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YOUNG ATHLETES TO BE SCREENED FOR RISK OF SUDDEN HEART DEATH

African-American players at special risk of death from hypertrophic cardiomyopathy

Volunteer heart experts at Johns Hopkins have embarked on what is believed to be the largest single-day event to date to screen young athletes in the United States for early signs of life-threatening defects in the body's blood-pumping organ.

The volunteer medics are scheduled to test the hearts of more than 1,000 athletes, males and females age 16 to 18, attending the 2008 track and field championship games of the Maryland Public Secondary Schools Athletic Association. The event is taking place on the grounds of Morgan State University in Baltimore, at what the Hopkins team has dubbed the first-ever "Heart Hype" program.<

According to Johns Hopkins cardiologist [Theodore Abraham, M.D.](#), the stress of athletic competition poses ultra-dangerous risks to those who have inherited tendencies to develop overly enlarged and thickened hearts, [hypertrophic cardiomyopathies](#), or similar abnormalities. These players have a higher than normal risk of sudden, potentially fatal heart rhythm disturbances or cardiac arrest, when the heart stops beating.

"Too many young athletes are dying unnecessarily," Abraham says of several thousand such sudden deaths per year in younger adults in the United States by some estimates. "The most frustrating thing is that so many athletes are seemingly unaware about the consequences of putting too much strain on their abnormal cardiac muscle during vigorous exercise."

Many cases go undiagnosed, he says, because the young athletes' healthy appearance and peak physical condition may mask their underlying sickness. Experts estimate that one in 500 Americans has undiagnosed hypertrophic cardiomyopathy. But African-Americans are more vulnerable, with two to three times the rate of sudden cardiac death than in whites.

The Johns Hopkins team of more than 70 includes cardiologists, led by Abraham, along with medical residents, nurses, ultrasound technicians, administrative assistants and community volunteers. They will run a series of heart tests from 10 a.m. to 4 p.m., Saturday, May 24, on athletes who volunteer to be checked in Morgan State's Hurt Gymnasium.

The checkup will include a basic questionnaire to review any past history of chest pain, shortness of breath, fainting spells, instances of sudden cardiac death in relatives, weight and blood pressure measurements, and tests for unusual heartbeats or murmurs. Each athlete will receive a cardiac ultrasound, or echocardiogram, to measure heart size and its pumping function, including blood volume, and to check for faulty valves; an electrocardiogram, or EKG, to assess the heart's electrical rhythms will also be given.

Test results will be reported to each athlete on site, along with recommended follow-ups if problems are detected.

"Young athletes and their parents should feel secure in pursuing physical fitness to the best of their children's abilities and without the unknown risk from sudden cardiac death," says Abraham, an associate professor at the Johns Hopkins University School of Medicine and its Heart and Vascular Institute.

"Our goal is to make this not only an annual program in Maryland, but to serve as a model for other programs to start across the country, state by state, city by city, if necessary," he adds, noting that other countries, such as Italy and Japan, have since the early 1980s run regular school programs to screen teenage athletes and non-athletes for possible heart problems. Health officials in one region of Italy reported that screening had saved at least 22 lives.

In 2004, the International Olympic Committee recommended that all athletes be EKG-tested every two years for potential heart abnormalities. However, the U.S. Olympic team does not require physical exams for its competing athletes, but instead offers voluntary cardiac screening.

Indeed, the first documented case of sudden death dates back to 490 B.C., to the Greek origins of what is now the Olympic marathon, when Pheidippides collapsed and died after announcing military victory over the Persians.

If there had been better understanding and appreciation for the risks involved with these heart abnormalities, Abraham says, it may have saved the life of Baltimore native Reggie Lewis, 27, a basketball player for the Boston Celtics, who in the summer of 1993 dropped dead on the court from cardiac arrest, likely triggered by an overly enlarged and thickened heart.

Risk reduction strategies to prevent cardiac arrest include avoiding rigorous sports; taking drugs called beta-blockers that temper the heartbeat, preventing it from beating too fast; or implanting defibrillators that can shock the heart back into normal electrical rhythm.

In the last decade, Abraham has treated dozens of athletes with overly enlarged hearts, whose vulnerable condition precluded any highly strenuous activity, citing the rising numbers as what compelled him to organize the weekend screening.

