

7/2020

★ Longevity (Timmers, 2020)

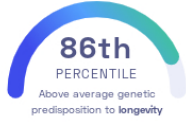
Paul Timmers, et al.
Nature Communications

Aging

STUDY SUMMARY

Identification of 10 genetic variants associated with longevity.

YOUR RESULT



STUDY DESCRIPTION

Longevity is a trait that is defined as having a longer lifespan than most people. This study specifically defined longevity as living longer than 90% of people. Though factors such as diet and access to health care influence how long an individual may live, genetics also plays a role in longevity. This genome-wide association study examined over 36,000 individuals of European ancestry to determine genetic factors associated with longevity. The study found 10 genetic variants that are linked to longevity, but also parental lifespan and healthspan. The variant with the strongest association (rs429358) is in the APOE gene and is linked to Alzheimer's disease. This variant alone imparts a ~ 1.7 greater odds of living longer than 90% of people.

DID YOU KNOW?

"Blue zones" are locations around the globe where individuals tend to live much longer than average. Okinawa (Japan) and Ikaria (Greece) are two such locations, where a high percentage of inhabitants live long into their 90s. Plant-heavy diets and strong family connections are traits common in many "blue zones".

YOUR DETAILED RESULTS

To calculate your genetic predisposition to longevity we summed up the effects of genetic variants that were linked to longevity 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 longevity. The variants highlighted in blue have **negative effect sizes** and decrease your genetic predisposition to longevity. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to longevity. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for longevity to be 1.84**. 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 longevity is in the **86th percentile**. This means that it is higher than the polygenic scores 86% of people. We consider this to be an **above average genetic predisposition to longevity**. 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 [Ⓞ]
rs429358_T	T / T	0.51 (↑)	85%	1.00 x 10 ⁻¹²⁶
rs10455872_A	A / A	0.12 (↑)	93%	4.00 x 10 ⁻³⁰
rs7859727_C	C / C	0.07 (↑)	51%	4.00 x 10 ⁻¹⁸
rs61905747_A	A / A	0.07 (↑)	82%	4.00 x 10 ⁻¹⁰
rs6511720_T	G / G	0.09 (-)	12%	4.00 x 10 ⁻⁹
rs12830425_G	T / T	0.08 (-)	7%	8.00 x 10 ⁻⁹
rs1159806_T	A / A	0.10 (-)	35%	1.00 x 10 ⁻⁸
rs4783780_A	A / C	0.05 (↑)	53%	1.00 x 10 ⁻⁸
rs2643826_C	C / C	0.04 (↑)	56%	4.00 x 10 ⁻⁸
rs17499404_A	A / A	0.08 (↑)	54%	4.00 x 10 ⁻⁸