

Pre-participation screening guidelines are too restrictive and unfair for black athletes

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A new study by researchers at St George's, University of London published in the journal *Circulation* has found that current European screening guidelines used by sports organisations to detect heart abnormalities lead to over-investigation and potential false disqualification of black athletes with perfectly healthy hearts.

To protect the health of young sports people, many sports bodies now recommend or insist that athletes are screened for a number of heart disorders that can lead to [sudden death](#) but are easily detectable using an electrocardiogram (ECG) - a test that measures the electrical activity of the heart and detects abnormal heart rhythms. New research has found that the application of new screening criteria could reduce unnecessary investigations and potential disqualifications by around 30%.

Researchers, led by Clinical Research Fellow and Cardiology Registrar Dr Nabeel Sheikh, analysed the electrical activity of the heart using an ECG in 1208 black athletes, 4297 [white athletes](#), and 103 athletes with hypertrophic cardiomyopathy, a condition where the heart muscle becomes thickened and the leading cause of sudden death in young athletes worldwide. The ECGs were compared using current guidelines issued by the European Society of Cardiology (ESC), the newly published Seattle criteria, and a set of proposed "refined criteria" that take into consideration novel research findings and the effect of black ethnicity.

Although the ESC's screening guidelines, based predominately on data from white athletes, were revised in 2010 to reduce false positives, the researchers found that 40% of black athletes and 16.5% of white athletes participating in the clinical study would still be required to undergo further investigations under the ESC's current guidelines.

The Seattle criteria reduced the number of positive ECGs to 18.4% in black athletes and 7.1% in white athletes.

However the researchers' own refined criteria produced the greatest reduction: applying these new criteria reduced positive ECGs to 11.5% in [black athletes](#) and 5.3% in white athletes, without compromising the ECG's ability to detect sinister cardiac pathology.

This study could help refine current ECG [screening guidelines](#) and help reduce the burden of false-positive results and number of athletes falsely suspected to harbour a serious cardiac disorder during pre-participation cardiac screening.

Lead author, Nabeel Sheikh, said: "Our study shows that ethnicity must be taken into consideration during pre-participation screening if we want to avoid unnecessary investigations and false disqualification from sport. Unnecessary investigation of athletes not only has massive cost implications but it risks creating anxiety and undue stress. Our results also indicate that refining ECG criteria has a positive impact on not only black but also white [athletes](#). It is therefore our hope that the data from our study will provide an important evidence base for revising existing guidelines in the future and significantly reduce the burden of false-positive ECGs."

More information: "Comparison of ECG Criteria for the Detection of Cardiac Abnormalities in Elite Black and White Athletes." Nabeel Sheikh, et al. *Circulation* (2014), [m.circ.ahajournals.org/content ... LATIONAHA.113.006179](https://m.circ.ahajournals.org/content/129/11/1130)

Provided by American Heart Association

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