

Many childhood cancer survivors have uncomplicated pregnancies, healthy babies

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Women who survived cancer in childhood or adolescence or women whose male partner is a childhood cancer survivor do not appear to have an increased risk of major complications during pregnancy, having babies with birth defects or infant deaths, according to two reports in the October issue of *Archives of Pediatrics & Adolescent Medicine*, one of the JAMA/Archives journals. However, increased rates of preterm births and low birth weight—especially among those with certain cancers or who received certain treatments—indicate that these pregnancies and infants should be closely monitored.

Chemotherapy, radiation treatment and surgery for [cancer](#) may affect the future reproduction of patients with childhood cancers, according to background information in the articles. As the number of young cancer survivors increases, identifying possible adverse outcomes among their offspring is a growing concern.

In one article, Beth A. Mueller, Dr.P.H., of Fred Hutchinson Cancer Research Center and the University of Washington, Seattle, and colleagues used cancer registries to identify women who were diagnosed with cancer from 1973 through 2000, when they were younger than 20 years. They then used linked birth records to find 1,898 infants born to these women after their cancer diagnoses. These births were compared with 14,278 among women of the same age and race who had babies the same year, but had not had cancer.

Infants born to childhood cancer survivors were not at increased risk of

[birth defects](#) or of death, but did have a 54 percent increased risk of being born preterm and a 31 percent increased risk of weighing less than 2,500 grams. However, these infants were not at increased risk of being small for gestational age, suggesting that size differences were not severe enough to meet criteria for this designation.

The researchers also analyzed infant outcomes by the type of cancer and treatments the mother had. "Risk of preterm delivery was greatest after leukemia but also was associated with lymphoma, bone tumors, soft-tissue sarcomas and an abdominal primary cancer site. Among treatment exposures, chemotherapy was associated with a two-fold increased risk of preterm delivery, but relative risks were significantly increased for most other modalities as well," they write.

Diabetes, preeclampsia and anemia occurred at similar rates in all the women. However, when groups were stratified by diagnostic and treatment characteristics, bone cancer survivors had an increased risk of diabetes, anemia was increased among those with brain tumors and cancer survivors treated with chemotherapy and a borderline higher risk for preeclampsia was observed among women who were treated with a combination of chemotherapy, surgery and radiation.

"Children and adolescents with cancer can be reassured that we did not find an increased risk of malformations or infant death among their first subsequent offspring," the authors conclude. "The increased occurrence of low birth weight and preterm delivery among childhood cancer survivors and of preterm delivery among young genital tract carcinoma survivors that we and others have observed may indicate relatively less severe potential problems among offspring. However, these outcomes can still greatly affect families, are associated with significantly increased costs and indicate a need for close monitoring of pregnancies among childhood and adolescent cancer survivors."

In another report published in the same issue, Eric J. Chow, M.D., M.P.H., also of Fred Hutchinson Cancer Research Center, Seattle, and the same group of colleagues used similar records to identify 470 offspring of men diagnosed with childhood cancers between 1973 and 2000. A total of 4,150 comparison fathers who were the same age and race/ethnicity and had babies born the same year, but had not been diagnosed with cancer, also were studied.

Compared with infants born to men who were not cancer survivors, offspring of men with cancer had a "borderline risk" of weighing less than 2,500 grams at birth, especially if the father's cancer was diagnosed at a younger age or was treated with chemotherapy. "However, they were not at risk of being born prematurely, being small for gestational age, having malformations or having an altered male to female ratio," the authors write.

"Overall, female partners of male survivors were not more likely to have maternal complications recorded on birth records vs. the comparison group," they continue. However, a higher risk of preeclampsia was associated with some cancers, especially brain tumors.

"Most pregnancies resulting in live births among partners of male childhood [cancer survivors](#) were not at significantly greater risk of complications vs. comparison subjects," the authors conclude.

"However, our findings of increased low birth weight and preeclampsia associated with some diagnostic groups raises the possibility that prior cancer therapy may affect male germ cells [cells that will become sperm] with effects on female partners and progeny of male survivors."

More information: Arch Pediatr Adolesc Med. 2009;163[10]:879-886, 887-894.

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