

# COVID infection in women having ovary stimulation lowered chances for pregnancy

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Testing positive for a COVID-19 infection during a particular phase of

fertility treatment could reduce the odds for a successful pregnancy, a new study says.

That phase of treatment is called controlled [ovarian stimulation](#)—a technique used to induce ovulation during in vitro fertilization (IVF).

Researchers led by [Fen Tian](#), of Central South University in China, say doctors should counsel couples undergoing controlled ovarian stimulation that COVID-19 infection may affect the quality of embryos and the stage of development prior to that, when the ball of cells is a "blastocyst."

But some fertility experts expressed reservations about the study, which followed 585 couples in China. PCR testing was used to determine if either partner or both had a COVID-19 infection at the time of ovarian stimulation. Researchers said 135 tested positive.

Although the study was the largest to date, it was still relatively small, said [Dr. Lilli Zimmerman](#), who specializes in reproductive endocrinology, infertility and obstetrics/gynecology for Northwell Health in Manhasset, N.Y. Zimmerman was not involved in the study.

"My main takeaway was that many more studies are needed about this topic. COVID is still a very new kind of infection, even this many years into the pandemic. And I think that it's going to take many studies, for many years, to really elicit the effects of COVID infection on [reproductive outcomes](#), particularly in regards to IVF," Zimmerman said.

Policies about COVID-19 testing and procedures can vary from one health care system to another and have shifted throughout the pandemic, she noted.

There can be downsides for the patient in delaying IVF, Zimmerman said, including that aging continues to happen, which can affect fertility. Stopping before a planned egg retrieval far into the cycle can also lead to ovarian hyperstimulation and pain, she said.

The research for this study was retrospective, using data from seven reproductive centers in four provinces across China, from October through December 2022.

The researchers found that couples with a COVID-19 infection had significantly lower top-quality embryos and blastocyst, blastocyst formation and available blastocyst rates than couples without an infection during controlled ovarian stimulation.

Based on the study, it would make sense to avoid starting an IVF cycle in someone who has a known infection and to be extra diligent during a stimulation to avoid getting exposed to an infection, said [Dr. Lindsay Kroener](#), a [reproductive endocrinology](#) and infertility specialist at University of California, Los Angeles Health.

"It is important to note that this study does not look at clinical outcomes such as pregnancy rates or live birth rates from embryos transferred from these cycles," said Kroener, who wasn't involved in the study.

"While this data does demonstrate a negative impact on blastocysts development and quality when one or both partners are infected with SARS-CoV-2, the absolute difference in outcomes is still fairly small," Kroener added.

It also doesn't seem to affect the number of oocytes (immature eggs) retrieved, Kroener noted.

"Based on this study, active infection negatively impacts embryology

outcomes, but even cycles from SARS-CoV-2-infected patients still yielded usable, high-quality embryos," Kroener said.

A positive COVID-19 test doesn't necessarily mean the IVF cycle must be canceled, she added.

"The decision to move forward with a stimulation and retrieval versus canceling a cycle may depend on a number of factors, including patient counseling, how far along the patient is in their stimulation, and the amount of time and medication that has been invested, as well as whether the center will allow them to proceed with retrieval with active infection," Kroener said.

An infertility center also might delay or cancel procedures in patients who have an active COVID-19 infection because some procedures use anesthesia, which might create complications for someone with respiratory symptoms from the infection.

There is also concern that staff and other patients might be exposed to the virus, Kroener said.

An embryo transfer wouldn't be done in a patient with an active COVID-19 infection because of the risks associated with COVID [infection](#) during pregnancy, she noted.

Controlled ovarian stimulation during IVF involves taking daily injections of hormonal medications known as gonadotropins for eight to 12 days. Patients are monitored regularly with transvaginal ultrasounds and blood work to determine when the follicles are the optimal size to trigger ovulation, Kroener explained.

Egg removal is typically done about 35 to 36 hours after a trigger shot is given, with the eggs removed from the follicles in the ovary through a

needle, she said.

Other studies have shown no evidence of the virus in follicular fluid, Zimmerman noted.

"We have no way to know long-term outcomes and this is what we've been counseling patients since the beginning of the pandemic. We have no way to know if there's any long-term outcomes on babies, and that's ultimately the reproductive goal of IVF," Zimmerman said.

The study results were published online July 13 in *JAMA Network Open*.

**More information:** Fen Tian et al, Association of SARS-CoV-2 Infection During Controlled Ovarian Stimulation With Oocyte- and Embryo-Related Outcomes, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.23219](https://doi.org/10.1001/jamanetworkopen.2023.23219)

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