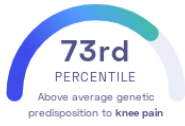


STUDY SUMMARY

Identification of 4 genetic variants associated with knee pain.

YOUR RESULT



STUDY DESCRIPTION

Your knee is the largest joint in the body, and it is critical for supporting your body weight as you walk, jog, stand upright, and bend down. Years of wear and tear can take a toll on your knees, causing knee pain. In fact, ~ 50% of individuals over the age of 50 experience knee pain. To better understand the genetic basis of knee pain, researchers conducted a genome-wide association study that examined the genomes of over 170,000 individuals of European ancestry. The study identified 4 genetic variants that are associated with knee pain. Of these genetic variants, two are located near a gene that has previously been implicated in osteoarthritis, which is the wearing down of the flexible, protective tissue known as cartilage at the ends of bones. The other two variants are located near a gene that is important for converting cartilage to bone.

DID YOU KNOW?

The human skeleton is made up of over 200 bones! The fabella is a tiny bone located behind the knee that mostly disappeared during the evolution of humans, but is still found in some individuals. It is more commonly found in individuals who suffer from knee pain, but it is unclear if its presence causes knee pain.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to knee pain we summed up the effects of genetic variants that were linked to knee pain 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 knee pain. The variants highlighted in blue have **negative effect sizes** and decrease your genetic predisposition to knee pain. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to knee pain. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for knee pain 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 knee pain is in the **73rd percentile**. This means that it is higher than the polygenic scores 73% of people. We consider this to be an **above average genetic predisposition to knee pain**. 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 [ⓘ]	COMMENTS	EFFECT SIZE [ⓘ]	VARIANT FREQUENCY [ⓘ]	SIGNIFICANCE [ⓘ]
rs143384_A	G / A	In GDF5 gene	-0.01 (↓)	60%	1.32×10^{-12}
rs6120946_A	A / A	In GDF5 gene	-0.01 (↓)	78%	6.81×10^{-9}
rs2808772_A	A / A	Near COL27A1 gene	0.01 (↑)	53%	1.49×10^{-8}
rs919642_A	A / A	Near COL27A1 gene	0.01 (↑)	73%	2.29×10^{-8}