

Publicly funded fertility program linked to a decrease in rate of multifetal pregnancy

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In the era after the introduction of publicly funded in vitro fertilization (IVF) mandating elective single embryo transfer, the multifetal pregnancy rate decreased significantly for IVF, but the contribution of ovulation induction and intrauterine insemination (OI/IUI) to multifetal pregnancy still needs attention, according to a new study from ICES and Queen's University.

Twins, triplets, and higher multifetal pregnancies are associated with some adverse outcomes in pregnancy and childbirth. Fertility treatments such as IVF and ovulation induction and [intrauterine insemination](#) (OI/IUI) are more likely to result in a multifetal pregnancy. In Canada, Ontario's publicly funded fertility program mandated the use of elective single embryo transfer (eSET) in 2015.

In a study, "Multifetal pregnancy after implementation of a publicly funded fertility program," published in *JAMA Network Open* researchers evaluated the association between fertility treatment and multifetal pregnancies in Ontario for over 1 million pregnancies between 2006 and 2021. This is one of the first studies to include all forms of fertility treatments and accounted for fetal reductions that may have been performed earlier in a pregnancy.

"While we found a substantial decrease in multifetal pregnancy rates for IVF after the mandate was introduced, we didn't see the same decrease after OI/IUI," says lead author Maria Velez, an adjunct scientist at ICES and associate professor in the department of Obstetrics and Gynecology at Queen's University.

"It's more difficult to regulate multifetal pregnancies with this type of fertility treatment, because the type of protocols used and adherence to specific cancellation criteria may differ across clinics."

Of the total number of pregnancies, 96.9% were from unassisted conception, 1.4% from OI/IUI and 1.7% from IVF. Compared to those who had unassisted conception, people who received fertility treatments tended to be older, lived in higher-income communities, and had more preexisting health conditions.

The overall rate of multifetal pregnancies declined from 2006 to 2021, but the decrease was greater for IVF pregnancies than for those

conceived by OI/IUI. When comparing the time periods before and after the eSET mandate, the rate of multifetal pregnancies declined from 13% to 9% with OI/IUI, and from 29% to 7% with IVF.

Improvements in assisted reproductive technology (ART) have also influenced rates of multifetal pregnancies. Advances in technologies such as embryo culture media and elective freezing of all available embryos means higher success rates for pregnancy.

However, the authors say that "Future studies should address the [cost-effectiveness](#) of providing one vs. multiple publicly funded IVF cycles, especially because some couples in Ontario still pursue privately paid IVF cycles, which can result in a higher rate of multifetal pregnancy and an inherently higher risk of maternal and neonatal morbidity."

One limitation of the study was the lack of detail about those who underwent fetal reduction. The data also did not capture information about the type of medication used for OI/IUI, and IVF cycles would have included both private and publicly funded treatments.

Nevertheless, the findings show that changes to assisted reproductive technology and the introduction of a publicly funded IVF program in Ontario both contributed to a decrease in the risk of multifetal [pregnancy](#).

"Future work should address the higher risk associated with OI/IUI, and changes may be needed to standardize protocols and cancellation policies," says Velez.

More information: Multifetal Pregnancy After Implementation of a Publicly Funded Fertility Program, *JAMA Network Open* (2024). [DOI: 10.1001/jamanetworkopen.2024.8496](https://doi.org/10.1001/jamanetworkopen.2024.8496)

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