

☆ Hay fever (Waage, 2018)

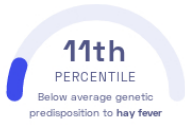
Johannes Waage, et al.
Nature Genetics

Nose Allergy

STUDY SUMMARY

Discovery of 41 genetic risk variants associated with hay fever.

YOUR RESULT



STUDY DESCRIPTION

Achoo! When allergens cause inflammation in our sinuses, we begin to sneeze, get watery eyes, and runny noses. This condition, known as hay fever, is the most common form of allergy, affecting 400 million people worldwide. Overall, heritability may explain up to 66% of variation between people in developing hay fever. To better understand the genetic factors that contribute to hay fever, this genome-wide association study examined over 200,000 individuals of European ancestry. Across the entire genome, researchers identified 41 genetic variants that correlate to a person's risk of developing hay fever. Among these, 20 are newly-discovered. Many of the implicated genes play a role in the body's immune response, including helping to recruit cells of the immune system and inflammation control.

DID YOU KNOW?

The best method for controlling hay fever is to limit your exposure to the allergens that cause it. For example, an allergy to dust mites could be controlled through regular vacuuming and dusting, while an allergy to pollen might best be managed by limiting time outside.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to hay fever we summed up the effects of genetic variants that were linked to hay fever 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 hay fever. The variants highlighted in blue have **negative effect sizes** and decrease your genetic predisposition to hay fever. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to hay fever. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for hay fever to be -0.28**. 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 hay fever is in the **11th percentile**. This means that it is higher than the polygenic scores 11% of people. We consider this to be a **below average genetic predisposition to hay fever**. 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 [Ⓞ]
rs7717955_T NEW	C / T	-0.06 (↓)	27%	3.78 x 10 ⁻³²
rs34004019_G	A / G	-0.12 (↓)	27%	1.00 x 10 ⁻³⁰
rs950881_T	G / G	-0.13 (-)	16%	1.74 x 10 ⁻³⁰
rs5743618_A	C / C	-0.11 (-)	27%	4.38 x 10 ⁻²⁷
rs1438673_C	T / T	0.08 (-)	60%	3.15 x 10 ⁻²⁶
rs7936323_A	G / G	0.08 (-)	48%	6.53 x 10 ⁻²⁴
rs28361986_A NEW	T / T	-0.06 (-)	20%	2.32 x 10 ⁻²³
rs2070902_T NEW	C / C	0.05 (-)	25%	6.19 x 10 ⁻¹⁹
rs2428494_A	T / T	0.08 (-)	42%	7.01 x 10 ⁻¹⁹
rs1504215_A NEW	A / A	-0.05 (↓)	34%	1.54 x 10 ⁻¹⁸
rs11644510_T	C / C	-0.07 (-)	37%	1.58 x 10 ⁻¹⁷
rs12939457_C	T / C	-0.06 (↓)	44%	2.35 x 10 ⁻¹⁷
rs2519093_T NEW	T / T	0.05 (↑)	20%	2.79 x 10 ⁻¹⁶
rs12509403_T NEW	C / T	-0.04 (↓)	32%	1.17 x 10 ⁻¹⁶
rs148505069_G	A / A	0.07 (-)	33%	2.54 x 10 ⁻¹⁵
rs2815765_T NEW	T / C	-0.04 (↓)	37%	9.45 x 10 ⁻¹⁵
rs13395467_G	G / G	-0.06 (↓)	28%	9.93 x 10 ⁻¹⁵
rs111371454_G NEW	A / A	0.05 (-)	21%	1.28 x 10 ⁻¹⁴
rs9775039_A	G / G	0.08 (-)	16%	2.22 x 10 ⁻¹⁴
rs9648346_G NEW	C / G	0.05 (↑)	22%	3.30 x 10 ⁻¹⁴
rs2164068_A	T / A	-0.06 (↓)	49%	4.21 x 10 ⁻¹⁴
rs2030519_G	A / A	0.06 (-)	49%	1.83 x 10 ⁻¹³
rs62257549_A NEW	G / G	-0.05 (-)	20%	1.84 x 10 ⁻¹³
rs10519067_A NEW	G / G	-0.07 (-)	13%	5.53 x 10 ⁻¹³
rs11671925_A NEW	G / A	-0.05 (↓)	17%	5.91 x 10 ⁻¹³
rs11677002_C NEW	T / T	-0.03 (-)	45%	7.08 x 10 ⁻¹³
rs11256017_T	C / C	0.07 (-)	18%	2.72 x 10 ⁻¹²
rs17294280_G	A / G	0.07 (↑)	25%	5.97 x 10 ⁻¹²
rs2461475_C NEW	T / T	0.03 (-)	47%	3.81 x 10 ⁻¹¹
rs7328203_G NEW	G / G	0.03 (↑)	46%	1.28 x 10 ⁻¹⁰
rs7824993_A	A / G	0.05 (↑)	37%	1.86 x 10 ⁻¹⁰
rs6738964_G NEW	T / T	-0.04 (-)	24%	1.86 x 10 ⁻¹⁰
rs9282864_C	A / G	-0.06 (-)	33%	4.69 x 10 ⁻¹⁰
rs9687749_T	T / T	0.06 (↑)	44%	1.84 x 10 ⁻⁹
rs61977073_G	A / A	0.06 (-)	22%	5.78 x 10 ⁻⁹
rs6470578_T	A / A	0.05 (-)	28%	4.36 x 10 ⁻⁸
rs3787184_G	A / G	-0.06 (↓)	19%	4.76 x 10 ⁻⁸

