Fertility Treatments, Including IVF, Not Linked to Higher Overall Cancer Rates

However, a new study found higher and lower rates of specific cancers among women who underwent fertility treatments.

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Medically assisted fertility treatments, such as in vitro fertilization (IVF) and intrauterine insemination (IUI), were not associated with an overall higher rate of cancer in a cohort study from the University of New South Wales (UNSW). In other words, women who underwent fertility treatments experienced the same overall rates of cancer as women of similar ages.

However, when researchers compared individual cancers and specific fertility treatments, they observed some differences in incidence. For example, cutaneous melanoma (a skin cancer) and hormone-sensitive cancers (uterine and ovarian) were more common in women who used fertility treatments, while cervical, tracheal, bronchial and lung cancer were less common.

These differences could be due to risk factors and not the fertility treatments, according to an article in The Conversation, which also noted that "overall, these findings are reassuring for women who have received or are planning fertility treatments."

"This study focused on comparing rates of cancer in different populations, not whether fertility treatments themselves cause cancer. As such, we must consider the preexisting risks of cancer in these populations when interpreting the findings," said the study's second author, Adrian Walker, PhD, in a UNSW press release. "Women with infertility who are having or have had treatment, like all women, should ensure that they have regular checkups and seek further evaluation if they have concerns about unusual symptoms."

Multiple forms of fertility treatment are available, and people often try more than one to achieve pregnancy. Assisted reproductive technologies (ART), like IVF and intracytoplasmic sperm injection (ICSI), involve removing and fertilizing a mature egg outside the uterus as a treatment for infertility. During IVF, an egg is fertilized with sperm in a laboratory and placed back into the uterus; during ICSI, a single sperm is injected into the center of an egg.

Assistive reproductive technology is the most popular fertility treatment. In the United States, 95,860 babies were born via IVF in 2023, accounting for 2.6% of overall births, an increase from previous years, according to the American Society for Reproductive Medicine. Total number of IVF cycles performed, successful or not, also increased: from 389,993 in 2022 to 432,641 in 2023.

Less invasive versions of medically assisted reproduction are also available. For example, people experiencing infertility can take the medication clomiphene citrate to induce ovulation. Ovarian stimulation is often coupled with intrauterine insemination (IUI), during which a concentrated sperm wash is administered directly to the uterus during ovulation to get sperm closer to the egg.

For this latest study, the researchers followed 417,984 women ages 18 to 55 from the day of their first fertility treatment—including ART treatments (IVF, ICSI), IUI and ovulation induction—to the end of 2019. Using the Australian Cancer Database, the researchers linked cancer data to fertility treatment data while accounting for variables such as socioeconomic status, age or residential area.

“What this study does is describe cancer patterns we’re seeing at a population level,” said Walker in UNSW’s press release. “It doesn’t tell us the risk of receiving treatment or the risk for individual women who undergo treatment."

Generally, people who received infertility treatments had the same overall incidence of cancer as the general population. However, there were cancer-specific differences, some of which the researchers said could be due to many different factors.

Melanoma, uterine cancer and ovarian cancer were slightly more common in people who underwent medically assisted reproduction.

“Women who need fertility treatment may differ from other women in ways that affect cancer risk,” said lead study author Claire Vajdic, PhD, in UNSW’s press release. “Certain underlying causes of infertility, such as endometriosis and polycystic ovary syndrome, are known to increase the risk of uterine and ovarian cancers.”

Noninvasive breast cancer was also more common among women who received IVF. On the other hand, cervical and lung cancers were less common for people who underwent fertility treatments.

“Women who’ve had assisted fertility should continue to participate in routine cancer screening programs they’re eligible for,” said Walker. “And they should discuss their cancer risk with their doctor to understand how else they can reduce their risk.”

To learn more about the types of cancers mentioned here, check out Cancer Health’s Basics on cervical cancer, uterine cancer, ovarian cancer, breast cancer, cutaneous melanoma and lung cancer.
