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Corneal thickness (Choquet, 2020)

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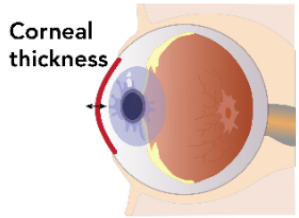
Eyes



A normal cornea is approximately 0.5 millimiters thick at the center.

STUDY SUMMARY

Identification of over 40 new genetic variants associated with central corneal thickness, which is linked to multiple disorders of the eye.

YOUR RESULT

Below average genetic predisposition to **thicker cornea**

STUDY DESCRIPTION

The cornea acts like a "window" for the eye, allowing light to enter while also serving as a barrier against foreign irritants. The thickness of the cornea is a well-studied indicator of eye health, and reduced thickness has been linked to diseases of the eye such as *glaucoma*. This genome-wide association study aimed to identify genomic regions linked to the thickness at the center of the cornea. By examining the genetic information of over 44,000 individuals of non-Hispanic white, Hispanic, Asian, and African American ethnicity, the study found 98 regions of the genome associated with central corneal thickness. Of these, 41 were novel to this study. Together, all the variants in this study may explain around 14% of individual variation in central corneal thickness. Some of these identified variants were also found to be associated with eye diseases, including *keratoconus* and *glaucoma*, underscoring the connections between corneal thickness and disorders of the eye.

DID YOU KNOW?

Over 2.5 million eye injuries are recorded each year in the United States alone, with half of them occurring at home. It is highly recommended to wear a properly certified pair of goggles when performing activities involving tools or hazardous chemicals like bleach.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to thicker cornea we summed up the effects of genetic variants that were linked to thicker cornea 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 thicker cornea. The variants highlighted in blue have **negative effects sizes** and decrease your genetic predisposition to thicker cornea. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to thicker cornea. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for thicker cornea to be -10.38**. 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 thicker cornea is in the **35th percentile**. This means that it is higher than the polygenic scores 35% of people. We consider this to be a **below average genetic predisposition to thicker cornea**. 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
rs28526212_G	G / A	-5.35 (↓)	36%	1.10×10^{-80}
rs3132303_C	C / G	5.16 (↑)	24%	1.80×10^{-60}
rs121908120_T	T / T	12.83 (↑)	98%	2.04×10^{-36}
rs12554217_A	A / C	5.19 (↑)	89%	3.01×10^{-36}
rs930847_G	G / T	3.47 (↑)	22%	3.80×10^{-34}
rs1931656_A	A / A	2.76 (↑)	46%	7.30×10^{-31}
rs1828481_A	A / A	-2.68 (↓)	61%	2.20×10^{-29}
rs56009602_C	C / C	-5.99 (↓)	95%	3.00×10^{-29}
rs3132307_G	G / C	3.13 (↑)	66%	2.42×10^{-28}
rs35809595_G	A / A	2.68 (-)	61%	4.10×10^{-28}
rs6910919_C	T / T	-2.95 (-)	25%	6.90×10^{-27}
rs1831902_C	C / T	-3.02 (↓)	21%	2.40×10^{-25}
rs11111869_G	G / G	-3.18 (↓)	83%	4.60×10^{-25}
rs72755233_G	G / G	-5.24 (↓)	90%	2.43×10^{-24}
rs10471310_C	T / T	-2.38 (-)	62%	5.40×10^{-23}
rs62279162_T	T / G	2.38 (↑)	66%	2.70×10^{-22}
rs10980623_A	A / A	-2.70 (↓)	79%	2.90×10^{-21}
rs2034809_G	G / A	2.36 (↑)	53%	2.28×10^{-20}
rs785429_C	C / C	3.72 (↑)	89%	1.20×10^{-19}
rs12912010_G	G / T	-2.47 (↓)	78%	2.40×10^{-19}
rs11636578_T	T / T	-2.35 (↓)	66%	3.57×10^{-19}
rs17024437_G	G / G	3.73 (↑)	92%	4.30×10^{-18}
rs9906577_G	G / G	2.12 (↑)	70%	3.30×10^{-17}
rs13191376_C	C / C	2.23 (↑)	65%	1.10×10^{-16}
rs7040970_T	C / C	2.29 (-)	47%	3.40×10^{-16}
rs13079175_C	C / T	1.97 (↑)	61%	4.20×10^{-16}
rs4938174_G	G / G	-2.20 (↓)	70%	4.20×10^{-16}
rs9552680_C	C / C	-2.04 (↓)	69%	1.70×10^{-15}
rs117995094_G	G / G	-7.68 (↓)	97%	1.86×10^{-15}
rs4611262_T NEW	C / C	2.37 (-)	22%	2.00×10^{-15}
rs7308752_A	A / A	2.86 (↑)	90%	3.50×10^{-15}
rs9838430_T	T / C	-1.98 (↓)	32%	8.50×10^{-15}
rs7823059_T	T / C	-1.83 (↓)	48%	1.10×10^{-14}
rs34869_G	C / C	-1.95 (-)	56%	1.30×10^{-14}
rs56054326_C NEW	C / G	1.98 (↑)	73%	2.23×10^{-14}
rs7026684_G	G / A	1.85 (↑)	63%	3.50×10^{-14}
rs4846476_G	G / G	2.03 (↑)	77%	1.20×10^{-13}
rs466474_T	T / A	1.77 (↓)	56%	4.83×10^{-13}

