

★ Iron level (Benjamin, 2014)

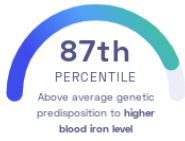
Beben Benjamin, et al.
Nature Communications

Liver Blood

STUDY SUMMARY

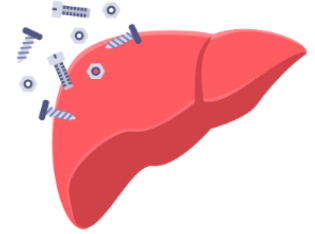
Identification of 6 genomic regions linked to iron level in the blood.

YOUR RESULT



STUDY DESCRIPTION

Iron is a mineral that is needed by our bodies for proper function. While all cells need iron, most of the body's iron is used by red blood cells where it facilitates the transport of oxygen. While a low iron level can lead to illnesses, an elevated iron level is also dangerous. Hemochromatosis is a disease characterized by an elevated iron level and damage to the liver and heart. Body iron level is known to be a heritable trait. Up to 30% of the variance between individuals can be explained by genetics. This genome-wide association study examined nearly 50,000 individuals of European descent to identify markers associated with the blood iron level. The study found 6 genetic regions that are linked to the iron level in the blood. Some of these regions have previously been shown to play a role in the function of red blood cells.



DID YOU KNOW?

In addition to genetic predisposition, elevated iron level can be the result of various medical conditions, including different types of liver diseases. Individuals that have received blood transfusions can also experience a temporary overload of iron. The iron level can be lowered by limiting the consumption of red meat and other iron-rich foods. Foods high in Vitamin C should also be avoided because Vitamin C promotes the body's absorption of iron.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to higher blood iron level we summed up the effects of genetic variants that were linked to higher blood iron level 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 higher blood iron level. The variants highlighted in blue have **negative effect sizes** and decrease your genetic predisposition to higher blood iron level. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to higher blood iron level. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for higher blood iron level to be -0.41**. 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 higher blood iron level is in the **87th percentile**. This means that it is higher than the polygenic scores 87% of people. We consider this to be an **above average genetic predisposition to higher blood iron level**. 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 [Ⓞ]
rs856791_A	A / A	-0.18 (↓)	45%	1.32×10^{-139}
rs1800562_A	G / G	0.33 (-)	7%	2.72×10^{-97}
rs1799945_C	C / C	-0.19 (↓)	85%	1.10×10^{-81}
rs8177240_T	T / T	-0.07 (↓)	67%	6.65×10^{-20}
rs7385804_A	C / C	0.06 (-)	62%	1.36×10^{-18}
rs228916_T	C / C	-0.09 (-)	88%	2.94×10^{-8}