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Body mass index (Anderson, 2020)

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Metabolism | Obesity

STUDY SUMMARY

Identification of a novel regions on chromosome 11 that is associated with lower body mass index, lower insulin resistance, and favorable blood lipid levels.

STUDY DESCRIPTION

Obesity is a serious health problem that is caused by a combination of environmental and genetic risk factors. It is increasing in prevalence worldwide. Although genome-wide association studies have identified ~1,000 genetic variants associated with body mass index (BMI), which is a proxy of obesity, these genetic variants only explain ~6% of the heritability of BMI. In this study, researchers examined genomes of over 4,600 Greenlanders, an isolated population that harbors genetic diversity not found elsewhere, to identify additional genetic variants associated with BMI. They discovered a genetic variant on chromosome 11, rs4936356, located in an *intergenic* region. The effect allele is significantly associated with lower BMI, lower insulin resistance, and favorable blood lipid levels.

DID YOU KNOW?

Historically, Greenlanders had to endure extended periods of fasting due to limited food supply. Due to their geographic location, their diet is high-fat, primarily comprised of fish. Therefore, it is possible that their enhanced ability to burn fat instead of storing it has put them at lower risk of developing obesity.

YOUR DETAILED RESULTS

The variants highlighted in green have **positive effect sizes** and increase your genetic predisposition to higher BMI. The variants highlighted in blue have **negative effects sizes** and decrease your genetic predisposition to higher BMI. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to higher BMI. However, please note that genetic predispositions do not account for important non-genetic factors like lifestyle. Furthermore, the genetics of most traits has not been fully understood yet and many associations between traits and genetic variants remain unknown. For additional explanations, click on the column titles in the table below and visit our Nebula Library tutorial.

VARIANT	YOUR GENOTYPE	EFFECT SIZE	VARIANT FREQUENCY	SIGNIFICANCE
rs4936356_G NEW	A / A	-0.14 (–)	5%	3.20×10^{-8}