

NEWS

HUMANS

## A gene variant partly explains why Peruvians are among the world's shortest people

A common variation in DNA reduces some people's height by about 2 centimeters, on average



Peruvians, like this man walking in the ancient Incan village of Ollantaytambo, are some of the world's shortest people as a population. Some carry a version of a gene that partly explains why.

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Nearly 4,000 common variations in DNA are known to affect height, with each one nudging stature up or down a millimeter or so. But a gene variant found in almost 5 percent of Peruvians reduces height by 2.2 centimeters, on average.

That's the biggest effect on stature recorded to date for a common version of a gene. Some rare variations in DNA have much larger effects on height, but they tend to be found in less than 1 percent of people.

People who carry two copies of the gene variant — one inherited from each parent — [are, on average, about 4.4 centimeters shorter](#) than the average height of people who don't carry the variant, researchers report May 13 in *Nature*. The finding partially explains why the Peruvian people are among the shortest in the world. Men average 165.3 centimeters (about 5 feet, 4 inches) tall and women 152.9 cm (about 5 feet) tall.

The variant is located in the gene known as fibrillin 1, or *FBN1*, which produces a protein involved in forming bone, connective tissues, skin and other tissues. Some rare *FBN1* variations lead to [Marfan syndrome](#), a disorder that leads people to be tall, lanky and prone to heart and blood vessel ruptures and other health problems (*SN*: 6/25/08).

"But those 5 percent of Peruvians who carry [this common variant] are not sick by any pathological definition," says statistical geneticist Samira Asgari of Brigham and Women's Hospital and Harvard Medical School in Boston.

Asgari and colleagues found evidence that natural selection has favored the short-stature variant, although exactly what evolutionary advantage it gives the Peruvians who carry it is not clear.

#### CITATIONS

S. Asgari et al. [A positively selected FBN1 missense variant reduces height in Peruvian individuals](#). *Nature*. Published online May 13, 2020. doi: 10.1038/s41586-020-2302-0.