

Adopted kids' average IQ higher than non-adopted siblings, study finds

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Credit: Robert Kraft/public domain

Adopted children tend to have a slightly higher IQ than siblings who remained with their biological parents, a recent study found.

The difference between siblings—equivalent to about four IQ points—appears to stem from higher average educational levels in

adoptive parents, according to the researchers.

"The more educated the adoptive parents are, the bigger the advantage for the child," said study co-author Eric Turkheimer, a professor of clinical psychology at the University of Virginia in Charlottesville. "Even in the presence of genetic differences among people, improving the environment helps children's cognitive ability."

However, this study was only designed to find an association between intelligence and adoption status. It couldn't prove whether adoption actually caused higher IQ scores.

The research was published online March 23 in the *Proceedings of the National Academy of Sciences*.

The authors analyzed two large data sets of male siblings in Sweden. All males in that country are required to take an IQ test between ages 18 to 20 as part of the country's mandatory military service.

IQ is a measure of individuals' memory and thinking ("cognitive") ability. The median IQ score is 100, which means half have a higher score and half have a lower score, Turkheimer explained.

The first set of more than 400 pairs of full male siblings revealed that those who had been adopted had an average IQ score of nearly 97. Those who were raised by their biological parents had an average IQ of 92.

After accounting for other factors, the researchers determined that being adopted accounted for an average increase of just over 4 IQ points. Four points roughly equates to moving up 10 percent in cognitive ability compared to the rest of the population, according to Turkheimer.

"An increase of 4 IQ points is certainly substantial," said Marinus van

IJzendoorn, a professor at Leiden University's Centre for Child and Family Studies in the Netherlands.

In his own research, van IJzendoorn has compared the IQs of children adopted from orphanages to those not adopted from the orphanage. "We found that if [adopted children](#) come from bad orphanages, the increase in IQ might even be 15 or more IQ points compared to the peers left behind, which is the difference between marginally mentally delayed versus normal development."

In comparing the educational levels of the biological and the adoptive parents, researchers found that adoptive parents had approximately 30 percent more education than biological parents. Each additional unit of education among the parents who raised a child translated to an average 1.7 point increase in IQ.

"We even had some brothers who were adopted into homes with lower education than the biological parents had, which are unusual because children are usually only adopted into higher-income homes," Turkheimer said. "Their IQs went down relative to their brothers."

In a larger sample of just over 2,300 pairs of male half-siblings, the current study found a similar pattern. Those who were adopted gained an average just over 3 IQ points. Each extra unit of education the parents had led to an average increase of 1.9 IQ points, the study found.

The adopted children's IQs were linked to the education levels of both their adoptive parents and their [biological parents](#), revealing how both genetics and environment contribute to children's cognitive development, Turkheimer said.

Various factors might contribute to the increased mental ability of the adopted children in an environment with more highly educated parents,

said van IJzendoorn.

"Higher parental education levels are associated with a richer home environment, such as greater availability of books and magazines important for reading comprehension, and a culturally somewhat more stimulating climate, including visits to museums and potentially more strict monitoring of social media consumption," van IJzendoorn said. "And, of course, highly educated parents can provide more support with school-related homework."

Van IJzendoorn said the higher education and possibly higher ambitions of [adoptive parents](#) may also lead them to have higher expectations of their children to realize their potential.

The way more-educated parents interact with their children on a daily basis may also play a role, Turkheimer suggested.

"There is evidence from elsewhere that better-off parents speak to their [children](#) more, use a larger variety of words and read to them more," Turkheimer said. "My own suspicion is that it is the sum of many little things that go with better socioeconomic conditions—nutrition, parent-child relations, schools, neighborhoods," Turkheimer said. "I doubt any one of them could be identified as the big active ingredient."

More information: Family environment and the malleability of cognitive ability: A Swedish national home-reared and adopted-away cosibling control study, *PNAS*, www.pnas.org/cgi/doi/10.1073/pnas.1417106112

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