Physical Activity Offset Effect of 'Obesity Genes'

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Contributing Writer

Two gene variants were found to confer risk for obesity, but that risk was offset by an intensely physical lifestyle in a study of an Amish community.

The findings suggest that in people genetically predisposed to obesity, high levels of physical activity can blunt that predisposition, said Evadnie Rampersaud, Ph.D., of the University of Maryland, Baltimore, and her associates. They performed DNA analysis of blood samples from an Old Order Amish population in Pennsylvania. The 704 subjects had also provided an objective measurement of physical activity by wearing an activity monitor for 1 week.

Members of the order eschew many modern conveniences and their daily lives tend to be physically demanding. Their mean age was 44 years. Prevalence of overweight was 54% and of obesity, 10%, in men; and 64% and 30%, respectively, in women.

The researchers analyzed 92 single-nucleotide polymorphisms (SNPs) located in an interval that spanned the FTO (fat mass and obesity–associated) gene and found two that significantly correlated with obesity. One of these, the A allele for rs1861868, was already known to confer a predisposition for obesity. The second SNP, the C allele of rs1477196, has not been associated with obesity before, they said (Arch. Intern. Med. 2008;168:1791-7).

When the subjects were stratified by level of physical activity, these variants were significantly associated with greater body mass index only in the 361 subjects with low levels of physical activity. High levels of physical activity in the remaining subjects seemed to blunt the association between the two alleles and obesity.

Mean activity levels in the high-activity group were about 900 kcal greater than those in the low-activity group, corresponding to about 3-4 hours of moderately intensive daily activity. ■