

Anti-choice Claims About Abortion and Breast Cancer

Studies have shown that abortion is not associated with breast cancer. Undaunted by the absence of compelling evidence, anti-choice extremists insist on making the connection anyway. Once more they are using misinformation as a weapon in their campaign against safe, legal abortion.

Anti-choice zealots have drawn highly questionable conclusions to develop “public education” campaigns such as the advertisements sponsored by Christ’s Bride Ministries that appeared on public transportation vehicles in Philadelphia warning that “women who choose abortion suffer more and deadlier breast cancer” (Slobodzian, 1999). These misinformation campaigns have used many forms of media and advertising to mislead women about abortion, including television, billboards, bumper stickers, and print ads (Simon, 2002).

Anti-abortion foes are also lobbying for legislation that would require telling women who are considering abortion that having one would place them at an increased risk for breast cancer (Querido, 1999).

Anti-choice claims linking abortion and breast cancer fly in the face of scientific evidence. The National Cancer Institute (NCI), the American Cancer Society (ACS), and the The American College of Obstetricians and Gynecologists (ACOG) have all refuted the reliability of such an association (ACS, 2003; ACOG, 2003; NCI, 2003).

Rigorous Studies Dismiss Association

In February 2003, NCI convened the Early Reproductive Events and Breast Cancer Workshop to “provide an integrated scientific assessment of the association between reproductive events and the risk of breast cancer.” After reviewing the body of

scientific literature, NCI concluded that “Induced abortion is not associated with an increase in breast cancer risk” (NCI, 2003).

In August 2003, after conducting its own review of the scientific literature, ACOG issued a committee opinion concluding that “early studies of the relationship between prior induced abortion and breast cancer risk have been inconsistent and are difficult to interpret because of methodologic considerations. More rigorous recent studies argue against a causal relationship between induced abortion and a subsequent increase in breast cancer risk” (ACOG, 2003).

Reproductive Factors and Breast Cancer

While researchers do not know what causes breast cancer, reproductive factors have been associated with risk for the disease since the 17th century, when breast cancer was noted to be more prevalent among nuns. It is known that having a full-term pregnancy early in a woman’s childbearing years is protective against breast cancer, and some studies have also indicated that breastfeeding, especially in women who are young when they give birth, may reduce a woman’s risk of developing the disease. A woman’s age at menarche and menopause also influence her risk for breast cancer, with earlier onset of regular menstrual cycles and later age at menopause associated with higher risk (Kelsey & Gammon, 1991). However, the best available evidence — from large population-based cohort studies — shows no net effect that induced abortion places women at increased risk for developing breast cancer (ACOG, 2003; ACS, 2003; Bartholomew & Grimes, 1998; NCI, 2003).

Hypothesis: Hormones Lead to Breast Cell Differentiation

The theory linking pregnancy termination and breast cancer is based on the hormonal disruption that occurs when a woman's pregnancy is interrupted. Pregnancy initiates a surge of sex hormones (estrogen, progesterone, and prolactin), which leads to differentiation of the cells in the breast glands in preparation for lactation. The changing concentrations of hormones during the second and third trimesters of pregnancy lead to increased differentiation. In a first pregnancy, the results of these hormonal changes permanently alter the structure of the breast. Adherents of this theory claim that interruption of the first trimester of a first pregnancy causes a cessation of cell differentiation that may result in a subsequent increase in the risk of cancerous growth in these tissues (Brumsted & Riddick, 1990; Westhoff, 1997). Attempts to prove this theory, however, have failed.

Many Factors Contribute to Inconclusive Study Results

At least 80 research studies worldwide have collected data about breast cancer and reproductive factors such as childbirth, menstrual cycles, birth control pills, and abortion. Approximately 30 studies have examined the risk of developing breast cancer for women who have had abortions. Researchers at the National Cancer Institute, the American Cancer Society, the Royal College of Obstetricians and Gynecologists, the World Health Organization, and major universities say that the most reliable studies show no increased risk, and they consider the entire body of research inconclusive (ACS, 1999; NCI, 2002; Rosenfield, 1994?; RCOG, 2001; WHO, 2000).

A number of factors may render a study unreliable:

- Miscarriages and induced abortion affect a woman's body differently but many studies have not distinguished between them.
- Many women do not report miscarriages because they are unaware they have had them.
- Abortions are often unreported because of the privacy of the decision to terminate a pregnancy.

- Some studies have not examined the possibly different effects of abortion after or before a full-term pregnancy.
- Other studies have not been careful to examine the impact of age at the time of abortion and age at the time of first childbirth.
- Many studies have been too small to be statistically significant. (Collaborative Group..., 2004; NCI, 2002; Wingo et al., 1997).

