

# Genetic risk for obesity grew stronger in 'obesogenic' environment

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Lending support to the idea that high-calorie diets, sedentariness and other aspects of the contemporary American lifestyle may be driving the obesity epidemic, UC San Francisco researchers have found that people who carry greater genetic risk for obesity were more likely to have a higher body mass index if they were born later in the 20th century.

The study, published Tuesday, July 5 in *JAMA*, looked at 7,482 white and 1,306 black participants in the U.S. nationwide Health and Retirement Study who were born between 1900 and 1958. Researchers calculated a genetic risk score for each participant, based on whether they had any of 29 genetic variants that are associated with [obesity](#), and looked to see how this score compared with their BMI.

The number of variants each person had did not increase in the population over time, while their effects on people did, pointing to environmental influences. The average effect of the genetic variants that the researchers measured was small, for example accounting for only about 1 percent of the variation in BMI among whites and about 1.4 percent for blacks.

The analysis found that average BMI increased over time for everyone in the study, even those with quite low genetic risk for obesity. But people with high [genetic risk](#) were affected the most.

"The influence of genetic factors depends on the environment in which we live, and these results show that our environment has changed so that

genes that in the past that had little or no effect on body weight now increase risk of obesity," said Maria Glymour, ScD, associate professor of epidemiology and biostatistics at UC San Francisco and the study's senior author. "We think this is because the genes that we know are associated with obesity simply have larger effects in obesogenic environments," she said.

Glymour said most previous studies have focused on just one aspect of the environment when looking at how it could enhance a person's genetic predisposition to obesity. Her group used birth cohort instead as an umbrella marker for the many factors that could be promoting the [obesity epidemic](#), which began in the late 1970s.

Glymour said researchers were surprised to discover the overall pattern was similar for blacks and whites, because most of the research identifying genes linked to obesity has been conducted in whites. Despite this, the genetic score that predicts BMI in whites also predicted it in blacks. And blacks who were born more recently experienced greater effects than those born earlier in the century.

Provided by University of California, San Francisco

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