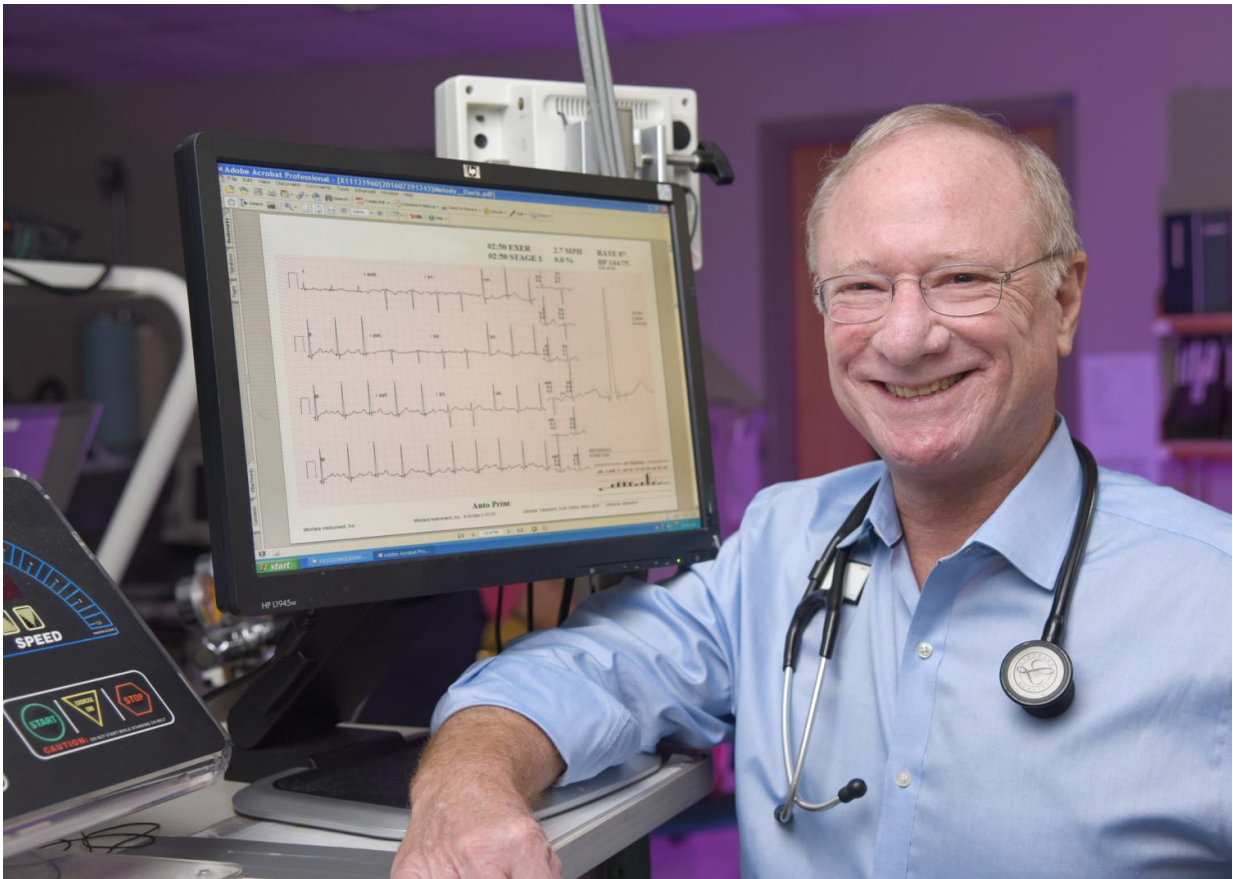


Study to examine value of ECG testing for high school athletes

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Dr. Benjamin Levine, Director of the Institute for Exercise and Environmental Medicine Credit: UT Southwestern Medical Center

UT Southwestern Medical Center heart specialists will study whether

electrocardiograms (ECGs) are useful in identifying Texas high school student athletes who are at risk of suffering sudden cardiac death.

Student athletes and band members from two North Texas high schools who volunteer to participate will be randomly assigned to receive either the typical pre-sports physicals or one that includes ECGs tests.

Approximately 8 million students play [high school](#) sports and one study estimated that 66 athletes ages 13 to 25 die from sudden cardiac arrest each year, according to the American Heart Association.

"It is a tragedy when a young person dies of [sudden cardiac death](#), and physicians want to do everything possible to prevent such occurrences. But it is a rare event and there are costs, both social and financial, to ECG screening," said Dr. Benjamin Levine, Director of the Institute for Exercise and Environmental Medicine at Texas Health Presbyterian Hospital Dallas, a joint operation of Texas Health Resources and UT Southwestern.

"In the high school age group, there will be more false positives than real problems identified, with the result that some healthy students may be exposed to risky tests and procedures, or unnecessarily prohibited from participating in school athletics. The only way to find out if the benefits outweigh the problems is to do a clinical trial," said Dr. Levine, Professor of Internal Medicine, who holds the Distinguished Professorship in Exercise Sciences at UT Southwestern.

Not all conditions that are associated with [sudden cardiac arrest](#) can be identified by an ECG. Conditions that potentially can be identified by an ECG include hypertrophic cardiomyopathy, right ventricular cardiomyopathy, long QT syndrome, and Wolff-Parkinson-White syndrome.

"No more than 4 or 5 percent of the ECGs will be abnormal; no more

than 0.5 percent will have a serious cardiovascular disease," said Dr. Levine, who holds the S. Finley Ewing Chair for Wellness and the Harry S. Moss Heart Chair for Cardiovascular Research at Texas Health Presbyterian Hospital Dallas.

Student athletes and band members at high schools in the Richardson Independent School District and the Keller Independent School District will be invited to take part in the randomized, prospective clinical trial, called the North Texas ECG Pilot Study. At half of the high schools, [student athletes](#) will get the standard history and physical required for participation in school sports. At the other high schools, student athletes will be given an ECG in addition to the history and physical. All of the student participants will then be followed for four years, using a Facebook group as the entry point for contact. Participation by students is voluntary.

The 12-lead ECG screening will take place during the last two weeks in September for students who will be participating in winter and spring 2017 sports and the first two weeks in December for students who participated in summer and fall 2016 sports (the December ECG group will be tested after their sports participation). ECG results will not be provided to the school districts. Parents can decide whether to follow up further on the ECG results. Local cardiologists will provide an initial follow-up evaluation and, if indicated, an echocardiogram at no charge to students with ECGs that show a potential problem.

Groups that have advocated for ECGs for high school athletes will be collaborating with the study. The Championship Hearts Foundation, an Austin organization that provides free screenings to high school students, will play a key role in the performance of the tests. The Cody Stephens Go Big or Go Home Foundation, a Houston organization, has provided funding to help with the study. And the Living for Zachary Foundation, a Dallas-area group, will also assist with the ECG testing.

"It is critical that all stakeholders including sports medicine physicians, cardiologists, and patient advocacy groups be engaged in this pilot study so that all parties feel that the results will be informative and relevant," said Dr. Levine.

A key challenge for researchers was devising a way to follow the participants, who will disperse as they graduate from high school and move on to college and jobs.

"It is a very fluid population, but cellphones travel with them," Dr. Levine said.

The goal of pilot study is to determine if the methodology of the study, including following up with students via text messaging, is workable. If successful, researchers plan to conduct a larger-scale study that will provide a definitive answer to the question of whether mandatory ECG testing for high school athletes is beneficial.

Provided by UT Southwestern Medical Center

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