SUDDEN CARDIAC ARREST (SCA) AWARENESS FORM

The Basic Facts on Sudden Cardiac Arrest

Website Resources:
American Heart Association: www.heart.org

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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?

Inherited (passed on from family) **conditions present at birth 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 present at birth 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. This is 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 or 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 and 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.

What are the current recommendations for screening young athletes?

The University Interscholastic League requires use of the specific Preparticipation Medical History form on a yearly basis. This process begins with the parents and student-athletes answering questions about symptoms during exercise (such as chest pain, dizziness, fainting, palpitations or shortness of breath); and questions about family health history.

It is important to know if any family member died suddenly during physical activity or during a seizure. It is also important to know if anyone in the family under the age of 50 had an unexplained sudden death such as drowning or car accidents. This information must be provided annually because it is essential to identify those at risk for sudden cardiac death.

The University Interscholastic League requires the Preparticipation Physical Examination form prior to junior high athletic participation and again prior to the 1st and 3rd years of high school participation. The required physical exam includes measurement of blood pressure and a careful listening examination of the heart, especially for murmurs and rhythm abnormalities. If there are no warning signs reported on the health history and no abnormalities discovered on exam, no additional evaluation or testing is recommended for cardiac issues/concerns.

Are there additional options available to screen for cardiac conditions?

Additional screening using an electrocardiogram (ECG) and/or an echocardiogram (Echo) is readily available to all athletes from their personal physicians, but is not mandatory, and is generally not recommended by either the American Heart Association (AHA) or the American College of Cardiology (ACC). Limitations of additional screening include the possibility (~10%) of "false positives", which leads to unnecessary stress for the student and parent or guardian as well as unnecessary restriction from athletic participation. There is also a possibility of "false negatives", since not all cardiac conditions will be identified by additional screening.

When should a student athlete see a heart specialist?

If a qualified examiner has concerns, a referral to a child heart specialist, a pediatric cardiologist, is recommended. This specialist may perform a more thorough evaluation, including an electrocardiogram (ECG), which is a graph of the electrical activity of the heart. An echocardiogram, which is an ultrasound test to allow for direct visualization of the heart structure, may also be done. The specialist may also order a treadmill exercise test and/or a monitor to enable a longer recording of the heart rhythm. None of the testing is invasive or uncomfortable.

Can Sudden Cardiac Arrest be prevented just through proper screening?

A proper evaluation (Preparticipation Physical Evaluation – Medical History) should find many, but not all, conditions that could cause sudden death in the athlete. This is because some diseases are difficult to uncover and may only develop later in life. Others can develop following a normal screening evaluation, such as an infection of the heart muscle from a virus. This is why a medical history and a review of the family health history need to be performed on a yearly basis. With proper screening and evaluation, most cases can be identified and prevented.

Why have an AED on site during sporting events

The only effective treatment for ventricular fibrillation is immediate use of an automated external defibrillator (AED). An AED can restore the heart back into a normal rhythm. An AED is also life-saving for ventricular fibrillation caused by a blow to the chest over the heart (commotio cordis).

Texas Senate Bill 7 requires that at any school sponsored athletic event or team practice in Texas public high schools the following must be available:

- An AED is in an unlocked location on school property within a reasonable proximity to the athletic field or gymnasium
- All coaches, athletic trainers, PE teacher, nurses, band directors and cheerleader sponsors are certified in cardiopulmonary resuscitation (CPR) and the use of the AED.
- Each school has a developed safety procedure to respond to a medical emergency involving a cardiac arrest.

The American Academy of Pediatrics recommends the AED should be placed in a central location that is accessible and ideally no more than a 1 to 1 1 /2 minute walk from any location and that a call is made to activate 911 emergency system while the AED is being retrieved.

Student & Parent/Guardian Signatures

I certify that I have read and understand the above information.

Parent/Guardian Signature

Parent/Guardian Name (Print)

Date

Student Signature

Student Name (Print)

Date