Among the most notable fatalities to date, he says, was basketball player Lewis, a graduate of Dunbar High School who was also African-American. Though having collapsed earlier in the year, which weakens, inflames and enlarges the muscle, Lewis continued to play, not fully aware of the danger to his heart.

In Lewis' honor, his mother, Peggy Rich, has endorsed the "Heart Hype" event and plans to speak at a reception being held the night before.

Testing supplies for the event were donated by The Johns Hopkins Hospital. Ultrasound and EKG equipment was provided by GE Healthcare, a unit of General Electric. The use of GE equipment for this event does not constitute or imply endorsement by Johns Hopkins of GE products or services.

For additional information, go to:

<http://www.hopkinsheart.org/clinical-services/centers-excellence/center-excellence-hcm.html>

<http://www.4hcm.org/WCMS/index.php?overview>

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LIST OF SUSPECTED OR REPORTED CASES OF SUDDEN CARDIAC DEATH AMONG ATHLETES

Pheidippides, under 20 years old, and the "first" Olympic marathoner in ancient Greece, who died after reaching his destination in 490 B.C.

Baltimore native **Reggie Lewis**, 27, a basketball player for the Boston Celtics, whose heart arrested (suddenly stopped beating) in the summer of 1993 during basketball practice. Autopsy results showed he had an overly enlarged and thickened heart.

Ryan Shay, 28, a top-ranked U.S. marathon runner training for the Olympics, who suffered from cardiac arrest part way through the 2007 New York marathon. Though the cause of death is still pending, Shay, who hailed from a prominent Michigan family of runners, had been diagnosed with a large heart at 14, and his brother had quit competitive sports after being diagnosed with arrhythmia.

Damien Nash, 24, a football player with the Denver Broncos, who died in 2007 of an undiagnosed heart problem after playing in a charity game to benefit a foundation named in his brother Darris' honor. Darris, a heart transplant recipient, had suffered from a cardiomyopathy that was not believed to be genetic.

Jason Collier, 28, an Atlanta Hawks football player who died suddenly in 2005 during the off-season and while on route to hospital, from what a medical examiner later ruled was a "sudden heart rhythm disturbance caused by an abnormally enlarged heart." Collier had twice been given EKGs, both of which had shown abnormalities, but no follow-up was ever recorded.

Thomas Herrion, 23, a San Francisco 49ers football player who in 2005 collapsed in the locker room, after suffering what appeared to be a heart stoppage. Autopsy results confirmed a blocked artery, which experts ruled a result of hypertrophic cardiomyopathy.

Ken Derminer, 17, who died suddenly in 2000 during college football practice. The Ohio native's parents also set up a foundation, Kids Endangered Now, or KEN for short, to promote awareness about sudden cardiac death among youth athletes.

Chad Butrum, 26, a football player from southern California who in 1994 died during a game from cardiac arrest, which was later diagnosed as hypertrophic cardiomyopathy. His mother, Arista, set up the Chad Foundation in his honor and to raise awareness about the condition.

Hank Gathers, 23, a basketball player at Loyola Marymount University in Los Angeles, Calif., who collapsed on the court from cardiac arrest in 1990, dying in hospital shortly thereafter. He had been treated for an abnormal heartbeat, but only at autopsy was it learned that he had an overly enlarged heart.

Andrew Helgeson, 18, was an all-star lacrosse player from Silver Spring, Md., who died suddenly from cardiac arrest in May 2005, a week before his high school graduation. The precise cause of Helgeson's heart trouble remains unknown. In his honor in 2006, the State of Maryland enacted "Andrew's Law," which as a safety measure placed automated external defibrillators in all state high schools and at all school-sponsored sports events.

SURVIVORS

Domenico Fioravanti, 30, Olympic gold medalist in the 100- and 200-metre breaststroke at the 2000 Sydney Games, was diagnosed in 2004 during his native Italy's annual screening for hypertrophic cardiomyopathies. By Italian law, he had to withdraw from competitive sports and now has an implanted defibrillator. Though, Fioravanti has been okayed by his cardiologist to pursue some active sport.

Nicholas Knapp, at 17, was a star recruit for Northwestern University's basketball team in 1994, until he collapsed from cardiac arrest in the middle of a game. Knapp was revived on the scene, and later, in hospital care, was diagnosed with hypertrophic cardiomyopathy, after which he had a defibrillator implanted.

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