

# Offspring sex ratio is not a heritable trait, study finds

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Century-old theories that having girls or boys 'runs in families' have been upended by a University of Queensland study, proving parents' genes do not determine their child's gender.

Dr. Brendan Zietsch from UQ's School of Psychology said the study was the largest conducted on the often-debated question, and concluded the sex of [offspring](#) is essentially random.

"We found individuals don't have an innate tendency to have offspring of one or the other gender," Dr. Zietsch said.

"The chances are more like 51 to 49 of having a boy, but the genes of the mother and father don't play any role. These findings have crucial implications for biological and evolutionary theories of offspring sex ratios."

The study used data from Swedish population registers, which includes every Swede born since 1932, equating to 3,543,243 individuals and their 4,753,269 [children](#).

The research team linked all [family members](#) and tested whether the sex of a person's children was associated with the sex of their brother or sister's children.

Dr. Zietsch said the large body of scientific [theory](#) around what influences whether someone has boys or [girls](#) had been proven to be wrong.

"It was thought that rich or tall parents should have more boys and beautiful parents should have more girls. It was also thought that parents' hormone levels at the time of conception were important. Our results rule out all these possibilities and suggest a rethink of offspring sex ratio theory is necessary to properly understand why offspring sex ratios appear to vary, for example, across countries."

The study was published in the scientific journal *Proceedings of the Royal Society B*.

**More information:** Brendan P. Zietsch et al. No genetic contribution to variation in human offspring sex ratio: a total population study of 4.7 million births, *Proceedings of the Royal Society B: Biological Sciences* (2020). [DOI: 10.1098/rspb.2019.2849](https://doi.org/10.1098/rspb.2019.2849)

Provided by University of Queensland

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