

IVF treatment not associated with increased risk of breast cancer

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Micrograph showing a lymph node invaded by ductal breast carcinoma, with extension of the tumour beyond the lymph node. Credit: Nephron/Wikipedia

Among women undergoing fertility treatment in the Netherlands between 1980 and 1995, the use of in vitro fertilization (IVF) compared with non-IVF treatment was not associated with increased risk of breast cancer after a median follow-up of 21 years, according to a study appearing in the July 19 issue of *JAMA*.

For decades, breast cancer has been the most common malignancy among [women](#) worldwide. Both exogenous and endogenous estrogens and progestogens have been shown to affect breast cancer risk. Since IVF procedures temporarily cause decreased estradiol and progesterone levels, as well as strongly elevated hormone levels, IVF might influence breast cancer risk. Because of the high incidence of breast cancer and the large numbers of women undergoing ovarian stimulation for IVF, even a small risk increase would have important public health implications. Previous studies of breast cancer risk after IVF treatment were inconclusive due to limited follow-up.

Alexandra W. van den Belt-Dusebout, Ph.D., of the Netherlands Cancer Institute, Amsterdam, and colleagues assessed long-term risk of breast cancer after ovarian stimulation for IVF among 19,158 women who started IVF treatment between 1983 and 1995 (IVF group) and 5,950 women starting other fertility treatments between 1980 and 1995 (non-IVF group). The median age at end of follow-up was 54 years for the IVF group and 55 years for the non-IVF group. The incidence of invasive and in situ breast cancers in women who underwent fertility treatments was obtained through linkage with the Netherlands Cancer Registry (1989-2013).

Among 25,108 women (average age at study entry, 33 years; average number of IVF cycles, 3.6), 839 cases of [invasive breast cancer](#) and 109 cases of in situ breast cancer occurred after a median follow-up of 21 years. Analysis indicated that breast cancer risk in IVF-treated women was not significantly different from that in the general population and

from the risk in the non-IVF group. The cumulative incidences of breast cancer at age 55 were 3 percent for the IVF group and 2.9 percent for the non-IVF group.

The risk did not differ by type of fertility drugs or subfertility diagnosis and was not increased at 20 or more years after IVF treatment. Women with 7 or more IVF cycles had a significantly decreased risk compared with women treated with 1 to 2 IVF cycles. Poor response to the first IVF cycle was also associated with decreased [breast cancer risk](#).

"These findings are consistent with the absence of a significant increase in the long-term risk of [breast cancer](#) among women treated with these IVF regimens," the authors write.

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