04/2017

Birth weight (Horikoshi, 2017)

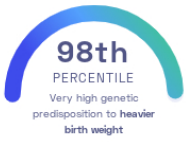
Momoko Horikoshi, et al.
Nature

Pregnancy

STUDY SUMMARY

Identification of 60 novel genetic variants associated with birth weight and correlated with later-life disease susceptibility.

YOUR RESULT



STUDY DESCRIPTION

Birth weight is influenced by the genetics of the mother and fetus, as well as environmental factors during pregnancy. To better understand the role of the foetal genome, this study analyzed the genomes of almost 154,000 individuals of European, African American, Chinese, Filipino, Surinamese, Turkish, and Moroccan ancestry. The study discovered 60 genetic variants associated with birth weight. Some of these genetic variants revealed a relationship between low birth weight and the development of high blood pressure, type 2 diabetes and coronary artery disease later in life. Conversely, high birth weights showed a potential connection with obesity. Some of the discovered variants are near genes involved in our metabolism which indicates how these variants might influence birth weight.

DID YOU KNOW?

During pregnancy, it's recommended to exercise regularly, ensure sufficient vitamin intake (in particular folic acid and calcium), and to abstain from alcohol, smoking, and drugs.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to heavier birth weight we summed up the effects of genetic variants that were linked to heavier birth weight 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 heavier birth weight. The variants highlighted in blue have **negative effects sizes** and decrease your genetic predisposition to heavier birth weight. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to heavier birth weight. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for heavier birth weight to be 2.46**. 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 heavier birth weight is in the **98th percentile**. This means that it is higher than the polygenic scores 98% of people. We consider this to be a **very high genetic predisposition to heavier birth weight**. 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
rs13322435_A	A / A	0.05 (↑)	59%	1.30×10^{-42}
rs1351394_T	T / T	0.04 (↑)	48%	2.00×10^{-33}
rs1374204_T NEW	C / T	0.05 (↑)	70%	1.50×10^{-29}
rs35261542_C	C / C	0.04 (↑)	73%	9.70×10^{-29}
rs11719201_T	C / T	0.05 (↑)	23%	6.40×10^{-27}
rs138715366_C NEW	C / C	0.24 (↑)	99%	1.40×10^{-26}
rs1101081_C NEW	C / T	0.04 (↑)	73%	6.10×10^{-20}
rs7076938_T	C / T	0.04 (↑)	73%	4.70×10^{-18}
rs28510415_G NEW	A / G	0.05 (↑)	9%	4.00×10^{-16}
rs925098_G	A / A	0.03 (-)	28%	1.30×10^{-15}
rs113086489_T NEW	T / T	0.03 (↑)	55%	1.30×10^{-15}
rs61862780_T NEW	T / C	0.03 (↑)	52%	9.50×10^{-15}
rs700059_G NEW	A / A	0.04 (-)	16%	1.20×10^{-12}
rs3763639_C NEW	T / T	0.03 (-)	23%	1.30×10^{-12}
rs6537307_G NEW	A / A	0.03 (-)	48%	1.30×10^{-12}
rs62240962_C NEW	C / C	0.05 (↑)	92%	3.70×10^{-12}
rs62466330_C NEW	T / T	0.05 (-)	7%	5.90×10^{-12}
rs13266210_A NEW	A / A	0.03 (↑)	79%	1.60×10^{-11}
rs1415701_G NEW	G / A	0.03 (↑)	73%	4.00×10^{-11}
rs7575873_A NEW	A / A	0.04 (↑)	88%	6.20×10^{-11}
rs28530618_A NEW	A / G	0.02 (↑)	50%	8.40×10^{-11}
rs6016377_T NEW	C / C	0.02 (-)	45%	3.70×10^{-10}
rs10935733_T NEW	T / C	0.02 (↑)	42%	6.20×10^{-10}
rs72851023_T NEW	C / C	0.05 (-)	7%	6.80×10^{-10}
rs11766649_T NEW	T / T	0.03 (↑)	76%	1.00×10^{-9}
rs2473248_C NEW	C / C	0.03 (↑)	87%	1.10×10^{-9}
rs7402982_A NEW	A / G	0.02 (↑)	42%	1.10×10^{-9}
rs7729301_A NEW	A / A	0.03 (↑)	72%	1.30×10^{-9}
rs11096402_G NEW	A / A	0.03 (-)	25%	1.30×10^{-9}
rs72480273_C NEW	A / C	0.03 (↑)	17%	1.50×10^{-9}
rs144843919_G NEW	G / G	0.07 (↑)	96%	1.50×10^{-9}
rs74233809_C NEW	T / T	0.04 (-)	8%	1.80×10^{-9}
rs1819436_C NEW	C / C	0.03 (↑)	87%	1.80×10^{-9}
rs12543725_G NEW	G / G	0.02 (↑)	60%	1.90×10^{-9}
rs1011939_G NEW	A / A	0.02 (-)	31%	2.70×10^{-9}
rs12942207_C NEW	T / T	0.02 (-)	30%	3.00×10^{-9}
rs798489_C NEW	C / C	0.02 (↑)	74%	5.00×10^{-9}

rs7847628_G	A / A	0.02 (–)	67%	5.40×10^{-9}
rs2421016_T	C / T	0.02 (↑)	48%	6.10×10^{-9}
rs6040076_C	G / C	0.02 (↑)	51%	7.20×10^{-9}
rs2324499_G	G / G	0.02 (↑)	67%	8.30×10^{-9}
rs7964361_A	G / G	0.04 (–)	8%	9.70×10^{-9}
rs6959887_A	A / A	0.02 (↑)	61%	1.00×10^{-8}
rs12906125_G	G / A	0.02 (↑)	69%	1.00×10^{-8}
rs7742369_G	A / G	0.03 (↑)	19%	1.10×10^{-8}
rs2242116_A	G / G	0.02 (–)	39%	1.20×10^{-8}
rs9379832_A	A / A	0.02 (↑)	71%	1.20×10^{-8}
rs2229742_G	G / G	0.03 (↑)	87%	1.50×10^{-8}
rs2854355_G	A / A	0.02 (–)	26%	2.20×10^{-8}
rs134594_C	T / T	0.02 (–)	35%	2.20×10^{-8}
rs11055034_C	C / C	0.02 (↑)	73%	2.30×10^{-8}
rs61154119_T	T / T	0.03 (↑)	84%	2.30×10^{-8}
rs10402712_A	G / A	0.02 (↑)	27%	2.30×10^{-8}
rs2150052_T	A / T	0.02 (↑)	50%	2.80×10^{-8}
rs12823128_T	T / C	0.02 (↑)	56%	3.20×10^{-8}
rs854037_A	A / A	0.03 (↑)	80%	3.50×10^{-8}
rs61830764_A	G / A	0.02 (↑)	36%	4.50×10^{-8}
rs6989280_G	G / G	0.02 (↑)	70%	5.00×10^{-8}