

Resources

athletes
http://www.sudden-death-in-athletes.org/sudden-death-in-athletes
American Heart Association
http://www.heart.org

Agencies:

Pediatrics

1000, Suite 108



Department of



Department of Education



Department of Health

Academy of Pediatrics,

Dr. Sushma Raman Hebbbar,
MD, PhD

Department of Education,
and Senior Services,
New Jersey Chapter, NJ
State, Pediatric Cardiologists,
Nurses

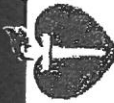
DeWitt-Parker, MSN, CSN, RN;
Susan Martz, EdM;
Elizabeth Rosenberg, MD,
Robert Weinstock, MD

SUDDEN CARDIAC DEATH IN YOUNG ATHLETES

The Basic Facts on Sudden Cardiac Death in Young Athletes

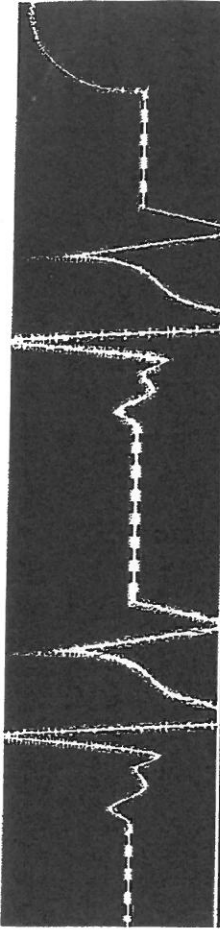


STATE OF NEW JERSEY
DEPARTMENT OF EDUCATION



American Heart
Association

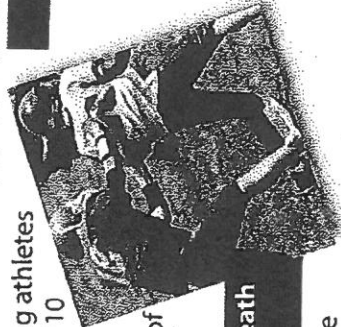
Learn and Live



SUDDEN CARDIAC DEATH IN YOUNG ATHLETES

Sudden death in young athletes

between the ages of 10 and 19 is very rare. What, if anything, can be done to prevent this kind of tragedy?



What are the most common causes?

Research suggests that loss of proper heart rhythm to quiver instead of blood to the brain and body (ventricular fibrillation) is the problem. The problem is caused by one of several cardiovascular and electrical diseases of which many are not noticed in healthy-appearing athletes.

What is sudden cardiac death in the young athlete?

Sudden cardiac death is the result of an unexpected failure of proper heart function, usually (about 60% of the time) 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 automated external defibrillator (AED).

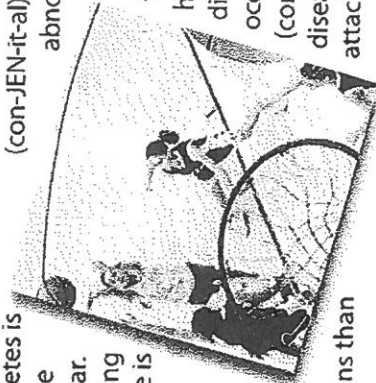
How common is sudden death in young athletes?

Sudden cardiac death in young athletes is very rare. About 100 such deaths are reported in the United States per year. The chance of sudden death occurring to any individual high school athlete is about one in 200,000 per year.

Sudden cardiac death is more common: in males than in females; in football and basketball than in other sports; and in African-Americans than in other races and ethnic groups.

The most common cause in an athlete is hypertrophic cardiomyopathy (hi-per-TRO-fic CAR-dee) also called HCM. HCM is characterized by abnormal thickening of the heart muscle, which can cause problems and blockages. Genetic disease runs in families and develops gradually over

time. The second most likely cause is a congenital abnormality of the arteries. The blood vessels that carry blood to the heart in an athlete differ from those in a non-athlete (commonly called "coronary artery disease," which can lead to a heart attack).



SUDDEN CARDIAC DEATH IN YOUNG ATHLETES

heart that can lead to sudden cardiac death in young people include:

• Hypertrophic cardiomyopathy (H-CM), an acute enlargement of the heart muscle (usually

caused by an enlargement of the heart muscle for unknown reasons).

• Long QT syndrome, an abnormality of the heart's electrical system that causes irregular heart rhythms that can also lead to sudden cardiac death.

• Brugada syndrome, an inherited disorder of the heart's electrical system that causes irregular heart rhythms that can also lead to sudden cardiac death.

Signs to watch for?

• Fainting or dizziness during exercise or convulsions during exercise.

• Chest pain or shortness of breath during exercise.

• Family history of sudden cardiac death or other conditions that increase the risk of sudden cardiac death.

• 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.

• Family history of sudden cardiac death or other conditions that increase the risk of sudden cardiac death.

- Palpitations - awareness of the heart beating unusually (skipping, irregular or extra beats) during athletics or during cool down periods after athletic participation;
- Fatigue or tiring more quickly than peers; or
- Being unable to keep up with friends due to shortness of breath.

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 Annual Athletic Pre-Participation Physical Examination Form.

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.

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.

Can sudden cardiac death be prevented just through proper screening?

A proper evaluation should find most, but not all, conditions that would 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 screening evaluation of the family health history should be performed on a year athlete's primary health screening and evaluation. Cases can be identified.

Why have an AED on sports events?

The only effective treatment for sudden cardiac death is immediate automated external defibrillation. An AED can restore the heart to normal rhythm. An AED is used on the chest over the heart. Effective September 1, 2011, the Department of Education requires all public and nonpublic schools to have an AED through 12 shall:

- Have an AED available at all school events (three minutes before and return with the AED)
- Have adequate personnel trained in AED use present at all school games;
- Have coaches and athletic trainers trained in basic life support techniques;
- Call 911 immediately after retrieving the AED.

Sudden Cardiac Death Pamphlet
Sign-Off Sheet

Name of School District: _____

Name of Local School: _____

I/We acknowledge that we received and reviewed the Sudden Cardiac Death in Young Athletes pamphlet.

Student Signature: _____

Parent or Guardian
Signature: _____

Date: _____