SUDDEN CARDIAC DEATH IN YOUNG ATHLETES

The Basic Facts on Sudden Cardiac Death in Young Athletes

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Other diseases of the heart that can lead to sudden death in young people include:
- Myocarditis (my-oh-car-DIE-tis), an acute inflammation of the heart muscle (usually due to a virus).
- Dilated cardiomyopathy, an enlargement of the heart for unknown reasons.
- Long QT syndrome and other electrical abnormalities of the heart which cause abnormal fast heart rhythms that can also run in families.
- Marfan syndrome, an inherited disorder that affects heart valves, walls of major arteries, eyes and the skeleton. It is generally seen in unusually tall athletes, especially if being tall is not common in other family members.

What are the current recommendations for screening young athletes?

New Jersey requires all school athletes to be examined by their primary care physician ('medical home') or school physician at least once per year. The New Jersey Department of Education requires use of the specific Preparticipation Physical Examination Form (PPE).

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.

The primary healthcare provider needs to know if any family member died suddenly during physical activity or during a seizure. They also need 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 for each exam because it is so essential to identify those at risk for sudden cardiac death.

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 further evaluation or testing is recommended.

Are there options privately available to screen for cardiac conditions?

Technology-based screening programs including a 12-lead electrocardiogram (ECG) and echocardiogram (ECHO) are noninvasive and painless options parents may consider in addition to the required PPE. However, these procedures may be expensive and are not currently advised by the American Academy of Pediatrics and the American College of Cardiology unless the PPE reveals an indication for these tests. In addition to the expense, other limitations of technology-based tests include the possibility of “false positives” which leads to unnecessary stress for the student and parent or guardian as well as unnecessary restriction from athletic participation.

When should a student athlete see a heart specialist?

If the primary healthcare provider or school physician has concerns, a referral to a child heart specialist, 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, which is an ultrasound test to allow for direct visualization of the heart structure, will likely also be done. The specialist may also order a treadmill exercise test and a monitor to enable a longer recording of the heart rhythm. None of the testing is invasive or uncomfortable.

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).

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