

Preparticipation Screening for CVD in Competitive Athletes: Recommendations from the AHA/ACC

Key Points for Practice

- Physicians should use the AHA's 14-point screening guidelines, as well as those from other societies, combined with a history and physical examination to screen for cardiovascular abnormalities.
- Universal screening of the general population of young persons with 12-lead ECG is not recommended, although use in smaller cohorts with history and physical examination may be considered in a closely monitored setting.

From the AFP Editors

► See related Practice Guideline in an upcoming issue of *AFP*.

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In the United States, preparticipation cardiovascular screening for all athletes (not just those who are elite) consists of a personal and family history, and a physical examination without electrocardiography (ECG). Through such screening, those athletes with or suspected of having a possibly lethal genetic or congenital cardiovascular disease (CVD) can be identified and withdrawn from competition to decrease risks to themselves and their competitors, be treated, or be provided implantable cardioverter-defibrillators to prevent sudden death.

The American Heart Association (AHA) and American College of Cardiology (ACC) have provided recommendations regarding eligibility and disqualification of competitive athletes with cardiovascular abnormalities. The full guidelines can be found at <http://circ.ahajournals.org/content/132/22/e256.full>. This summary focuses on preparticipation screening.

Recommendations

When screening for genetic or congenital cardiovascular abnormalities, physicians should use the AHA's 14-point screening guidelines, as well as those from other

societies (e.g., preparticipation physical evaluation from the American Academy of Pediatrics), combined with a history and physical examination. The 14-point guideline includes the following assessment: chest pain or pressure related to exertion; unexplained syncope or presyncope; dyspnea, fatigue, or palpitations related to exercise; history of a heart murmur; elevated blood pressure; previous restrictions from sports; previous cardiac testing; family history of premature death; family history of disability from heart disease; family history of hypertrophic or dilated cardiomyopathy, long-QT syndrome, or other ion channelopathies, Marfan syndrome, significant arrhythmias, or specific genetic cardiac conditions; heart murmur on examination; femoral pulses for aortic coarctation; physical examination findings consistent with Marfan syndrome; and brachial artery blood pressure. The use of 12-lead ECG or echocardiography should not be limited to competitive athletes and may be considered as part of screening in smaller cohorts of young (12 to 25 years of age) healthy persons, with the physician closely involved and quality control measures in place. However, universal screening of the general population of young persons with 12-lead ECG is not recommended, regardless of athletic status. When utilized, the limitations of 12-lead ECG as a population screening test (e.g., false-positive or negative results) and cost should be taken into account.

Physicians should work toward standardizing the questionnaires used for screening high school and college athletes in the United States. Routine universal cardiovascular screening in the general population of young persons using history and physical examination alone is not recommended.

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