Three of the Strongest Studies Published to Date Show no Overall Relationship Between Induced Abortion and Breast Cancer

One of the most highly regarded studies on abortion and breast cancer was published in the *New England Journal of Medicine* in 1997. This study of 1.5 million women found no overall connection between the two (Melbye et al., 1997). This study benefited from its size — 1.5 million women — and by linking data from the National Registry of Induced Abortions and the Danish Cancer Registry, thereby avoiding one of the pitfalls observed in some case-control studies — that women with breast cancer were more likely to recall having had an induced abortion than women without breast cancer, particularly because abortion had been illegal (Brody, 1997; Westhoff, 1997). An accompanying editorial on the results of the study led the writer to conclude that, "in short, a woman need not worry about the risk of breast cancer when facing the difficult decision of whether to terminate a pregnancy" (Hartge, 1997).

Another large cohort study was done in Sweden. It followed, for as long as 20 years beginning in 1966, 49,000 women who had received abortions before the age of 30. Not only did the study show no indication of an overall risk of breast cancer after an induced abortion in the first trimester, but it also suggested that there could well be a slightly reduced risk. Among women who had given birth prior to induced abortion, the relative risk^{*} for breast cancer was 0.58; for those who had never given birth, the relative risk was 1.09; for the total sample, the relative risk was 0.77 (Lindfors Harris et al., 1989).

* The risk of disease in one group, here in women who experienced an induced abortion, divided by the risk of disease in a control group. If the relative risk is 1, both groups have the same likelihood of developing the disease. A number higher than 1 indicates an increased risk and a number lower than 1 indicates a decreased risk.

In 2004, an international collaborative analysis of data about 83,000 women with breast cancer who were involved in 53 studies that took place in countries with liberal abortion laws found that pregnancies that end in either induced or spontaneous abortion do not increase a woman's risk of developing breast cancer (Collaborative Group..., 2004).

Studies Published During the Past 20 Years Offer Mixed Results

Before Melbye's seminal study appeared in 1997 in the *New England Journal of Medicine*, the body of published research showed inconsistent and inconclusive evidence — some found abortion to have a protective effect, others found a slightly elevated risk. Many of these studies were hindered by the small sample size, others failed to distinguish between induced and spontaneous abortion, and others did not take confounding factors into account (NCI, 1999).

- A 2001 population-based case-control study of women in China sought to determine whether there was an association between induced abortion and breast cancer. Abortion is common and well-accepted in China, so women involved in this study would not be prone to underreporting their abortion histories — a problem which has rendered other studies unreliable. Because of the small number of women in the study who had never had a live birth, only women who had at least one live birth were included in the analysis. The study compared 1,459 women with breast cancer with 1,556 controls. No relation was found between ever having an induced abortion and breast cancer. Additionally, women who had three or more induced abortions were not at greater risk of breast cancer than other women (Sanderson, et al., 2001).
- Another case-control study of women who had at least one child was conducted in Washington State to examine the relationship between induced abortion and breast cancer. A cohort of women who gave birth between 1984 and 1994 were identified. From this cohort, 463 women who developed breast cancer were each matched with five control women. Induced abortion was not found to increase the risk of developing breast cancer — the relative risk for breast

cancer was 0.9 among women who had ever had an induced abortion (Tang, et al., 2000).

- A 1999 population-based case-control study examined data from the Carolina Breast Cancer Study to determine what, if any, connections exist between induced abortion and other reproductive events in adolescence and the development of breast cancer later in life. The authors reported that neither induced nor spontaneous abortion during adolescence was connected to an increased risk of breast cancer. They did, however, observe that breastfeeding conferred some protection against breast cancer (Marcus et al., 1999).
- In 1996, Joel Brind and colleagues published a meta-analysis of 28 published reports describing 23 studies on induced abortion and breast cancer. Based on these studies, the authors calculated that induced abortion places women at a slightly increased risk for developing breast cancer (Brind et al., 1996). This analysis has been criticized for attempting to calculate the odds for developing breast cancer from widely varying studies (Blettner et al., 1997), some of which have been criticized for methodological flaws and for failing to calculate their results from the raw data of the original studies (Melbye et al., 1997).
- A 1994 study, published in the *Journal of the National Cancer Institute*, was a case-control study of 845 women in Washington State who were diagnosed with breast cancer from 1983 through 1990, and of 961 controls. The study found that among women who had been pregnant at least once, the risk of breast cancer in those who had experienced an induced abortion was 50 percent higher than among other women. Highest risks were observed when the abortion was done at ages younger than 18. No increased risk was associated with a spontaneous abortion. However, the study was relatively small, lacked objective measures for establishing pregnancy duration, and was susceptible to reporting bias, since a breast cancer diagnosis may influence a woman's recall or disclosure of her reproductive history. The authors reported that the study's limitations "argue against a firm conclusion at this time" and called for further research (Daling et al., 1994). An editorial that accompanied the

report said that "it is difficult to see how [the study results] will be informative to the public" (Rosenberg, 1994).

