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Physical activity (Klimentidis, 2018)

Yann Klimentidi, et al.
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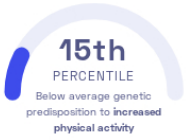
Behavior

STUDY SUMMARY

Identification of 9 genomic regions associated with habitual moderate-to-vigorous physical activity.

YOUR RESULT



STUDY DESCRIPTION

Being physically active is one of the most important things you can do for your health. Physical activity has many benefits such as reduced risk of depression and heart disease. Unfortunately, on average 1 in 4 adults do not meet the recommended levels of physical activity. While many factors contribute to an individual's likelihood to be physically active, genetics has been shown to play a role. To better understand how an individual's DNA may affect their likelihood to perform regular physical activity, this study examined the genetic data of over 377,000 individuals of European ancestry. Overall, 9 genetic variants were linked with moderate-to-vigorous physical activity. One of the discovered variants was near the APOE gene, which has previously been connected to Alzheimer's risk. Another gene implicated in this study was CADM2. It encodes a protein that helps cells attach to one another and their surroundings.

DID YOU KNOW?

Studies have found that individuals who are physically active for about 2.5 hours per week have an overall 33% lower risk of death.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to increased physical activity we summed up the effects of genetic variants that were linked to increased physical activity in the study that this report is based on. These variants can be found in the table below. The variants highlighted in green have **positive effect sizes** and increase your genetic predisposition to increased physical activity. The variants highlighted in blue have **negative effects sizes** and decrease your genetic predisposition to increased physical activity. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to increased physical activity. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for increased physical activity to be 0.06**. To determine whether your score is high or low, we compared it to the scores of 5,000 other Nebula Genomics users. We found that your polygenic score for increased physical activity is in the **15th percentile**. This means that it is higher than the polygenic scores 15% of people. We consider this to be a **below average genetic predisposition to increased physical activity**. 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
rs429358_T NEW	T / T	-0.02 (↓)	85%	6.10×10^{-13}
rs7804463_T NEW	C / C	0.01 (–)	53%	1.20×10^{-11}
rs2854277_C NEW	C / C	0.03 (↑)	92%	2.60×10^{-10}
rs7791992_C NEW	C / A	-0.01 (↓)	41%	5.70×10^{-10}
rs3094622_A NEW	A / A	0.02 (↑)	86%	1.40×10^{-9}
rs149943_G NEW	G / G	0.02 (↑)	85%	2.20×10^{-9}
rs2035562_A NEW	A / G	-0.01 (↓)	33%	3.90×10^{-9}
rs2988004_T NEW	T / T	-0.01 (↓)	56%	4.10×10^{-9}
rs1043595_G NEW	G / A	0.01 (↑)	72%	4.30×10^{-9}