

Higher risk of birth problems after assisted conception

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A University of Adelaide study has shown that the risk of serious complications such as stillbirth, preterm birth, low birth weight and neonatal death is around twice as high for babies conceived by assisted reproductive therapies compared with naturally conceived babies.

In the most comprehensive study of its kind in the world, researchers from the University's Robinson Institute have compared the outcomes of more than 300,000 births in South Australia over a 17-year period. This included more than 4300 births from assisted reproduction.

They compared adverse birth events related to all forms of available treatment, including in-vitro fertilization (IVF), [intracytoplasmic sperm injection](#) (ICSI), ovulation induction, and cryopreservation of embryos.

The results are published online today in the journal *PLOS ONE*.

"Compared with spontaneous conceptions in couples with no record of infertility, singleton babies from assisted conception were almost twice as likely to be stillborn, more than twice as likely to be preterm, almost three times as likely to have very low [birth weight](#), and twice as likely to die within the first 28 days of birth," says the study leader, Professor Michael Davies from the University of Adelaide's Robinson Institute.

"These outcomes varied depending on the type of assisted conception used. Very low and low birth weight, very preterm and [preterm birth](#), and [neonatal death](#) were markedly more common in births from IVF

and, to a lesser degree, in births from ICSI," he says.

"Using frozen embryos eliminated all significant adverse outcomes associated with ICSI but not with IVF. However, frozen embryos were also associated with increased risk of macrosomia (big baby syndrome) for IVF and ICSI babies."

Professor Davies says the study confirms related work in Europe and Australia showing that [infertility treatment](#) is associated with [adverse outcomes](#) for newborn babies.

"More research is now urgently needed into longer term follow-up of those who have experienced comprehensive perinatal disadvantage," he says. "Our studies also need to be expanded to include more recent years of treatment, as the technology has been undergoing continual innovation, which may influence the associated risks."

This is also the first study to make a comparison with pregnancies in women diagnosed with infertility, but who never received intensive treatment.

"Women in this group who eventually conceived without the help of invasive assisted reproduction gave birth to babies who were nine times more likely to have very [low birth weight](#), seven times more likely to be very preterm, and almost seven times more likely to die within the first 28 days of birth. This may be due to the underlying medical conditions related to their infertility, or the use of fertility medications or therapies that are not recorded," Professor Davies says.

More information: [dx.plos.org/10.1371/journal.pone.0080398](https://doi.org/10.1371/journal.pone.0080398)

Provided by University of Adelaide

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