

Health indicators for newborns of breast cancer survivors may vary by cancer type

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For breast cancer survivors, the risk of giving birth prematurely, and for other health concerns for their newborns, may depend on the type of breast cancer they had, according to a study from University of North Carolina Lineberger Comprehensive Cancer Center researchers.

In a study published in the *International Journal of Cancer*, researchers analyzed health indicators for children born to young [breast cancer](#) survivors in North Carolina. This included evaluating whether newborns were born preterm (less than 37 weeks), if they were below normal weight, small for gestational age, or if they were born through a Cesarean delivery. Overall, there was not an increase in the prevalence of preterm birth, C-section, small for gestational age, or low birth weight for newborns across all [breast cancer](#) types.

"We're focusing on these outcomes because we know that child development in utero is important, and every week matters," said UNC Lineberger's Hazel B. Nichols, PhD, assistant professor in the UNC Gillings School of Global Public Health.

However, when they examined the data by breast cancer type, researchers found increased risk of preterm birth, low birth weight, and C-section delivery for women with estrogen receptor-negative breast cancer. Researchers cautioned that further studies are needed to confirm the finding.

"The good news is that overall, women who conceived after their breast cancer diagnosis did not have an increased risk of preterm birth," Nichols said. "However, when we looked more closely, we saw that women with estrogen receptor-positive breast cancer didn't have an increased risk of preterm birth, but women with estrogen receptor-negative breast cancer did—and it was almost twice as high. What we need to do next is to see if this same finding is replicated in larger studies."

As survival rates for breast cancer improve, more women face questions about their lives after cancer, including about their plans to start, or complete, their families. Studies from Canada and Europe have found there is a lower incidence of childbirth for breast cancer survivors compared to women of the same age in the general population. Previous studies have pointed to higher risks of low birth weight and preterm deliveries compared to women without breast cancer. However, these risks have not been examined by breast cancer type, the researchers said.

"This study is one piece of a larger effort to understand the needs of women with breast cancer beyond their cancer treatment," Nichols said. "A breast cancer diagnosis can impact a lot of different aspects of your life, and building a family is one of them. Increasingly, research is focused on providing answers for those long-term questions that women have."

The study used N.C. Central Cancer Registry data to analyze the cases of 4,978 women diagnosed with breast cancer in North Carolina between 2000 and 2013. For the group overall, they found no significant difference in the prevalence of pre-term birth, [low birth weight](#), and other measures between women with or without breast cancer. But for women with estrogen receptor-negative breast cancer, 18 percent of births were preterm. That compares to a rate of about 10 percent of all births in North Carolina that are preterm, Nichols said. She cautioned that they need to ensure this is a real finding by examining a larger number of patients.

"Fewer women have estrogen receptor negative breast cancer, so our results were based on a small number of women," Nichols said. "What we need to do next is to see if the same pattern is seen in other studies as well."

Analyzing the number of live births to women that

occurred after their diagnosis, they found that about 8 percent of those women had had at least one child by 10 years after their diagnosis.

Compared to the general population, the birth rate for women with breast cancer in the study was about 57 percent lower than for women who did not have breast cancer, Nichols said. Births were less common in women who received chemotherapy, and in women who had breast cancer at more advanced stages.

And while researchers found that women with estrogen receptor-negative breast cancer were initially more likely to have children after their breast cancer diagnosis than were women with estrogen-receptor positive breast cancer, the proportion of women who went on to have children (about 10 percent) was similar in both groups 10 years after diagnosis.

Researchers say this difference could be attributed to treatment for estrogen receptor-positive breast cancer. These treatments, which target estrogen, are recommended to be taken at least 5 years to prevent cancer recurrence. A clinical trial at UNC Lineberger and other centers is investigating whether endocrine therapy can be safely interrupted to allow women to conceive during this period.

"Though women who have estrogen receptor-positive breast cancer are less likely to have a child in the first five years following their diagnosis, they do catch up by 10 years," Nichols said. "We're seeing lower births during the time period when they're most likely to be taking endocrine therapy."

The researchers also plan to survey young women with breast cancer later this year to probe possible explanations for the lower [birth](#) rate among [breast cancer survivors](#). They hope to determine if it is a side effect of treatment or whether the women chose not to become pregnant. They also intend in a future study to evaluate whether [preterm birth](#) affects later outcomes for the child's health.

Nichols said that the study's findings reinforced that fertility counseling is important for breast cancer patients who may want to have children.

"There are very consistent recommendations that women who are diagnosed with breast cancer should be counseled before they're treated about any potential risks of their cancer treatment on future fertility," Nichols said. "I think we need to do a better job making sure all [women](#) with cancer get the information they need before they start their treatment."

More information: Chelsea Anderson et al. Live birth outcomes after adolescent and young adult breast cancer, *International Journal of Cancer* (2017). [DOI: 10.1002/ijc.31227](https://doi.org/10.1002/ijc.31227)

Provided by UNC Lineberger Comprehensive Cancer Center

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