

Large meta-analysis links IVF to higher gestational diabetes risk

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Women who give birth to singleton babies following assisted reproductive technologies including vitro fertilisation (IVF) are at greater risk of developing gestational diabetes than those who conceive naturally, according to a meta-analysis involving over almost 2 million singleton pregnancies.

The analysis, being presented at this year's European Association for the Study of Diabetes (EASD) Annual Meeting in Barcelona, Spain (16-20 September), found a 53% increased risk of [gestational diabetes](#) in women who became pregnant via assisted [reproduction](#) techniques (4,776/63,760 women) compared with spontaneous conception (158,526/1,870,734).

More than 8 million babies have been born from assisted reproduction technologies around the world since the first IVF baby in 1978. Estimates suggest that more than half a million babies are now born each year from IVF and [intracytoplasmic sperm injection](#) (ICSI)—a procedure in which a single sperm cell is injected directly into an egg, rather than fertilisation happening in a dish, as in standard IVF.

Pregnancies achieved by assisted reproduction are associated with more obstetric and perinatal complications, such as pre-eclampsia, placental anomalies, caesarean sections, early delivery, and low birthweight, compared with pregnancies achieved by natural conception, even among singleton births. But whether assisted reproduction technologies are linked with gestational [diabetes](#) is unclear and previous studies have

yielded contradictory results.

In this study, Dr. Panagiotis Anagnostis from the Aristotle University of Thessaloniki in Greece and colleagues did a [systematic review](#) and meta-analysis of cross-sectional studies, comparing the risk of gestational diabetes in singleton pregnancies achieved by IVF and ICSI and spontaneous conception up to July 2019.

Analysis of data from 38 studies (17 matched controls and 21 unmatched), involving nearly 2 million women and 163,302 cases of gestational diabetes, found that women who gave birth to singleton babies following assisted reproduction were 53% more likely to develop gestational diabetes than those who conceived naturally.

Further analysis of 17 studies (involving 21,606 women) in which women were matched for age, height, weight, smoking status, and ethnic origin indicated that women who underwent assisted reproduction techniques were 42% more likely to develop gestational diabetes compared with spontaneous conception.

"This rigorous assessment of the best available evidence to date shows that singleton pregnancies achieved by IVF are linked with an increased risk of developing gestational diabetes compared with pregnancies conceived naturally", says Dr. Anagnostis. "The exact mechanism is unclear, and whether this risk is due to the medical intervention or the underlying infertility status of the couples undergoing assisted reproduction, is not yet fully understood and requires further research."

He adds: "Whilst gestational diabetes remains a rare outcome for assisted reproduction technologies, the complications of the former indicate that [women](#) at risk must be identified and monitored, ensuring they receive early detection and appropriate support and care."

As this is a meta-analysis of observational studies, no firm conclusions can be drawn about cause and effect, and the authors point to several limitations including that most studies did not adjust for important confounders.

Provided by Diabetologia

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