- A 1989 study matched 1,451 women in New York State whose breast cancer was reported from 1976-1980 with controls of equivalent age and residence (Howe et al., 1989). The study examined state health records for the prior incidence of abortion or miscarriage. An odds ratio[†] of 1.9 was found for cases with a history of only induced abortions, 1.5 for only spontaneous abortions, and 4.0 for repeated interrupted pregnancies with no intervening births. However, the cohort consisted only of women under age 40 and the follow-back search was restricted to events that occurred since 1971. The authors believed that the study was inconclusive.
- In a 1987 study, researchers reported "little relation of breast cancer risk with abortions or miscarriages" (La Vecchia, 1987). Four years later, the same researchers again found no consistent relationship (Parazzini, 1991). Other researchers concluded in 1988 that the data "suggest that the risk of breast cancer is not materially affected by abortion, regardless of whether it occurs before or after the first term birth" (Rosenberg, 1988).
- A 1985 study examined the association between spontaneous abortion prior to a first birth and the risk of breast cancer among 3,315 Connecticut women who gave birth between 1946 and 1965. Among women who experienced one childbirth, a prior miscarriage was associated with a 3.5-fold increase in the risk of breast cancer. While the study concluded that an abortion prior to the first live birth may increase a woman's risk of breast cancer, it examined only spontaneous abortion. Among the questions left open to speculation was whether a hormonal imbalance may have resulted in both the spontaneous abortion and the onset of cancer (Hadjimichael et al., 1986).
- A 1981 study of women in Los Angeles County looked at both oral contraceptive use and early abortion as risk factors. The

cohort consisted of 163 women diagnosed with breast cancer between 1972 and 1978. All of the women were aged 32 or younger at the time of diagnosis. The study found that a first-trimester abortion, whether spontaneous or induced, before first full-term pregnancy appeared to cause a relative risk of 2.4 for subsequent development of breast cancer. The extremely small cohort size and the age restriction of the methodology rendered the results inconclusive (Pike et al., 1981).

Risk Factors for Breast Cancer are Varied

In addition to the reproductive factors that affect a woman's risk of developing breast cancer, a wide variety of other considerations have been the subject of continued research by epidemiologists. Of particular concern are factors related to genetics, nutrition (especially dietary fat intake), age, and the environment (exposure to carcinogens) (Jones, 1990).

- A family history of breast cancer is reported to increase a woman's risk of developing the disease twofold to threefold (Jones, 1990). In one study (Sattin et al., 1985), women with a first-degree relative (a mother or sister) with breast cancer had a relative risk 2.3 times that of women without a family history of breast cancer. For women with both an affected mother and sister, the relative risk was 14.
- Of potential carcinogenic significance is the finding that environmentally derived chemicals are secreted into the breast fluid and concentrated by the alveolar ductal system. For example, five minutes after a woman smokes a cigarette, nicotine appears in her breast secretion. Although smoking has not been linked to breast cancer, the finding shows that almost anything to which a woman is exposed may appear in her breast fluid (Jones, 1990).
- Nutritional considerations have focused on dietary fat, with the exception of monosaturated fat such as olive oil. While Asian women show a lower incidence of breast cancer than women in western countries, women who move from areas of low to high incidence, such as Japanese women moving to Hawaii, show a slow but definite increase in breast cancer over

[†]The odds of having a risk factor if a condition is present divided by the odds of having the risk factor if the condition is not present.

successive generations (Wynder & Rose, 1984). Other research has investigated certain metabolic conversions that are affected by total body weight (Deslepeyre et al., 1985).

- Some studies have found that alcohol consumption may be implicated in breast cancer risk, and that the risk may increase in women who consume greater than three drinks of alcohol per week (Hiatt et al., 1984; Willett et al, 1987; Schatzkin et al., 1987).