rs56223983_G	G / T	-1.89 (↓)	69%	2.60×10^{-13}
rs1412710_T	T / C	-2.23 (↓)	16%	3.70×10^{-13}
rs2731646_A	G / G	1.73 (–)	47%	5.20×10^{-13}
rs4475548_C	C / C	-1.92 (↓)	71%	3.76×10^{-12}
rs75550549_A	A / A	-3.88 (↓)	92%	6.07×10^{-12}
rs152446_T	C / C	1.88 (–)	79%	6.50×10^{-12}
rs1176321_G	G / A	1.77 (↑)	66%	9.30×10^{-12}
rs73222243_A	A / C	2.10 (↑)	75%	9.60×10^{-12}
rs71313931_C	C / G	-2.08 (↓)	74%	3.20×10^{-11}
rs2419835_C	T / T	-1.96 (–)	14%	3.30×10^{-11}
rs2320163_G	G / C	1.59 (↑)	56%	3.70×10^{-11}
rs12898341_C	T / T	-1.59 (–)	51%	4.20×10^{-11}
rs113896694_C	C / C	4.20 (↑)	88%	4.48×10^{-11}
rs11650127_G	G / A	-1.96 (↓)	64%	4.80×10^{-11}
rs28667150_G	G / A	-1.64 (↓)	61%	5.30×10^{-11}
rs9294963_T	T / C	1.54 (↑)	60%	8.70×10^{-11}
rs57168185_A	A / A	-2.11 (↓)	83%	8.83×10^{-11}
rs11917483_T	T / C	-1.66 (↓)	66%	1.20×10^{-10}
rs56303154_C	C / T	-2.35 (↓)	83%	1.57×10^{-10}
rs12324079_T	T / G	-1.54 (↓)	48%	2.00×10^{-10}
rs448203_T	T / C	1.84 (↑)	56%	2.10×10^{-10}
rs62292788_G	G / G	1.56 (↑)	67%	2.90×10^{-10}
rs96067_G	G / A	-1.76 (↓)	20%	4.50×10^{-10}
rs848546_A	A / G	-1.55 (↓)	71%	5.40×10^{-10}
rs25458_A	A / A	-1.90 (↓)	86%	8.30×10^{-10}
rs10124621_G	G / T	-1.61 (↓)	32%	1.90×10^{-9}
rs6459472_A	A / G	1.45 (↑)	45%	2.60×10^{-9}
rs4785955_G	G / G	1.79 (↑)	74%	3.30×10^{-9}
rs7211723_A	C / C	-1.62 (–)	25%	3.40×10^{-9}
rs3740685_C	C / T	1.50 (↑)	29%	5.70×10^{-9}
rs10800558_C	C / C	1.38 (↑)	46%	6.60×10^{-9}
rs11903480_A	G / G	1.60 (–)	75%	6.70×10^{-9}
rs4311997_C	C / T	1.35 (↑)	53%	8.30×10^{-9}
rs10245642_G	A / A	-1.57 (–)	56%	8.80×10^{-9}
rs154001_C	T / T	1.54 (–)	32%	8.80×10^{-9}
rs10943848_A	A / C	-2.39 (↓)	92%	8.97×10^{-9}
rs4623781_A	A / A	1.35 (↑)	60%	1.30×10^{-8}
rs7737693_C	T / T	1.40 (–)	49%	1.30×10^{-8}
rs58671886_G	G / G	2.29 (↑)	90%	1.36×10^{-8}
rs1800440_T	C / C	-1.89 (–)	81%	1.40×10^{-8}
rs8133436_T	C / C	2.85 (–)	8%	1.90×10^{-8}
rs2505507_C	C / C	1.53 (↑)	73%	2.10×10^{-8}
rs9350413_T	T / A	-1.42 (↓)	45%	2.50×10^{-8}
rs688601_T	T / A	-1.67 (↓)	41%	2.70×10^{-8}
rs7749695_T	C / C	1.48 (–)	23%	2.70×10^{-8}
rs880930_G	G / G	1.58 (↑)	77%	2.70×10^{-8}
rs117789382_G	G / G	-4.42 (↓)	96%	2.93×10^{-8}
rs13036662_G	G / G	-2.11 (↓)	90%	3.20×10^{-8}
rs35351529_T	T / T	2.43 (↑)	91%	3.20×10^{-8}
rs28687756_T	T / T	-2.26 (↓)	56%	3.58×10^{-8}
rs3124932_C	C / T	-1.58 (↓)	58%	3.86×10^{-8}
rs11077857_G	A / A	1.56 (–)	18%	4.71×10^{-8}
rs9856175_C	C / C	-1.36 (↓)	63%	4.90×10^{-8}