

☆ Type 2 diabetes in youth (Srinivasan, 2021)

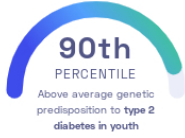
Shylaja Srinivasan, et al.
Diabetes

Metabolism

STUDY SUMMARY

This report is based on a study that discovered 7 genetic variants associated with type 2 diabetes in children.

YOUR RESULT



STUDY DESCRIPTION

Type 2 diabetes is an impairment in the way the body regulates and uses sugar (glucose) as a fuel. Over time, this causes a build-up of sugar in the blood. Having high blood sugar can cause numerous health complications, including kidney disease, blindness, and nerve damage. Type 2 diabetes is a significant public health crisis, but until recently it was considered an "adult-onset" disease. However, the incidence of type 2 diabetes in children has been growing in the past years. This study examined the genetic data of over 9,000 children and adults of multiple ethnicities. The researchers identified 7 regions of the genome associated with type 2 diabetes in youth. 6 of these regions were previously connected to type 2 diabetes in adults, and a 7th genomic region was newly identified by this study. It harbors a gene called PPH2 that plays a role in the regulation of many other genes. Mutations in PPH2 have previously been associated with the autism spectrum disorder.

PHF2 have previously been associated with the autism spectrum disorder.

DID YOU KNOW?

A study released by the Diabetes Prevention Program found that weight loss and increased physical activity could reduce the chance of prediabetes turning into type 2 diabetes by nearly 60 percent.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to type 2 diabetes in youth we summed up the effects of genetic variants that were linked to type 2 diabetes in youth 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 type 2 diabetes in youth. The variants highlighted in blue have **negative effect sizes** and decrease your genetic predisposition to type 2 diabetes in youth. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to type 2 diabetes in youth. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for type 2 diabetes in youth to be 2.22**. 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 type 2 diabetes in youth is in the **90th percentile**. This means that it is higher than the polygenic scores 90% of people. We consider this to be an **above average genetic predisposition to type 2 diabetes in youth**. 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 [Ⓞ]	GENE [Ⓞ]	EFFECT SIZE [Ⓞ]	VARIANT FREQUENCY [Ⓞ]	SIGNIFICANCE [Ⓞ]
rs7903146_T	C / T	TCF7L2	0.46 (↑)	26%	8.00×10^{-20}
rs72982988_A	G / A	MC4R	0.43 (↑)	21%	4.40×10^{-14}
rs200893788_T	TAGTA / TAGTA	CDC123	0.28 (-)	5%	1.10×10^{-12}
rs2237892_C	C / C	KCNQ1	0.46 (↑)	91%	4.80×10^{-11}
rs937689119_GT	/	IGF2BP2	0.29 (-)	5%	3.10×10^{-9}
rs10992863_G	G / G	PHF2	0.21 (↑)	82%	3.20×10^{-8}
rs113748381_A	G / G	SLC16A11	0.04 (-)	5%	4.10×10^{-8}



The risk of type 2 diabetes can be greatly reduced by healthy behaviors.