

Early Reproductive Events and Breast Cancer

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The relationship between the varying levels of hormonal exposures over the course of a woman's lifetime and her risk of developing breast cancer has been the subject of extensive research. Certain reproductive events have been demonstrated to have protective effects (such as a full-term pregnancy), or in some cases can increase the risk of developing breast cancer (for example, early age at first menstrual period). For other events, the data have been inconsistent. Specifically, the possible relationship between abortion and breast cancer has been examined in over thirty published studies since 1957. Some studies have reported statistically significant evidence of an increased risk of breast cancer in women who have had abortions, while others have merely suggested an increased risk. Other studies have found no increase in risk among women who had an interrupted pregnancy. NCI is currently supporting mechanistic and population studies to gain a better understanding of the hormonal changes that occur during pregnancy and interrupted pregnancies and how they relate to breast cancer risk.

Future Plans

Further scientific research needs to be done to determine and to investigate the relationship of breast cancer to hormone changes that occur with pregnancy. NCI is sponsoring a workshop, "Early Reproductive Events and Breast Cancer Risk," to be held in early 2003, that will address the epidemiological, biological, molecular and hormonal relationships of pregnancy that alter breast cancer risk. Specifically, this "state of the science" meeting will focus on evidence based studies that define risk factors and underlying biologic mechanisms. Thus, the scientists and clinicians participating in the workshop will seek to identify the gaps in our knowledge of reproductive risk factors, including those associated with spontaneous and induced abortion, and suggest new opportunities for interdisciplinary studies that would fill these gaps. Following the workshop, the NCI will develop an overall plan for the prioritization of funding and conduct of these studies. The workshop will also discuss ways to improve communications for imparting and receiving accurate messages about breast cancer risks associated with reproduction.

Breast Cancer Risk Factors

The risk of breast cancer increases gradually as a woman gets older. However, the risk of developing breast cancer is not the same for all women. Research has shown that the main factors associated with an increased risk of developing this disease are:

- Age (the older a woman is, the greater her chance of developing breast cancer)
- Personal history of breast cancer
- Family history of breast cancer (if her mother, sister, or daughter have a history of breast cancer, especially if they were diagnosed before age 50)
- Certain breast changes identified by biopsy
- Specific changes in certain genes such as BRCA1, BRCA2, and others
- Reproductive and menstrual history
 - First period at an early age (before 12) and menopause at a late age (after 55)

- Never had children
- Late age at birth of first child
- Long-term post-menopausal use of combined estrogen and progestin
- Life style factors, including obesity and weight gain after menopause, alcohol consumption, and physical inactivity
- Radiation therapy (women who had radiation therapy to the chest, including the breasts, before age 30)

More information about breast cancer risk factors is found in NCI's publication *What You Need To Know About Breast Cancer*¹.

Table of Links

¹ <http://cancer.gov/cancerinfo/wyntk/breast>