

★ Brain aneurysms (Bakker, 2020)

Mark Bakker, et al.  
Nature Genetics

Brain Vasculature

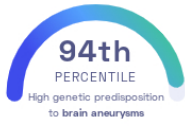


Brain aneurysms are blood vessels in the brain that are ballooned outward and filled with blood.

STUDY SUMMARY

Discovery of 17 genetic variants associated with brain aneurysms.

YOUR RESULT



STUDY DESCRIPTION

Brain aneurysms occur when blood vessels in the brain balloon outward and fill with blood. Roughly 1 in 50 people live with an aneurysm, and an estimated 50-80% of aneurysms do not lead to medical issues. However, occasionally brain aneurysms rupture, causing blood to flow out into the surrounding brain tissue. Ruptured brain aneurysms are a medical emergency and have a fatality rate of about 50%. This genome-wide association study examined over 317,000 individuals of European and East Asian ancestries to better understand how genetics influences an individual's risk of developing a brain aneurysm. The researchers found 17 genomic regions, 11 of which have not been previously identified. One of the discovered variants is near the FGD6 gene, which is known to play a role in the construction of blood vessels throughout the body. The study also identified smoking and high blood pressure to be associated with an increased risk of developing aneurysms.

DID YOU KNOW?

Women are about 1.5 times more likely to have a brain aneurysm than men. Likewise, women are also at an increased risk of having an aneurysm rupture.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to brain aneurysms we summed up the effects of genetic variants that were linked to brain aneurysms 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 brain aneurysms. The variants highlighted in blue have **negative effect sizes** and decrease your genetic predisposition to brain aneurysms. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to brain aneurysms. By adding up the effect sizes of the highlighted variants we calculated your polygenic score for brain aneurysms to be 0.09. 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 brain aneurysms is in the 94th percentile. This means that it is higher than the polygenic scores 94% of people. We consider this to be a **high genetic predisposition to brain aneurysms**. 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
rs1537373_T	T / T	-0.18 (↓)	46%	2.86 x 10 <sup>-29</sup>
rs6841681_A	G / A	-0.22 (↓)	22%	3.22 x 10 <sup>-26</sup>
rs11661542_A	C / C	-0.14 (-)	47%	3.17 x 10 <sup>-17</sup>
rs3742321_T	T / C	-0.14 (↓)	76%	5.47 x 10 <sup>-16</sup>
rs7184525_A	A / G	0.14 (↑)	45%	5.60 x 10 <sup>-16</sup>
rs2280543_T	C / T	0.24 (↑)	10%	1.16 x 10 <sup>-14</sup>
rs79780963_T	C / C	-0.19 (-)	25%	2.34 x 10 <sup>-14</sup>
rs62516550_T	C / T	0.16 (↑)	34%	3.44 x 10 <sup>-14</sup>
rs7137731_T	T / T	-0.12 (↓)	64%	4.88 x 10 <sup>-14</sup>
rs4705938_T	T / T	0.12 (↑)	55%	2.55 x 10 <sup>-10</sup>
rs11153071_A	G / G	0.15 (-)	16%	1.25 x 10 <sup>-9</sup>
rs4814863_A	G / G	0.10 (-)	38%	3.22 x 10 <sup>-9</sup>
rs2681472_A	A / A	0.12 (↑)	72%	6.71 x 10 <sup>-9</sup>
rs11187838_A	G / A	-0.09 (↓)	44%	1.55 x 10 <sup>-8</sup>
rs11044991_A	G / G	-0.13 (-)	40%	1.74 x 10 <sup>-8</sup>
rs8034191_T	T / T	-0.12 (↓)	68%	2.75 x 10 <sup>-8</sup>
rs39713_T	T / T	0.18 (↑)	9%	4.10 x 10 <sup>-8</sup>