

IVF babies do not have lower cognitive skills than naturally conceived children: study

26 May 2017



IVF babies do not have lower cognitive skills than naturally conceived children. Credit: Shutterstock

New research shows that between the ages of three and 11, children conceived artificially can be linked with better scores for reading and verbal tests than children conceived naturally.

Researchers analysed data of hundreds of UK children who had been born through IVF or ICSI (when the man has a low sperm count), testing the same groups of children every few years up to the age of 11. They found a positive association between artificial conception and [cognitive development](#) when a child was between the ages of three and five.

The study, published in the journal *Human Reproduction*, also shows that parents who undergo such treatments are generally older, more educated and have a higher socio-economic status than parents who had naturally conceived children. Artificially conceived babies are more likely to be part of a multiple birth or have low birth weight, however, this study finds their family backgrounds 'override' the possible negative effects to health that could lessen cognitive ability. The findings are significant given previous studies show a mixed picture, with some research suggesting assisted reproductive treatments can harm a child's

cognitive abilities.

Researchers Professor Melinda Mills and doctoral student Anna Barbuscia, from the University of Oxford's Department of Sociology and Nuffield College, used data from the UK Millennium Cohort Study, a nationally representative group of 18,552 families. They analysed a sample of babies born in 2000-1 who were resident in the UK at nine months, using data from the Department of Social Security Child Benefit Registers.

Out of 15,281 artificially conceived children born in 2000-1, 8,298 were followed up for cognitive ability tests in 2003, 2005, 2007 and 2012. Out of 15,218 children born in 2000-2001, who were followed up for cognitive ability tests in 2003, 2005, 2007 and 2012, 214 were conceived artificially through IVF or ICSI. Standardised tests (British Ability Scales) were used at each stage to assess the children's vocabulary skills (at three and five); reading at seven, and use of verbs at 11. The scores were compared with those of children who had been naturally conceived.

Analyses show that mothers and fathers are on average four to five years older, respectively, than parents of naturally conceived children. This group of parents is also likely to have a higher income and belong to a higher social class, with the mothers more likely to be highly educated and employed than mothers of naturally conceived babies. The study notes that these factors are 'consistent and statistically significant' and highlights that they are widely accepted as being linked with children with higher [cognitive abilities](#) in the early years.

Researcher Professor Melinda Mills, from the Department of Sociology, said: 'The findings suggest that the positive effect of the family background of children conceived through artificial reproduction techniques "overrides" the risks of related poor health impairing their cognitive ability.

Although artificially conceived babies have a higher risk of being born prematurely or as a multiple birth, we have found they also have parents who are older, better educated and from a higher income bracket.

years born after ART—a longitudinal cohort study, *Human Reproduction* (2017). DOI: [10.1093/humrep/dex102](https://doi.org/10.1093/humrep/dex102)

'These are all factors linked with better outcomes for children. What is significant is that this positive effect is over the long term up to the age of 11. The findings support other studies showing that on balance such fertility treatments do not impair a child's higher thinking skills.'

Provided by University of Oxford

Lead author Anna Barbuscia said: 'The strong desire and considerable psychological and financial effort involved in having a child through artificial conception treatments undoubtedly contributes to more attentive parenting.'

'Parents may perceive their children as more fragile but once past the period of greatest risk, their parenting style may change to become more like other parents. This might account for the fact that the gap in higher cognitive ability has closed by the time both groups of children had reached the age of 11 with only slightly better scores for artificially conceived children at this later stage.'

The paper explains that since the first IVF baby was born in 1978, there has been a rapid increase in the use of artificial reproductive technology, with more than 5 million children conceived this way (up to 2012). To date, results on the long-term effects on children have been mixed. Some studies reported an increased risk of damage to their behavioural, social, emotional and cognitive development, as well as mental disorders or physical problems such as low birthweight and premature delivery.

By contrast, a series of systematic reviews concluded, however, that there were no developmental differences once the baby was a few weeks old. Other studies draw similar conclusions to the Oxford study, showing not only comparable but higher mental health and social development in IVF [children](#).

More information: Anna Barbuscia et al.
Cognitive development in children up to age 11

APA citation: IVF babies do not have lower cognitive skills than naturally conceived children: study (2017, May 26) retrieved 9 November 2022 from <https://medicalxpress.com/news/2017-05-ivf-babies-cognitive-skills-naturally.html>

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