

Does a child's mathematical ability have a genetic basis?

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A new study published in *Genes, Brain and Behavior* has identified several genetic variants that may be linked with mathematical abilities in children.

For the [research](#), investigators performed [genome-wide association studies](#) on 11 mathematical ability categories in 1,146 students from

Chinese elementary schools. They identified seven single nucleotide genetic variants in the genome that were strongly linked to mathematical and reasoning [abilities](#).

Additional analyses revealed significant associations of three mathematical ability categories with three genes. Variants in *LINGO2* (leucine rich repeat and Ig domain containing 2) were associated with subtraction ability, *OAS1* (2'-5'-oligoadenylate synthetase 1) variants were associated with spatial conception ability, and *HECTD1* (HECT domain E3 ubiquitin protein ligase 1) variants were associated with division ability.

"Results of our research provide evidence that different [mathematical abilities](#) may have a different genetic basis. This study not only refined genome-wide association studies of mathematical ability but also added some population diversity to the literature by testing Chinese children," said corresponding author Jingjing Zhao, Ph.D., a professor in the School of Psychology at Shaanxi Normal University, China.

More information: A genome-wide association study identified new variants associated with mathematical abilities in Chinese children, *Genes Brain & Behavior* (2023). [DOI: 10.1111/gbb.12843](https://doi.org/10.1111/gbb.12843)

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