sudden Cardiac Arrest.
- ***Idiopathic:*** Sometimes the underlying cause of the Sudden Cardiac Arrest is unknown, even after autopsy.