

Introduction: Induced Abortion Increases Breast Cancer Risk

In the past 30 years, landmark advances in developmental and molecular breast biology coupled with multiple epidemiologic studies from around the world have shown induced abortion to be an independent risk factor for breast cancer. Induced abortion before 32 weeks' gestation will impede the natural maturation process in the breast such that there is a significantly greater probability that breast cancer will develop later. Those most at risk of developing breast cancer after an abortion include teenagers (almost half of all first induced abortions between 2006 and 2010 were reportedly to teenagers¹) and women over 30, especially if they have a family history of breast cancer.²

A 2013 study published in the *Journal of the American Medical Association*³ found an alarming increase in "distant" breast cancer among women aged 25 to 39. "Distant" breast cancer is breast cancer that has metastasized "remote[ly]... ([to the] bone, brain, lung, etc)."⁴ This rise in breast cancer incidence amounted to an increase of 2 percent per year from 1976 to 2009,⁵ and it persisted across three different sets of National Cancer Institute data.⁶

A review of National Cancer Institute cancer data⁷ shows invasive breast cancer incidence was 24 percent higher in 2007 than in 1976. At its peak over that period, in 1999, invasive breast cancer incidence was almost 40 percent higher than in 1976. These data show an increase of over 400 percent in *in situ* breast cancer incidence among women under age 50 between 1976 and 2007. An approximately 560 percent increase in *in situ* breast cancer incidence occurred among women of all ages over the same period.

The study published in the *Journal of the American Medical Association* makes little attempt to empirically determine the source of this increase in breast cancer incidence among younger women. However, that the increase is occurring is reason enough to study more carefully the increased vulnerability to breast cancer that we think induced abortion confers on women.

Given what is known of breast physiology and the reproductive risks described in standard medical texts,⁸ it is most natural that induced abortions would cause an increase in the risk of breast cancer. It has been known for centuries that remaining childless increases a woman's risk for breast cancer; conversely, it has also been known that pregnancy is protective. In 1743, Ramazzini of Padua observed that there was a higher incidence of breast cancer among nuns.⁹ Nuns were largely childless, whereas the rest of the population had pregnancies early in their reproductive lives.

No matter the length of her pregnancy (save those that end in first-trimester spontaneous abortions¹⁰), until 32 weeks' gestation, a woman will experience changes in her breast tissue that *will increase* her risk of breast cancer. However, the epigenetic changes that occur in the breast lobules during a pregnancy lasting more than 32 weeks offer lifelong protection against breast cancer.¹¹ Molecular biologists have determined that progenitor cells, or stem cells, in the breast do not become terminally differentiated (reach their full potential growth, or mature) until they have undergone pregnancy and have lactated.¹² It has also been determined that these progenitor cells are lower in number in parous women and the number of these cells is related to breast cancer risk.¹³ It is only after 32 weeks' gestation that elevated levels of pregnancy hormones allow sufficient maturation of cancer-resistant breast tissue to occur. Therefore, whether a pregnancy ends before 32 weeks with a premature birth, a second-trimester spontaneous abortion (that is, a miscarriage),¹⁴ or an induced abortion, a woman's risk of breast cancer is increased.¹⁵

After a full-term pregnancy, only about 10 to 30 percent of a mother's breast tissue remains susceptible to forming cancer.¹⁶ With each pregnancy a woman has subsequent to her first, her risk of breast cancer will decrease another 10 percent.¹⁷ However, the longer a woman waits to have her first full-term pregnancy, the higher is her risk of breast cancer, as her immature, cancer-vulnerable breast

tissue is exposed to carcinogens for a longer duration. This period of time between menarche (the first menstrual cycle) and a pregnancy is termed the “susceptibility window,” as the breast is most adversely affected by carcinogens during that period.¹⁸ A long susceptibility window accounts for the transient (but statistically significant) rise in breast cancer risk that occurs in women who delay their first pregnancy until after age 30.¹⁹ During her susceptibility window, a woman may have developed a mutation or a cancer cell that the proliferation phase of her pregnancy would cause to grow.

Hence, a woman who is pregnant and chooses abortion to end her pregnancy will deny herself the risk-lowering effects of a full-term pregnancy and will either remain childless or delay pregnancy, both of which increase her risk of premenopausal breast cancer at a rate of 5 percent per year of delay.²⁰ These also put her at risk of premature delivery before 32 weeks,²¹ which would double her breast cancer risk.²² However, abortion itself poses an independent risk of breast cancer; that risk is the subject of this review.

We have endeavored to make the present review comprehensive. We have drawn on the literature and relevant medical texts to explain breast physiology and the epidemiologic studies that differentiate induced from spontaneous abortion in its relation to breast cancer, and we make recommendations for further research.

What follows immediately is a review of the biological changes in breast tissue over a woman’s lifetime and during pregnancy. Thereafter, we review and critique the research available and its evaluation by academics and relevant scientific organizations. We then review various guidelines for establishing causation in epidemiological studies and conclude with research recommendations.

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⁴*Id.* at 800.

⁵When broken down, women aged 25 to 34 were found to have a slightly larger annual percent increase in risk than women aged 35 to 39. Among women aged 25 to 39, the increased risk was significant and pronounced among black women, as well as among non-Hispanic white women and women residing in metropolitan areas, though fewer years of data were available for this analysis.

⁶SEER (the program that collected the referenced data), or the Surveillance, Epidemiology, and End Results Program, is a program of the National Cancer Institute.

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