

# Teen athletes' sudden deaths spur call for heart screening

Better testing could help identify those at risk for sudden cardiac death, experts say



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Early in September, Oregon high school football star Hayward Demison dropped to the ground with a stilled heart after scoring a touchdown. Just a week later, in Texas, high school senior Reggie Garrett collapsed when his heart stopped shortly after he threw a touchdown pass. Then in early January, Zach Gabbard's heart stopped as he was running down the court in the middle of a Minnesota high school basketball game.



Valentino Mauricio / AP

Reggie Garrett, a Texas high school senior, died in September when his heart stopped after he threw a touchdown pass.

The recent spate of highly visible instances of hidden heart defects falling on teen athletes has renewed the debate



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most students get a routine physical before the season starts. That exam isn't always done by a doctor and it often doesn't include a test called an electrocardiogram, or ECG, that can uncover signs of dangerous, irregular heart rhythms.

Because the ECG doesn't catch every damaged heart and it sometimes flags hearts as potentially defective when they are perfectly healthy but are enlarged because of rigorous training, many cardiologists counsel against including ECGs in routine pre-season physicals. The downside to misidentifying healthy hearts as damaged, they say, is that kids may unnecessarily be encouraged to give up the sports they love.

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Still, some doctors say the imperfect test is better than nothing, because it provides the opportunity to save lives. And in a few areas of the country ECGs are part of every teen athlete's preseason physical.

Michelle Snyder believes an ECG might have saved the life of her daughter, Jenny. The 17-year-old died Aug. 21, 2008, after a sudden cardiac arrest on a soccer field. Afterward, the family learned that her daughter had been born with a structural heart defect — something neither she nor Jenny's doctors ever picked up on.

"Jenny absolutely did not have one symptom of sudden cardiac arrest or heart issues," said Snyder. Now she advocates screening all student athletes with ECGs. "We have the technology available and we can save lives," she said.

But Dr. Roshini Raj, a TODAY contributor as well as an assistant professor at the NYU School of Medicine and Health magazine's medical editor, cautions it's not as simple as it may appear.

"When you're talking about a mass screening program, you want to make sure the benefit is really clearly there and [the American Heart Association] doesn't feel that the scientific evidence is sufficient," she explained.

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Until there is a better test to screen for hidden defects, the best defense against cardiac arrest may be a quick medical response, experts say. The hearts of Demison and Gabbard, both 17, were restarted within minutes by nurses who happened to be on the scene at their games. Garrett wasn't as lucky: He died after being rushed to the hospital.

No one knows exactly how many teens experience sudden cardiac arrest each year. But data collected by the National Center for Catastrophic Sport Injury Research suggests that 15 high school athletes die each year due to heart-related problems, said Frederick Mueller, director of the center at the University of North Carolina, Chapel Hill.

Tragically, Kimberly Gillary was one such athlete. The 15-year-old competitive swimmer's heart stopped during a water polo game for her Troy, Mich., high school team in 2000. Gillary managed to get to poolside, but then collapsed. An autopsy later revealed a previously undetected condition called hypertrophic cardiomyopathy, which can thicken the lining of the heart muscle.

Kimmi was a really good athlete, said her dad, Randy Gillary: "She played basketball and had been swimming since she was 4. She was in really good physical condition."

Once the Gillary family knew what had killed their daughter, they set up a [foundation to raise awareness about the dangers of undetected heart problems in teens](#).

Currently, [the American Heart Association's 12-point screening program](#) for identifying athletes at risk of sudden cardiac arrest relies on a physical exam and a careful interview designed to uncover signs of heart problems in both the teen and her family. Teens are asked if they've ever fainted or had chest pain or fatigue associated with exercise. Then they are asked whether anyone in the family was

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kimberlysgift.org

Kimberly Gillary's heart stopped during a water polo game for her Troy, Mich., high school team. An autopsy later revealed the 15-year-old had a previously

disabled or died of heart disease before age 50.

undetected condition called hypertrophic cardiomyopathy, which can thicken the lining of the heart muscle.

In a physical exam, doctors look for heart murmurs, problems with the artery leading away from the heart, and signs of Marfan syndrome, a condition that leads to tall stature as well as weakening of the heart's major arteries.

The Heart Association doesn't recommend that every high school athlete get ECGs because of problems with the test and because of the high cost of screening so many students, said Dr. Stephen Daniels, a spokesman for the association and chair of the department of pediatrics at the University of Colorado School of Medicine.

But that advice doesn't sit well with Dr. David E. Haines, director of the heart rhythm center at Beaumont Hospital in Royal Oak, Mich. A few years ago, Haines read an Italian study that showed a big reduction in sudden cardiac arrests in teen athletes after the Italian government instituted mandatory screening that included an ECG.

Haines wanted to see if he could duplicate those results, and he set up a program to screen high school athletes at their schools. All the participating doctors donated their time for free, Haines said.

"At Beaumont we've created a model whereby you can do ECG screening and echocardiograms in a small subset of kids at a cost of about \$9 per student," Haines said. "We've screened almost 5,000 kids so far and 30 or so have had significant enough issues that we needed to follow up with more tests."

Some of those kids ended up getting surgery and some others were treated with medications, Haines said.

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### Forcing healthy athletes to give up sports?

Even if testing could be done inexpensively, some cardiologists would still oppose using ECGs as screening tests. The problem is that too many healthy athletes would be forced to give up playing sports, said Dr. Kevin Shannon, a professor and director of the pediatric cardiac arrhythmia program at the University of California, Los Angeles.

In the Italian study, one in 50 athletes were told they couldn't play as a result of the ECG tests, Shannon said. "To prevent one death in the U.S., where there's a lower rate of inherited heart conditions that lead to sudden cardiac arrest, you'd have to stop almost 2,000 kids from playing sports," he added.

"A significant number of elite athletes have abnormalities," Shannon said. "I would love to prevent all these tragic deaths, but I'm not sure we'd be able to do that if we instituted a screening program that included ECGs for everyone."

Shannon hopes that researchers will come up with a better screening test soon. Until that time, one thing parents can do to protect their kids is to make sure that there is an automated external defibrillator (AED) at all high school sporting events and practices.

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