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Cytokine IL18 levels (Wang, 2020)

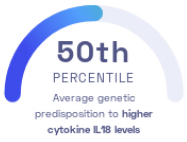
Yunpeng Wang, et al.
PLoS Genetics

Inflammation | Blood

STUDY SUMMARY

Discovery of 4 genetic variants associated with the levels of IL18 cytokine in the blood, a marker of inflammation.

YOUR RESULT



STUDY DESCRIPTION

Inflammation is a defense response formed by the body's immune system in response to injury or illness, but can also be initiated due to stress and environmental factors. While acute inflammation generally helps repair damage in the body, chronic inflammation can cause a host of issues such as arthritis, heart disease, and dementia. One group of proteins particularly important for the inflammatory process are known as cytokines. Cytokines circulate in the blood and help coordinate the immune system response. One such cytokine is IL18. It promotes inflammation and has previously been linked to thyroid swelling and Alzheimer's disease. This genome-wide association study attempted to discover variants associated with IL18 levels in the blood by examining genetic data from around 12,000 individuals of European ancestry. Four unique genomic regions were found to be associated with IL18 levels.

DID YOU KNOW?

Your nutrition choices may have a big influence on inflammation in your body. Studies have suggested that leafy-green vegetables and fruits may help to reduce inflammation, while processed foods may increase it.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to higher cytokine IL18 levels we summed up the effects of genetic variants that were linked to higher cytokine IL18 levels 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 cytokine IL18 levels. The variants highlighted in blue have **negative effects sizes** and decrease your genetic predisposition to higher cytokine IL18 levels. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to higher cytokine IL18 levels. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for higher cytokine IL18 levels to be 0.32**. 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 cytokine IL18 levels is in the **50th percentile**. This means that it is higher than the polygenic scores 50% of people. We consider this to be an **average genetic predisposition to higher cytokine IL18 levels**. 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
rs10891329_T	C / T	0.32 (↑)	32%	1.00×10^{-300}
rs56195122_A NEW	NA	-0.15 (-)	3%	2.40×10^{-13}
rs10891268_A	G / G	0.06 (-)	22%	1.21×10^{-11}
rs9402686_A	G / G	0.06 (-)	26%	1.51×10^{-11}

N/A indicates variants that could not be imputed using the 1000 genomes project datasets and variants that have a frequency of < 5%. Your genome was sequenced at 30x/100x coverage and is not imputed. However, to calculate percentiles, we need to compare your data with other users imputed data. To make the data comparable, we need to exclude some of the variants from your data.