

# Global obesity estimates may miss more than half a billion worldwide

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Standard methods for estimating obesity may grossly underestimate the burden of overweight worldwide—on the scale of hundreds of millions—according to a paper published in *Obesity Reviews*. Associate professors Daniel Hruschka of Arizona State University's School of Human Evolution and Social Change and Craig Hadley of Emory University's Department of Anthropology are developing more accurate tools by taking a closer look at the different ways that people's bodies are built in different places around the world.

Body Mass Index (BMI)—a simple ratio of weight to height—is a standard front-line tool for assessing [body fat](#) and for identifying people who are at greater risk of fat-linked diseases, like diabetes and cardiovascular disease. But, since BMI relies only on height and weight, it can mistake people who are naturally stocky and muscular as overweight. On the flip side, naturally slender individuals may be able to pack on a great deal of body fat before standard BMI cutoffs identify these slender individuals as overweight or obese.

Organizations in some countries, such as Japan and China, have begun to propose modified cutoffs for assessing obesity and obesity-linked risk that are more appropriate for more slender body builds often found in East Asia. However, there is still no clear consensus how to adjust BMI cutoffs to deal with these population differences worldwide. Hruschka and Hadley present evidence from a number of studies that these variations in human form are widespread and can be quite dramatic—and that, by ignoring them, researchers underestimate adult

obesity levels (by over 400-500 million). Given that these differences appear to arise early in childhood, they may also misprioritize high-risk areas for child undernutrition.

The researchers' proposed solution to these biases relies on the idea of "basal slenderness." This is the expected BMI in a population before it begins to add excess fat due to urbanization, increasing opportunities for consumption of high-calorie foods and other changes due to modernization. Adjusting BMI for a population's basal slenderness gives each population a cutoff that reflects the amount of a person's BMI that is due to body fat versus other body tissues.

The benefits of using basal measurements are numerous: health researchers could better estimate the number of people who are overweight and underweight, thus allowing them to focus their efforts and resources on the regions most in need; physicians could more reliably evaluate their patients' current and future health needs; and subsequent studies could yield more effective solutions for preventing obesity and undernutrition.

**More information:** *Obesity Reviews*, [DOI: 10.1111/obr.12449](https://doi.org/10.1111/obr.12449)

Provided by Arizona State University

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