

# New study will enable improved BMI assessments of ethnic children for the first time

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Credit: St George's, University of London

BMI is the most widely-used measure of obesity in children, but the existing 'one-size fits all' standards don't provide accurate readings for

UK South Asian or Black African children.

Now, researchers at St George's and University College London, funded by the British Heart Foundation and the National Institute for Health Research (NIHR), have developed a way to adjust BMI values for ethnicity, so that they reflect [body fat](#) more accurately. A simple online BMI calculator is also available to provide BMI adjustments. The findings have been published online in the *International Journal of Obesity*.

The new values are particularly important, given concerns about high levels of [childhood obesity](#) in the UK. It is crucial that accurate assessments of [body fat](#) in [children](#) are made to prevent, diagnose and manage the wider problem.

To come up with the BMI adjustments needed, the researchers looked at data from four recent UK-based studies which had made precise measurements of body fat in 1,725 children aged from 4 to 12 years old. The relationship between BMI and body fatness was explored in each ethnic group and compared to the BMI-body fatness relationship in White children, to derive the necessary BMI adjustments for South Asians and Black Africans.

Existing BMI values consistently overestimated body fat in UK children of Black African descent, and consistently underestimated body fat in UK children of South Asian descent. The adjustments therefore tend to lower BMI in Black African children and to increase BMI in South Asian children.

Mohammed Hudda, Research Fellow in Medical Statistics at St George's, University of London, said: "Childhood obesity is a major public health challenge in the UK, and this research will give healthcare professionals extra help in making accurate judgements when deciding

whether children, particularly of South Asian or Black African origin, are underweight, normal, overweight or very overweight (obese)."

"Of about 3.3million children of compulsory school age in state-funded primary education, approximately 275,000 are of South Asian ethnic origin and 170,000 of African origin, demonstrating the large number of children in the UK for whom these adjustments would be relevant."

Victoria Taylor, heart health dietician at the British Heart Foundation, said; "Being obese increases your risk of heart disease, as well as increasing a person's chances of developing other conditions like type 2 diabetes. Childhood [obesity](#) tends to track into adulthood, so the more accurate we can be at screening, identifying and monitoring children at an early age the better. This exciting research could allow parents and children to be given more accurate information needed to help guide their diet and lifestyle choices as early as possible."

**More information:** Mohammed T Hudda et al. Body-mass index adjustments to increase the validity of body fatness assessment in UK black African and South Asian children: a cross-sectional calibration study, *The Lancet* (2016). [DOI: 10.1016/S0140-6736\(16\)32292-9](https://doi.org/10.1016/S0140-6736(16)32292-9)

Provided by St. George's University of London

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