

New insights into links between national income and obesity

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Analysis of data from 147 countries has uncovered new insights into the positive relationship between national income and obesity rates. Debabrata Talukdar of the State University of New York at Buffalo and

colleagues present these findings in the open-access journal *PLOS ONE* on May 13, 2020.

Previous research has shown that, on average, as a country's national income rises, so too does its [obesity rate](#). However, the details of this [relationship](#)—and how other factors may influence it—have remained unclear.

To clarify this relationship, Talukdar and colleagues compiled data on obesity prevalence and Gross Domestic Product (GDP) per capita spanning the period from 1975 to 2014 for 147 countries. They used a statistical approach known as Bayesian hierarchical modeling to investigate links between obesity and GDP per capita, as well as the effects of other factors such as globalization and urbanization.

The analysis shows that a 1 percent rise in a country's GDP per capita is associated with an average increase in obesity rates of 1.23 percent for men and 1.01 percent for women. Previously, some have hypothesized that as countries reach higher income levels, obesity rates decline due to factors such as increased ability to invest in one's health. However, the new findings show that, while the association between obesity and national income is weaker at higher income levels, it does not turn negative.

The researchers also demonstrated that the [positive relationship](#) between obesity rates and national income is stronger for countries with higher levels of political globalization. However, the relationship is weaker for those with higher levels of urbanization and those with a higher fraction of agricultural output in national GDP.

This study predicts that global obesity rates will increase from 17.7 percent in 2014 to 21.6 percent in 2024, suggesting that policy initiatives could play an important role in combatting obesity in low- and [middle-](#)

[income countries](#) that are undergoing income growth.

The analysis did not address how income inequality within countries might impact the relationship between national income and obesity. The authors highlight this topic as an important consideration for future research.

The authors add: "We find population [obesity](#) prevalence to exhibit a strong and persistent positive relationship with national income. As most people currently live in low- and middle-[income](#) countries with rising incomes, our findings underscore the urgent societal imperatives for effective policy initiatives, especially those that target the concomitant nutrition transition process with economic affluence, to break or at least weaken this positive relationship."

More information: Talukdar D, Seenivasan S, Cameron AJ, Sacks G (2020) The association between national income and adult obesity prevalence: Empirical insights into temporal patterns and moderators of the association using 40 years of data across 147 countries. *PLoS ONE* 15(5): e0232236. doi.org/10.1371/journal.pone.0232236

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