SUDDEN CARDIAC DEATH IN YOUNG ATHLETES INFORMATION FOR STUDENT-ATHLETES AND PARENTS/LEGAL CUSTODIANS

What is sudden cardiac death in the young athlete?
Sudden cardiac death is the result of an unexpected failure of proper heart function, usually during or immediately after exercise without trauma. Since the heart stops pumping adequately, the athlete quickly collapses, loses consciousness, and ultimately dies unless normal heart rhythm is restored using an automatic external defibrillator (AED).

How common is sudden death in young athletes?
Rare. About 100 such deaths are reported in the US per year. The chance of death occurring to any individual high school athlete is about 1 in 200,000/year. Sudden cardiac death is more common in males than females; in football and basketball than in other sports; and in African Americans than in other races and ethnic groups.

What are the most common causes?
Research suggests that the main cause of is a loss of proper heart rhythm, causing the heart to quiver instead of pumping blood to the brain and the body. This is called ventricular fibrillation and is caused by one of several cardiovascular abnormalities and electrical diseases of the heart that may go unnoticed in healthy appearing athletes. The most common cause is hypertrophic cardiomyopathy, which is a disease of the heart with abnormal thickening of the heart muscle which can cause rhythm problems and blockages to blood flow. This is a genetic disease that may run in families and gradually develop over many years. The second most common cause is congenital abnormalities of the coronary arteries in which the blood vessels supplying the heart are formed abnormally. Other causes include myocarditis (inflammation of the heart, usually due to a virus), dilated cardiomyopathy (enlargement of the heart, often for unknown reasons), long QT syndrome and other electrical abnormalities of the heart, and Marfan syndrome (an inherited disorder involving abnormalities of the heart valves and major arteries, often seen in unusually tall athletes).

Are there warning signs to watch for?
Yes, in more than 1/3 of these sudden cardiac deaths, there were warning signs that were not reported or taken seriously. These include:

- History of a heart murmur
- Chest pains, at rest or during exertion
- Fatigue or tiring more quickly than peers
- Dizziness or lightheadedness, especially during exertion
- Fainting, seizure, or convulsions during physical activity
- Being unable to keep up with friends due to shortness of breath (labored breathing)
- Fainting or seizures during emotional excitement, emotional distress, or being startled
- Palpitations-awareness of the heart beating unusually (skipping, irregular, or extra beats) during athletics or cool down periods after athletic participation
- Family history of sudden death during physical activity or during a seizure
- Family history of sudden, unexpected death before age 50

- Family history of cardiac or aortic disease under 50 years of age

When should a student athlete see a heart specialist?
If the primary care provider or school physician has concerns, referral to a pediatric cardiologist is recommended. This specialist will perform a more thorough evaluation, including an electrocardiogram (ECG), which is a graph of the electrical activity of the heart. An echocardiogram (ECHO), which is an ultrasound of the heart to allow for direct visualization of the heart structure may also be done. Other possible tests include a treadmill exercise test and monitor to enable longer recording of heart rhythm. None of the testing is invasive or uncomfortable.

Can sudden cardiac death be prevented through proper screening?
A proper evaluation should find most, but not all, conditions that would cause sudden death in the athlete. That 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. That is why screening evaluations 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.

Sudden Cardiac Arrest Awareness Statement

If there is anything on this sheet that you do not understand, please ask an adult to explain or read it to you.

Student-Athlete Name:_____

Parent/Legal Custodian Name:_____

☐ We have read the Student-Athlete and Parent/Legal Custodian Sudden Cardiac Death in Young Athletes Information Sheet.

After reading the information sheet, I am aware of the following information:

Student-Athlete Initials		Parent/Legal Custodian Initials
	Chest pain with exercise should be reported to my parents, my coaches or a medical professional if one is available.	
	Dizziness, lightheadedness or fainting with exercise or just after exercise should be reported to my parents, my coaches or a medical professional if one is available.	
	Palpitations (skipping, irregular or extra beats) during athletics or cool down periods after athletic participation should be reported to my parents, my coaches or a medical professional if one is available.	
	A history of murmur or other known cardiac abnormalities should be reported as a part of the preparticipation sports physical	
	A family history of sudden, unexpected death before age 50 or inheritable cardiac disease should be reported as a part of the preparticipation sports physical.	
	I/my child will need written permission to participate in athletics from a medical professional should warning signs or abnormalities be noted on preparticipation sports physical.	
	I realize that further testing for cardiac disease may be necessary if warning signs or abnormalities are noted on preparticipation sports physical.	

_____ Signature of Student-Athlete	_____ Signature of Parent/Legal Custodian
_____ Date	_____ Date