Cypress ECG Project

Cardiac screening should be part of your physical at least once while in high school. The level of competition and effort required to compete increases significantly. Students who defined themselves as outstanding athletes in middle school learn how to push their bodies to new levels as their peers mature and get bigger and stronger. The human body changes during puberty externally in a variety of ways as well as internally. One of these internal changes is the structure of the heart. Genetic factors define the final structure of the heart at a time where additional stresses are being placed on the heart and lungs during practice and games.

Cardiac screening can be done to detect a variety of potentially catastrophic genetic diseases. The simplest level of testing is an Electrocardiogram (ECG). This test looks at the electrical signals that the heart uses to contract and circulate blood through the body and lungs. The test takes 12 seconds and requires electrodes to be placed around the heart to record the signals that it produces. A Cardiologist can look at the signal and detect a large number of heart diseases based on the timing of muscles contracting, valves opening and closing, and muscles releasing. Diseases like Hypertrophic Cardiomyopath (HCM), Long QT Syndrome, Wolff-Parkinson-White Disease, Arrhythmia, and Abnormal Right Ventricular Disease can be detected with an ECG. On average 95% of all student athletes have no problems or issues.

In some athletes, about 4.5%, results are inconclusive or suggest something that an ECG can not detect and an Echocardiogram (Echo) is recommended. Ultrasound is used to get a picture of the heart using sound waves. This is similar to a sonogram that is done to look at a baby in the mother's womb. The picture looks for valve and vein structure, muscle thickness, and proper operation of the heart. This in conjunction with an ECG can detect diseases like Brugada Syndorome or occlusions of the aorta and veins.

Cardiac screening helps detect the one in two thousand student athletes that are at risk for sudden cardiac death (0.5% overall). A recent study of NCAA participants shows that male basketball players have a one in three thousand chance of collapsing on the court from heart conditions. The odds are similar for lacrosse, water polo, and cross country.

A simple 12-second cardiac screening can help detect problems before they become major medical issues. You should be screened if

- family history indicates that there is a heart disease risk
- dizziness during athletics
- fainting spells or weakness while participating
- shortness of breath that does not clear quickly
- chest pain while participating
- you are competing in high impact sports that increases your heart rate for long periods of time

The Cypress ECG Project has screened over 20,000 student athletes in Texas. Seven have had corrective surgery or implants to correct for heart disease. Five of these students are back participating in sports. It all started with a 12-second test to keep them active in sports.