

Cardiac pre-participation screenings too restrictive for black athletes

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Many athletes undergo cardiac screening to detect possible heart conditions before being allowed to participate in student or professional sports. Current European screening guidelines, which are based on data from white athletes, can lead to the over-investigation and potential false disqualification of healthy athletes of African or Afro-Caribbean descent, according to research presented today at the American College of Cardiology's 61st Annual Scientific Session. The Scientific Session, the premier cardiovascular medical meeting, brings cardiovascular professionals together to further advances in the field.

The study examined the European Society of Cardiology's [screening guidelines](#), which are used by sports organizations throughout [Europe](#) to help doctors interpret electrocardiogram (ECG) results to identify athletes at risk for [sudden cardiac death](#). A 2011 report estimated one in 44,000 athletes die from sudden cardiac death each year. The U.S. counterpart to the European guidelines does not currently require an ECG.

Although the European guidelines were revised in 2010 to reduce false positives, they still flag many athletes with perfectly healthy hearts – particularly black athletes – according to the study. The researchers found 43 percent of black athletes participating in the study would be identified for further investigation under the 2010 guidelines. The study is in line with other evidence showing that athletic training causes heart changes in black athletes to a greater extent than is seen in white athletes. It is the first to show that the 2010 guideline revisions reduced false

positives in black athletes to a lesser extent than in white athletes.

"We need to develop ethnicity-specific guidelines when interpreting ECGs for the purposes of pre-participation screens, specifically when it comes to black athletes," said lead study author Nabeel Sheikh, MBBS, BSc (Hons), Cardiology Registrar and Clinical Research Fellow, St. George's Hospital and University of London. Dr. Sheikh added that unnecessary investigation of athletes "not only has massive cost implications, it also risks creating unnecessary anxiety. In the worst-case scenario, it may even lead to false and unfair disqualification from sports."

The researchers developed refined criteria to further reduce false positives; applying these refined guidelines reduced positive ECGs to 17 percent in black athletes and 5 percent in white athletes in the study.

Athletes' ECG screens can be difficult for doctors to interpret because athletic training commonly causes changes in the heart that would be considered worrisome in a non-athlete. Screening guidelines aim to help [doctors](#) distinguish between benign changes that are due to athletic training and abnormalities that are due to a potentially lethal heart condition.

Dr. Sheikh and his colleagues analyzed ECGs from 923 black athletes, 1,711 white athletes and 209 patients with hypertrophic cardiomyopathy, the leading cause of sudden death in young athletes in the United States, and compared them to current and previous guidelines. Under the 2010 European guidelines, 43 percent of the participating black athletes, 13 percent of white athletes and all of the hypertrophic cardiomyopathy patients would have been flagged for further investigation. Under previous [guidelines](#) (issued in 2005), 60 percent of black athletes and 49 percent of white athletes in the study would have been flagged.

"It shows that we do need to take ethnicity into account during pre-participation screening if we want to avoid over-investigation of black athletes," Dr. Sheikh said. "The implications for practice are potentially huge, given that in both the United States and the United Kingdom an ever increasing proportion of elite athletes are of African/Afro-Caribbean ethnicity."

Provided by American College of Cardiology

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