

# Infertility treatments do not appear to contribute to developmental delays in children

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Children conceived via infertility treatments are no more likely to have a developmental delay than children conceived without such treatments, according to a study by researchers at the National Institutes of Health, the New York State Department of Health and other institutions. The findings, published online in *JAMA Pediatrics*, may help to allay longstanding concerns that conception after infertility treatment could affect the embryo at a sensitive stage and result in lifelong disability.

The authors found no differences in developmental assessment scores of more than 1,800 [children](#) born to women who became pregnant after receiving infertility treatment and those of more than 4,000 children born to women who did not undergo such treatment.

"When we began our study, there was little research on the potential effects of conception via fertility treatments on U.S. children," said Edwina Yeung, Ph.D., an investigator in the Division of Intramural Population Health Research at NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD). "Our results provide reassurance to the thousands of couples who have relied on these treatments to establish their families."

Also taking part in the study were researchers from the University at Albany, New York; the New York State Department of Health, also in Albany; and CapitalCare Pediatrics in Troy, New York. The Upstate

KIDS study enrolled infants born to women in New York State (except for New York City) from 2008 to 2010. Parents of infants whose birth certificates indicated infertility treatment were invited to enroll their children in the study, as were all parents of twins and other multiples. The researchers also recruited roughly three times as many singletons not conceived via infertility treatment. Four months after giving birth, the mothers indicated on a questionnaire the type of [infertility treatment](#) they received:

### **Assisted reproductive technology (ART), including:**

- In vitro fertilization—fertilization in a laboratory dish, after eggs and sperm are taken from the couple.
- Frozen embryo transfer—implantation of an embryo that had been previously frozen.
- Assisted hatching— placement of a microscopic hole in the zona pellicuda, the protein covering of the embryo.
- Gamete intrafallopian transfer— mixing of sperm and egg before placing them in the fallopian tube.
- Zygote intrafallopian transfer—placement of fertilized egg (zygote) into the fallopian tube.
- Ovulation induction—treatment with drugs that stimulate ovulation
- Intrauterine insemination—placement of the sperm directly in the uterus via a narrow tube.

Parents also completed a questionnaire to screen children for developmental disabilities at numerous intervals throughout their children's first three years of life: at 4-6, 8, 12, 18, 24 and 36 months of age. The questionnaire covered five main developmental areas, or domains: fine motor skills, gross motor skills, communication, personal and social functioning, and problem solving ability. Overall, children conceived via fertility treatments scored similarly to other children on

the five areas covered in the developmental assessments.

When the researchers considered only children conceived through ART, they found that they were at increased risk for failing any one of the five domains, with the greatest likelihood of failing the personal-social and problem solving domains.

However, twins were more likely to fail a domain than were singletons. So, when the researchers compensated for the greater percentage of twins in the ART group than in the non-treatment group (34 percent vs. 19 percent), they found no significant difference between the ART group and the non-treatment group in failing any of the 5 domains.

Of the children diagnosed with a disability at 3-4 years old, no significant difference was found between the treatment and non-treatment groups: 13 percent, compared to 18 percent.

Because it is not always possible to diagnose some forms of developmental disability by 3 years of age, the study authors will continue to evaluate the children periodically until they reach 8 years of age.

**More information:** Yeung EH, Sundaram R, Bell EM, Druschel C, Kus C, Ghassabian A, Bello S, Yunlong X, and Louis GB. Examining Infertility Treatment and Early Childhood Development in the Upstate KIDS Study. *JAMA Pediatrics* 2016 (170). [DOI: 10.1001/jamapediatrics.2015.4164](https://doi.org/10.1001/jamapediatrics.2015.4164)

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