

Researchers create a new human height inheritance model

25 March 2021



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Skoltech scientists and their colleagues have proposed a new human height inheritance model that accounts for the interaction between various factors that influence adult human height. The research was published in the *European Journal of Human Genetics*.

Human height is a classical quantitative trait that depends on sex, genetics, and the [environment](#).

Scientists from Skoltech, Novosibirsk State University, the Institute of Cytology and Genetics of the Siberian Branch of RAS, and the Institute of Science and Technology in Vienna analyzed the human height distribution across a population and its dependence on sex, genes, and the environment. The team used a huge set of data on over 369,000 U.K. individuals and average male and female heights from various ethnic groups across the world.

The classical human height [model](#) assumes the additivity of various factors. The team has shown that the interactions between these diverse factors should be taken into account when studying remote populations or large datasets. For instance,

certain genetic variants are assumed to have a greater effect on the [height](#) in males than in females. The researchers proposed an alternative model in which the effects of sex, genes, and the environment are multiplied (and not added up) and can be regarded as independent.

"The conventional model would reveal different average heights in centimeters for males and females in each country, while our model straightforwardly shows a difference of 8%. The same goes for the environment and the genes which turned out to have the same relative effect in all the studied populations," explains Ivan Kuznetsov, a Ph.D. student at the Skoltech Center for Life Sciences (CLS).

More information: Sergei A. Slavskii et al. The limits of normal approximation for adult height, *European Journal of Human Genetics* (2021). [DOI: 10.1038/s41431-021-00836-7](https://doi.org/10.1038/s41431-021-00836-7)

Provided by Skolkovo Institute of Science and Technology

APA citation: Researchers create a new human height inheritance model (2021, March 25) retrieved 4 May 2021 from <https://medicalxpress.com/news/2021-03-human-height-inheritance.html>

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