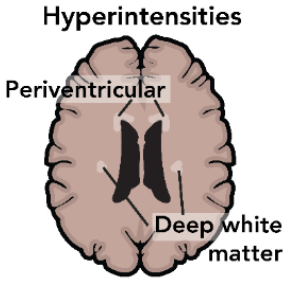
6/2020

Brain lesions (Armstrong, 2020)

Nicola J Armstrong, et al.
Stroke

Aging Brain

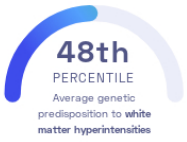


Small brain lesions do not necessarily cause immediate symptoms.

STUDY SUMMARY

Discovery of 11 genomic regions associated with periventricular white matter hyperintensities that indicate brain lesions.

YOUR RESULT



STUDY DESCRIPTION

The brain is a delicate organ that requires constant blood flow. Strokes occur when a large part of the brain is no longer supplied with blood due to a major clot or a bleed - this leads to obvious brain damage. However smaller clots or bleeds might kill or damage brain cells, possibly causing dementia or movement issues. These might go undetected until the patient gets a brain scan: the damage shows up as a brighter white spot, called a hyperintensity. This study looked for these white spots in brain scans near the fluid sacs in the center of the brain, called ventricles. These brain lesions are called periventricular white matter hyperintensities. By looking at brain scans from over 26,000 people, the authors identified 11 genomic regions associated with periventricular white matter hyperintensities. The presence of these lesions was associated with an increased risk of stroke but was not associated with an increased risk of dementia..

DID YOU KNOW?

There is some evidence that white matter lesions may be preventable by not smoking and preventing hypertension, type 2 diabetes, and obesity.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to white matter hyperintensities we summed up the effects of genetic variants that were linked to white matter hyperintensities 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 white matter hyperintensities. The variants highlighted in blue have **negative effects sizes** and decrease your genetic predisposition to white matter hyperintensities. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to white matter hyperintensities. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for white matter hyperintensities to be 0.31**. 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 white matter hyperintensities is in the **48th percentile**. This means that it is higher than the polygenic scores 48% of people. We consider this to be an **average genetic predisposition to white matter hyperintensities**. 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
rs3744020_A	G / G	0.09 (–)	19%	7.06×10^{-35}
rs3758575_A	A / A	0.04 (↑)	49%	2.00×10^{-11}
rs12928520_T NEW	T / T	0.04 (↑)	43%	4.22×10^{-11}
rs275350_C	G / G	0.04 (–)	42%	4.86×10^{-11}
rs7596872_A	C / A	0.06 (↑)	10%	8.66×10^{-11}
rs72934583_T	T / G	0.05 (↑)	87%	1.03×10^{-9}
rs57242328_A	A / A	-0.04 (↓)	33%	1.85×10^{-9}
rs7213273_A NEW	A / A	0.03 (↑)	67%	8.89×10^{-9}
rs1993484_T NEW	C / C	0.04 (–)	24%	1.36×10^{-8}
rs11838776_A	G / G	0.04 (–)	28%	2.82×10^{-8}
rs1799983_T NEW	T / G	0.04 (↑)	32%	3.68×10^{-8}