

Genetic discovery found to influence obesity in people of African ancestry

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The largest genetic search for "obesity genes" in people of African ancestry has led to the discovery of three new regions of the human genome that influence obesity in these populations and others.

University of Louisville School of Public Health and Information Sciences Department of Epidemiology and Population Health researcher Kira Taylor, PhD, and her team today (April 14, 2013), published their findings in *Nature Genetics*.

The study involved more than 70,000 men and women of African ancestry, making it one of the largest genome-wide association studies. Within this population, researchers were able to identify three new common genetic variants, known as single [nucleotide polymorphisms](#) (SNPs), which are associated with [body mass index](#) (BMI) and obesity in the sample population. Also of significance, the study showed these genetic variants appear to affect BMI in the U.S. population among those with no known [African ancestry](#). In addition, nearly all genetic variants previously identified as being linked to obesity in populations of European descent also were shown to influence BMI in this sample of African descent.

"A person who carries these variants may be predisposed to having higher BMI or becoming obese, but it is important to note these genes only account for a small percentage of higher BMI in the population," Taylor said. "We know environmental and behavioral factors like poor diet and lack of physical activity are the main reasons for obesity."

"Our discovery provides evidence that genes can influence obesity; it paves the way for examining rare genetic variants that are thought to be influential in common diseases such as obesity and cardiovascular disease."

Rare genetic variants can be identified through genome-wide DNA sequencing, a technique only recently becoming cost-effective and feasible for most researchers, she said.

In the future, this type of biological information could help predict who is at higher risk for obesity, therefore helping individuals become more aware of their need for prevention through diet and lifestyle choices. Personalized treatment through medication to reduce obesity could be another part of the equation.

More information: "A meta-analysis identifies new loci associated with body mass index in individuals of African ancestry." *Nature Genetics*, 2013.

Provided by University of Louisville

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