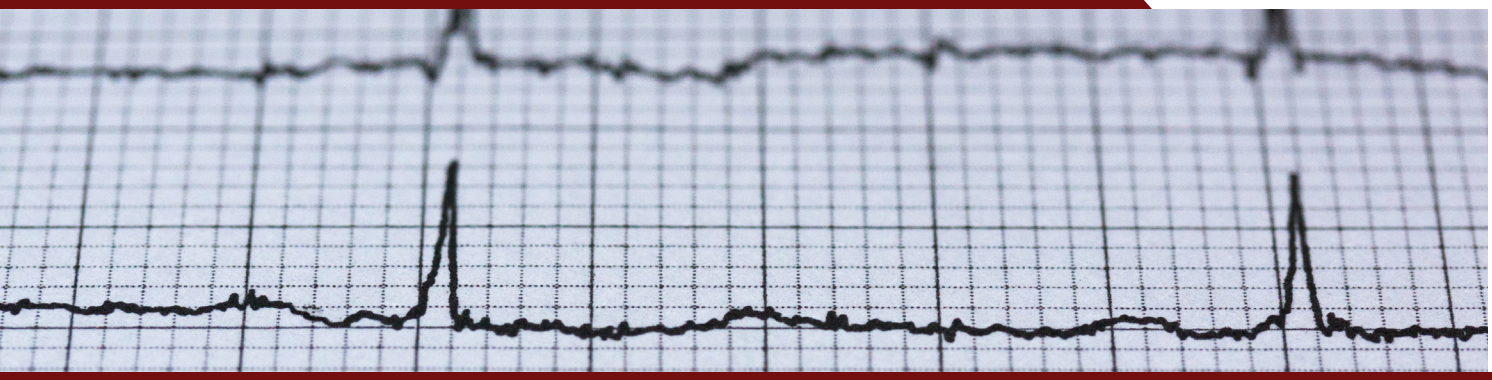
dell children's
Ascension



CARDIAC SCREENING FOR YOUNG ATHLETES

By: D. Byron Holt, MD, FSCAI
Division Chief, Pediatric Cardiology
University of Texas at Austin Dell Medical School
Dell Children's Medical Center

As specialists in advanced cardiac care, we are often asked our opinion regarding the best ways to keep young athletes safe from the unexpected. This is especially true after a sudden cardiac event involving a local high school athlete, or someone on a larger stage such as a collegiate or professional athlete. These stories are published across various types of media, and are instantaneously viewed by thousands of concerned parents. The fear of this possibility is understandable. While there is no way to prevent all possible injuries, we can optimize our ability to identify those young athletes at highest risk for sudden life threatening events, and treat them appropriately.

PHYSICAL EXAM AND HISTORY

The fundamental basis for all sports participation screening should include a thorough patient history and physical examination. This is required in most school systems on a yearly basis, and ensures that there are no obvious physical exam findings or worrisome history that might suggest a dangerous heart condition. A family history of sudden death under the age of 50, family members with "enlarged" or "weak" hearts, or multiple family members who inherited a heart problem should warrant referral to a specialist for further evaluation. Symptoms such as loss of consciousness in the middle of exercise,

exertional chest pain, or recurrent episodes of fast or irregular heart beat should lead to immediate restriction from participation and referral for cardiac evaluation. Families and educators should feel empowered to make these suggestions in the best interests of the child if there are any concerns whatsoever.

SCREENING PROGRAMS

However, many patients at risk for sudden death will have a normal physical exam and no concerning personal or family medical history. In fact, the top causes of sudden cardiac death in young athletes include hypertrophic cardiomyopathy (HCM), abnormal coronary arteries, Wolff-Parkinson-White syndrome (WPW), and other rare disorders of the heart muscle or electrical system. These rare disorders would only be suspected based on an abnormal ultrasound of the heart or electrocardiogram (ECG), and some then confirmed by genetic testing. While there are no state requirements in Texas regarding advanced cardiac screenings for student athletes, there are screening events available at no charge. One such example in Central Texas is through the non-profit organization Championship Hearts Foundation which seeks to diagnose patients with HCM, or abnormally thickened heart muscle, that places them at risk for fatal heart rhythms especially during exercise. With the help of volunteers including Cardiologists, athletes age 14-18 years undergo a limited echocardiogram (ultrasound) of the heart and ECG in order to identify HCM and some of the abnormalities described above. Each year, hundreds of student athletes are screened and some identified with lift threatening problems that require treatment. Programs like these are invaluable in identifying those at risk before any symptoms are apparent.

https://www.champhearts.org/

or Scan QR Code HERE >>>

PREPARATION FOR EMERGENCIES

Finally, recent initiatives have been focused on rapid, appropriate response to sudden cardiac events at youth sporting events. Efforts to place automated external defibrillators (AEDs) at all schools and sporting events, and training to use these simple devices, have saved lives and have been shown to be effective at resuscitation in the field long before a hospital can be reached. Studies have also shown that appropriate CPR used in conjunction with an AED saves lives and minimizes lasting injury. Coaches, educators, and parents should be aware of these valuable resources, develop action plans that ensure the locations of the AEDs are known to all and encourage those routinely in attendance to undergo CPR training.

Work is ongoing to understand the mechanisms of sudden death in young athletes and how to prevent it. By incorporating all of these aspects of screening and preparation into our routine management, we aim to limit the risk and allow for safe participation in Texas youth athletics.

CHAMPIONSHIP HEARTS FOUNDATION