

## ESC: Finding Young Athletes' Heart Defects by 12-Lead ECG

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Published: September 04, 2008

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MUNICH, Sept. 4 -- Screening young athletes with a 12-lead ECG before participation can identify those with heart defects up to hypertrophic cardiomyopathy who had been cleared to play, said investigators here.

Antonio Pelliccia, M.D., of the Institute of Sports Medicine and Science in Rome, said he and colleagues tested the reliability of 12-lead ECG results by using echocardiography as a re-screening tool in 4,450 athletes who had been cleared.

Most reassuring was the finding that none of the athletes had hypertrophic cardiomyopathy, Dr. Pelliccia said at the European Society of Cardiology meeting here.

Speaking at a press conference that featured a number of studies dealing with the efficacy of cardiac screening of athletes, Dr. Pelliccia said there has been an ongoing debate about the best way to screen athletes.

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### Action Points

- Explain to interested patients that the American Heart Association/American College of Cardiology only recommend pre-participation ECG screening for individuals with known risk factors or a family history of sudden death.
- This study was published as an abstract and presented at a conference. These data and conclusions should be considered to be preliminary as they have not yet been reviewed and published in a peer-reviewed publication.

Italy adopted nationwide screening of athletes in the late 1990s, and in 2006 Domenico Corrado, M.D., Ph.D., of the University of Padua, and colleagues reported that the screening program resulted in a 90% drop in sudden cardiac events in one region of Italy. (See: [National Screening Slows Sudden Cardiac Deaths Among Athletes](#))

But in the U.S., mandatory screening is not considered viable, said Gordon Tomaselli, M.D., of Johns Hopkins. One problem, according to Dr. Tomaselli, is that there are simply "so many more athletes in the U.S., so screening

becomes much more difficult and much more expensive."

Another argument against screening, at least with a resting ECG, is the false positive/false negative problem, which many cardiologists predict would be very high.

But the findings from Dr. Pelliccia suggest that estimates of false positive/false negative rates may be too high.

Of the 4,450 athletes screened in his study, only 12 judged healthy by ECG were found to have cardiac anomalies that could increase their risk of sudden death.

Those 12 were four patients with myocarditis, three with mitral valve prolapse, two with Marfan's syndrome, two with aortic regurgitation with bicuspid valve, and one athlete who had arrhythmogenic right ventricular cardiomyopathy.

Another four athletes had left ventricular wall thickness of 13 mm, which was considered in the "gray-zone between hypertrophic cardiomyopathy and athlete's heart."

Two of those four were eventually diagnosed with hypertrophic cardiomyopathy during an eight-year follow-up.

Dr. Pelliccia and Dr. Tomaselli declared no conflicts. The study was funded by the Institute of Sports Medicines and Science in Rome.

**Primary source:** European Society of Cardiology

Source reference:

Pelliccia, A "What Is New in Cardiovascular Prevention and Rehabilitation" News in Sports Cardiology Sept. 2


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