Planned Parenthood Promotes Women's Health

As the nation's largest provider of reproductive health services, Planned Parenthood is concerned above all with women's health and the risk factors for reproductive health problems. PPFA health centers adhere to strict, nationwide medical standards. Screening and management of breast conditions are integral components of Planned Parenthood services. All clinicians providing routine reproductive health services perform breast examinations and instruct patients in breast self-examination. Breast exams are performed regularly as part of a patient's initial and annual examination, during an initial prenatal visit, and during other non-routine visits. In 2003, Planned Parenthood health centers provided 951,761 examinations.

Although most Planned Parenthood centers do not offer mammography, each affiliate must have a physician available who is able to evaluate patients identified with abnormal breast findings who have been referred by clinicians, either on-site or by referral, and each affiliate maintains a list of radiologists and breast disease specialists to whom Planned Parenthood patients can be referred. All Planned Parenthood health centers also provide abortion counseling and referral for or provision of abortion services — in 2003 Planned Parenthood provided 244,628 abortions nationwide.

The Planned Parenthood Position is That Abortion Poses no Demonstrated Health Risks

The link between induced abortion and breast cancer is a theory whose principal promoters oppose abortion regardless of its safety. The theory has not been borne out by research. While Planned Parenthood believes that women should have access to information about all factors that influence the risk of disease, PPFA also believes that women

deserve information that is medically substantiated and untainted by a political agenda.

Cited References

- ACS — American Cancer Society. (2003, accessed 2004, February 4). *Can Having an Abortion Cause or Contribute to Breast Cancer?* [Online].
- _____. American Cancer Society. (1999, accessed November 2). *Breast Cancer : Prevention and Risk Factors* [Online]. http://www3.cancer.org/cancerinfo/load_cont.asp?st=pr&ct=5 http://www.cancer.org/docroot/CRI/content/CRI_2_6x_Can...
- ACOG — American College of Obstetricians and Gynecologists. "Committee Opinion: Induced Abortion and Breast Cancer Risk." *Obstetrics and Gynecology*, 102, 433–435.
- Bartholomew, Lynne L. & David A. Grimes. (1998). "The Alleged Association Between Induced Abortion and Risk of Breast Cancer: Biology or Bias?" *Obstetrical and Gynecological Survey*, 53(11), 708–714.
- Blettner, Maria, et al. (1997). Comment on Brind *et al.*, "Induced Abortion as an Independent Risk Factor for Breast Cancer." *Journal of Epidemiology and Community Health*, 51, 465–468.
- Brind, Joel, et al. (1996). "Induced Abortion as an Independent Risk Factor for Breast Cancer: A Comprehensive Review and Meta-Analysis." *Journal of Epidemiology and Community Health*, 50, 481–496.
- Brody, Jane E. (1997, January 9). "Big Study Finds No Link in Abortion and Cancer." *New York Times*, p. A12.
- Brumsted, John R. & Daniel H. Riddick. (1990). "The Endocrinology of the Mammary Gland." In William H. Hindle, ed., *Breast Disease for Gynecologists*. Norwalk, CT: Appleton & Lange.
- Collaborative Group on Hormonal Factors in Breast Cancer. (2004, March 27). "Breast Cancer and Abortion: Collaborative Reanalysis of Data from 53 Epidemiological Studies, Including 83,000 Women with Breast Cancer from 16 Countries." *The Lancet*, 363, 1007–1016.
- Daling, Janet R., et al. (1994). "Risk of Breast Cancer Among Young Women: Relationship to Induced Abortion." *Journal of the National Cancer Institute*, 86(21), 1584–1592.
- Deslepeyre, J.P., et al. (1985). "Fat tissue: A Steroid Reservoir and Site of Steroid Metabolism." *Journal of Clinical Endocrinology and Metabolism*, 61, 564.
- Hadjimichael, O.C., et al. (1986). "Abortion Before First Livebirth and Risk of Breast Cancer." *British Journal of Cancer*, 53, 281–284.
- Hartge, Patricia. (1997). "Abortion, Breast Cancer, and Epidemiology." *New England Journal of Medicine*, 336(2), 127–128.
- Hiatt, R.A. & R.D. Bawol. (1984). "Alcoholic Beverage Consumption in Breast Cancer Incidence." *American Journal of Epidemiology*, 120, 676.
- Howe, Holly L., et al. (1989). "Early Abortion and Breast Cancer Risk among Women Under Age 40." *International Journal of Epidemiology*, 18(2), 300–304.
- Jones, Ronald C. (1990). "Epidemiology — Risk Factors." In William H. Hindle, ed., *Breast Disease for Gynecologists*. Norwalk, CT: Appleton & Lange.
- Kelsey, Jennifer L. & Marilee D. Gammon. (1991). *The Epidemiology of Breast Cancer*. Atlanta, GA: American Cancer Society.
- La Vecchia, Carlo. (1987). "General Epidemiology of Breast Cancer in Northern Italy." *International Journal of Epidemiology*, 16, 347–355.
- Lindfors Harris, Britt-Marie, et al. (1989). "Risk of Cancer of the Breast after Legal Abortion during First Trimester: A Swedish Register Study." *British Medical Journal*, 299(December 9), 1430–1432.

