

Steroid doping tests ignore vital ethnic differences in hormone activity

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Current steroid (testosterone) doping tests should be scrapped for international sport, because they ignore vital ethnic differences in hormone activity, suggests research published ahead of print in the *British Journal of Sports Medicine*.

Testosterone, and other hormones that boost [testosterone](#) levels, such as growth hormone, are among the most widely abused performance enhancers used in sport, according to the World Anti-Doping Agency.

Evidence of abuse is determined by the testosterone: epitestosterone ratio, or T:E ratio for short, in the urine. The threshold is set at above four for everyone, and confirmed by chemical analysis (gas chromatography).

To highlight the inadequacy of the current test, the researchers tested the steroid profiles of football players of different ethnicities, after they had deliberately added steroid to their urine samples.

They used gas chromatography, and took account of a variation (polymorphism) in the UGT2B17 gene.

Previous research has indicated that variations in this gene account for some of the differences in the urinary T:E ratio between [men](#) of white and Asian ethnic backgrounds. The gene affects metabolism, and therefore the rate at which testosterone is passed out of the body into the urine.

They included 57 men of Black African [origin](#); 32 of Asian origin; 32 of Hispanic origin; and 50 of white (Caucasian) origin in their research. All the men were aged between 18 and 36.

The results revealed the [genetic variation](#) in almost one in four (22%) of the African footballers; in eight out of 10 (81%) of the Asian players; one in 10 of the white men, and in 7% of the Hispanic players.

Based on these findings, the Swiss researchers "recalibrated" the thresholds for each ethnic group.

The new T:E ratios were: 5.6 for men of African origin; 5.7 for white men, and 5.8 for men of Hispanic origin. For men of Asian origin, the ratio was 3.8.

A single indiscriminate threshold to pick up [steroid abuse](#) in international sport is "not fit for purpose," the authors conclude. Instead, the reference ranges should be tailored to an athlete's individual endocrinological (hormonal) passport, they suggest.

"[Such a] passport may detect modifications induced by abuse of testosterone and its precursors, but also alterations in the steroid profile caused by indirect androgen doping products," they conclude.

Source: British Medical Journal ([news](#) : [web](#))

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