



## **ADDITION OF ELECTROCARDIOGRAM (ECG) TO PRE-PARTICIPATION SCREENING OF YOUNG ATHLETES IS MOST EFFICIENT AT FINDING HEART ABNORMALITIES**

*Presented at Heart Rhythm 2014, largest study to use modern interpretation criteria of ECGs led to more accurate detection of cardiac conditions*

SAN FRANCISCO, May 2014 – A new study has found that adding an electrocardiogram (ECG) to existing pre-participation screening of high school athletes increases the likelihood of identifying disorders associated with sudden cardiac death. By using modern interpretation criteria, screenings resulted in fewer false-positive rates, which leads to more accurate detection. The new findings were presented today at Heart Rhythm 2014, the Heart Rhythm Society's 35<sup>th</sup> Annual Scientific Sessions.

The prospective study was conducted at 23 high schools in the greater Seattle area from October 2010 through June 2013. Competitive athletes ages 13-19 underwent a screening protocol that included a heart health questionnaire and physical recommendations based on the current American Heart Association (AHA) recommendations, as well as a resting 12-lead ECG interpreted using athlete-specific criteria and limited echocardiogram.

Nearly 5,000 (4,812) athletes were screened, and 23 athletes were identified with a significant abnormality requiring further evaluation. Abnormal history or physical examination findings led to a diagnosis in 61 percent of disorders and an abnormal ECG led to a diagnosis in 70 percent. The addition of ECG led to detection in seven (30 percent) athletes not otherwise identified by AHA protocol.

“The debate has mostly been focused on whether or not to include ECG screening and this study shows it is not just about whether or not to include an ECG, but the importance of appropriate ECG interpretation in athletes,” said lead author Jordan M. Prutkin, MD, MHS, FRS, assistant professor at the University of Washington School of Medicine Center for Sports Cardiology. “We need to focus future research on how we can further develop better athlete-specific interpretation criteria, which in turn will help reduce sudden cardiac arrest in the young population.”

While the history and physical exam are important and recommended by AHA, the study found that these alone gave more false positive readings than the ECG. The ECG had a significantly lower false positive rate at 3.6 percent, when compared to the history (22.3 percent) and physical exam (14.9 percent). In addition, the ECG was better at positively predicting abnormalities than the history and physical examination.

When modern interpretation criteria is used, ECG screening increases the likelihood of detecting disorders associated with sudden cardiac death and may help ease anxiety about the results of the ECG screening and reduce associated costs. An integrated screening protocol using history, physical examination and ECGs should be considered for pre-participation screening in young athletes.

Heart Rhythm 2014 is the most comprehensive educational program for heart rhythm professionals, featuring more than 8,000 attendees, 250 educational sections and more than 130 exhibitors showcasing innovative products and services. The Heart Rhythm Society's Annual Scientific Sessions have become the must-attend event of the year, allowing the exchange of new vital ideas and information among colleagues from every corner of the globe.

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**About the Heart Rhythm Society**

The Heart Rhythm Society is the international leader in science, education and advocacy for cardiac arrhythmia professionals and patients, and the primary information resource on heart rhythm disorders. Its mission is to improve the care of patients by promoting research, education and optimal health care policies and standards. Incorporated in 1979 and based in Washington, DC, it has a membership of more than 5,800 heart rhythm professionals in more than 72 countries around the world. For more information, visit [www.HRSonline.org](http://www.HRSonline.org).

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