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.

What causes Sudden Cardiac Arrest?

- **Conditions present at birth**
  - *Inherited (passed on from parents/relatives) conditions of the heart muscle:*
    - Hypertrophic Cardiomyopathy – hypertrophy (thickening) of the left ventricle; the most common cause of sudden cardiac arrest in athletes in the U.S.
    - Arrhythmogenic Right Ventricular Cardiomyopathy – 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 makes them prone to rupture; often associated with very long arms and unusually flexible joints.
  - *Inherited conditions of the electrical system:*
    - Long QT Syndrome – abnormality in the ion channels (electrical system) of the heart.
    - Catecholaminergic Polymorphic Ventricular Tachycardia and Brugada Syndrome – other types of electrical abnormalities that are rare but run in families.
- *NonInherited (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 U.S.
  - Aortic valve abnormalities – failure of the aortic valve (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:**
  - Commotio 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.
- **Idiopathic:** Sometimes the underlying cause of the Sudden Cardiac Arrest is unknown, even after autopsy.
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 < 50

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

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)

What are ways to screen for Sudden Cardiac Arrest?

- The American Heart Association recommends a pre-participation history and physical including 14 important cardiac elements.
- **The UIL Pre-Participation Physical Evaluation – Medical History form includes ALL 14 of these important cardiac elements and is mandatory annually.**
- Additional screening using an electrocardiogram and/or an echocardiogram is readily available to all athletes, but is not mandatory.

Where can one find information on additional screening?

- The Cardiac section on the UIL Health and Safety website (uiltexas.org).