- Marcus, Pamela M., et al. (1999). "Adolescent Reproductive Events and Subsequent Breast Cancer Risk." *American Journal of Public Health*, 89(8), 1244–1247.
- Melbye, Mads, et al. (1997). "Induced Abortion and the Risk of Breast Cancer." *New England Journal of Medicine*, 336(2), 81–85.
- NCI — National Cancer Institute. (2003, accessed 2004, February 4). *Summary Report: Early Reproductive Events and Breast Cancer Workshop* [Online]. <http://cancer.gov/cancerinfo/ere-workshop-report>
- _____. (2002, March 6, accessed May 21). *Cancer Facts: Abortion and Breast Cancer*. [Online] http://cis.nci.nih.gov/fact/3_53.htm
- Parazzini, Fabio. (1991). "Spontaneous and Induced Abortions and Risk of Breast Cancer." *International Journal of Cancer*, 48, 816–820.
- Pike, M.C., et al. (1981). "Oral Contraceptive Use and Early Abortion As Risk Factors for Breast Cancer in Young Women." *British Journal of Cancer*, 43, 72–76.
- Querido, Melissa. (1999). "State of the States: A Selection of Legislative Initiatives around the Country." *Reproductive Freedom News*, 8(3), p.3.
- Rosenberg, Lynn. (1988). "Breast Cancer in Relation to the Occurrence and Time Of Induced and Spontaneous Abortion." *American Journal of Epidemiology*, 127, 981–989.
- _____. (1994). "Induced Abortion and Breast Cancer: More Scientific Data are Needed." *Journal of the National Cancer Institute*. 86(21), 1569–1570.
- Rosenfield, Allan. (1994?). "Breast Cancer and Abortion — Comments by Allan Rosenfield, M.D., Dean, Columbia University School of Public Health." Photocopy.
- RCOG — Royal College of Obstetricians and Gynecologists. (2001, May, accessed 2002, May 21). What You Need to Know About Abortion Care. [Online]. <http://www.rcog.org.uk/print.asp?PageID=701&Type=main>
- Sanderson, Maureen, et al. (2001). "Abortion History and Breast Cancer Risk: Results from the Shanghai Breast Cancer Study." *International Journal of Cancer*, 92, 899–905.
- Sattin, R.W., et al. (1985). "Family History and the Risk of Breast Cancer." *Journal of the American Medical Association*, 253(13), 1908–1913.
- Schatzkin, A., et al. (1987). "Alcohol Consumption and Breast Cancer in the Epidemiologic Follow-Up Study of the First National Health and Nutrition Examination Survey." *New England Journal of Medicine*, 316, 1169–1174.
- Simon, Stephanie. (2002, March 24). "Abortion Foes Seize on Reports of Cancer Link in Ad Campaign." *Los Angeles Times*.
- Slobodzian, Joseph A. (1999, April 1). "Philadelphia Transit Authority, Religious Group Settle over Pulled Ads." *Philadelphia Inquirer*.
- Tang, Mei-Tzu, et al. (2000). "Induced Abortion in Relation to Breast Cancer among Parous Women: A Birth Certificate Registry Study." *Epidemiology*, 11, 177–180.
- Westhoff, Carolyn. (1997). "Abortion and Breast Cancer: Good Data at Last." *IPPF Medical Bulletin*. 31(2), 1–2.
- Willett, W.C., et al. (1987). "Moderate Alcohol Consumption and the Risk of Breast Cancer." *New England Journal of Medicine*, 316(19), 1174–1180.
- Wingo, Phyllis A., et al. (1997). "The Risk of Breast Cancer Following Spontaneous or Induced Abortion." *Cancer Causes and Control*, 8, 93–108.
- WHO — World Health Organization. (2000, June, accessed 2002, May 21). Induced Abortion Does Not Increase the Risk of Breast Cancer. [Online]. <http://www.who.int/inf-fs/en/fact240.html>
- Wynder, E.L. & D.P. Rose. (1984). "Diet and Breast Cancer". *Hospital Practice*, 19(4), 73–78, 83–88.

Lead Author — Susanne Pichler

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Media Contacts — New York: 212-261-4650 / Washington, DC: 202-973-4882
Public Policy Contact — Washington, DC: 202-973-4848