

Chronic wound microbiome diversity (Tipton, 2020)

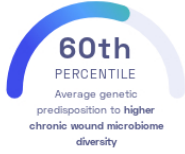
Craig Tipton, et al.
PLoS Pathogens

Skin Infection

STUDY SUMMARY

Identification of 6 genetic variants that explain variation in wound *microbiome* diversity, a critical factor in the wound healing process.

YOUR RESULT



such as *cell adhesion*.

STUDY DESCRIPTION

Normally wounds heal in a matter of weeks or months, often forming scar tissue over the site of injury. Chronic wounds are defined as wounds that fail to show signs of healing after a period of 3 or more weeks. Previous studies have shown that a wound's successful healing is affected by the *microbiome* composition of the wound. For example, wounds that are predominantly colonized by only a few microbe species (= low *microbiome* diversity) appear to heal at a slower rate. This study attempted to find genetic markers that are associated with the diversity of *microbiomes* in chronic wounds. By examining the genetic information of almost 80 patients, the study identified 6 genetic variants that can be used to calculate a polygenic score that explains 53% of the variation in wound *microbiome* diversity. Many of the variants occur in genes associated with processes involved in wound healing,



Chronic wounds often have a characteristic *microbiome*.

DID YOU KNOW?

Diet also influences wound healing. For example, vitamin C, commonly found in fruits and vegetables, is needed for the body to create collagen. Collagen is a structural protein crucial for a wound to close and scar tissue to form. Zinc and protein in the diet can also help promote a speedy and successful healing.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to higher chronic wound microbiome diversity we summed up the effects of genetic variants that were linked to higher chronic wound microbiome diversity 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 higher chronic wound microbiome diversity. The variants highlighted in blue have **negative effect sizes** and decrease your genetic predisposition to higher chronic wound microbiome diversity. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to higher chronic wound microbiome diversity. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for higher chronic wound microbiome diversity to be -0.01**. 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 higher chronic wound microbiome diversity is in the **60th percentile**. This means that it is higher than the polygenic scores 60% of people. We consider this to be an **average genetic predisposition to higher chronic wound microbiome diversity**. 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 ^⓪	YOUR GENOTYPE ^⓪	EFFECT SIZE ^⓪	VARIANT FREQUENCY ^⓪	SIGNIFICANCE ^⓪
rs11984782_C	T / T	1.85 (-)	12%	4.06×10^{-5}
rs12307988_A	G / G	1.71 (-)	10%	1.83×10^{-5}
rs4768411_T	T / T	-1.57 (↓)	39%	2.19×10^{-5}
rs3846499_A	G / G	-1.24 (-)	38%	2.97×10^{-5}
rs1436708_C	C / C	1.57 (↑)	46%	3.04×10^{-5}
rs201276730_C	A / A	-1.74 (-)	28%	3.15×10^{-5}