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Falling (Trajanoska, 2020)

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Communications Biology

Aging

STUDY SUMMARY

Discovery of 3 genomic regions associated with an increased risk of falling.

YOUR RESULT

STUDY DESCRIPTION

Falls are the leading cause of injury among older adults, with more than one-third of all Americans over 65 suffering a fall each year. For some injuries, such as hip fractures, up to 90% occur as the result of falls. Because many factors that lead to falling, such as cognition and muscle function, have a genetic component, this study sought to find genetic factors directly associated with an increased risk of falling. The study examined the genomes of over 450,000 individuals of European ancestry and identified 3 genomic regions associated with an increased risk of falling. Several variants were located in genes important for the development of the brain's cortex, a region with important sensory and motor functions. Overall, the study found that nearly 3% of an individual's risk of falling may be determined by genetics. The study also found that conditions such as insomnia and depression are correlated with an increased risk of falling, while well-being and intelligence were correlated with a decreased risk.

DID YOU KNOW?

Certain physical activities may help prevent falls in those with an increased risk. This can include activities such as taking regular walks and exercises such as tai chi, which may improve balance and strength.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to falling we summed up the effects of genetic variants that were linked to falling 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 falling. The variants highlighted in blue have **negative effects sizes** and decrease your genetic predisposition to falling. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to falling. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for falling to be 0.00**. 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 falling is in the **0th percentile**. This means that it is higher than the polygenic scores 0% of people. We consider this to be a **very low genetic predisposition to falling**. 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
rs2709062_A NEW	G / G	0.03 (-)	50%	4.04×10^{-9}
rs2111530_G NEW	A / A	0.03 (-)	39%	1.82×10^{-8}
rs2431108_C NEW	T / T	0.03 (-)	33%	4.20×10^{-8}