

Breast cancer has come into the spotlight over the last 40 years and numerous factors have been associated with breast cancer risk. BCAction understands that some risk factors are out of a woman's control, such as her biological sex or the fact that she will age. Some are within her ability to affect and thereby reduce her risk, such as her alcohol intake and birth control choices. But we also know that not everyone has options. Not everyone has access to pesticide-free produce, hormone-free dairy, or a safe and convenient means of getting exercise. So while some risk factors can be addressed on a personal level, many need to be addressed through changes in public policy, for which BCAction continues to advocate. In addition, there is often confusion and misinformation about what is and is not a risk factor. Here we untangle some of the facts from the fiction:

### Sorting Through "Risk Increaseers"

**Abortion:** Hormonal changes in a woman's body throughout her life, including during pregnancy, can lead to changes in her breasts. For this reason, a possible link between abortion and breast cancer became a subject of investigation starting in the 1950s.<sup>i</sup> Early studies were flawed and generated inconsistent evidence, but with improvement in the study designs beginning in the mid-1990s, it has been shown that there is **no association** between induced or spontaneous abortion and breast cancer.<sup>ii,iii,iv</sup>

**Alcohol:** It is common knowledge today that estrogen has the ability to promote the growth of breast cancer cells. Alcohol can affect estrogen levels in the body, which may explain some of the increased risk associated with consumption.<sup>v</sup> In general, this risk increases after about one daily drink for women and two daily drinks for men.<sup>vi</sup> The earlier long-term, heavy alcohol use begins, the greater the cancer risk.<sup>vii</sup>

**Antiperspirants:** Parabens used as preservatives, phthalates used as plasticizers and in "fragrance," and aluminum-based compounds all mimic estrogen in the body and act as hormone disruptors.<sup>viii,ix</sup> These are often ingredients in antiperspirants. Because of estrogen's relationship to breast cancer, some scientists have suggested that continued use of some antiperspirants may contribute to the development of breast cancer.<sup>x</sup>

More research is needed to specifically examine whether the use of deodorants or antiperspirants can cause the buildup of these hormone disruptors in breast tissue. Additional research is also necessary to determine whether these chemicals can either alter the DNA in some cells or cause other breast cell changes that may lead to the development of breast cancer.<sup>xi</sup> Until more is known, we suggest exercising caution by reading ingredient labels.

**Birth Control Pills,** or oral contraceptives, contain hormones, and because many breast cancers are related to hormone disruption, they have been a concern for consumers. The results of population studies to examine associations between oral contraceptive use and cancer risk have not always been consistent. Overall, however, the risk of endometrial and ovarian cancers appear to be reduced

with the use of oral contraceptives, whereas the risk of breast cancer appears to be slightly increased.<sup>xii</sup>

The estrogen content of oral contraceptives is lower today than when first introduced in the 1960s but BCAction urges caution until we know more about the long-term use of current oral contraceptives.

**Bras:** The idea that bras increase breast cancer risk is based on the theory that bras slow the flow of fluids and cause breast tissue to retain toxins. This is not in line with how breast cancer develops. More importantly, there is **no scientific evidence** of a link between bras and breast cancer.

**High-Fat Diet & Obesity:** The data is certainly confusing. On the one hand, high dietary fat intake during pre-menopausal years has been associated with an increase in breast cancer risk.<sup>xiii,xiv</sup> On the other hand, some studies suggest that premenopausal obesity reduces the risk of breast cancer, while post-menopausal obesity increases the risk.<sup>xv</sup> A large study by the Women's Health Initiative found no link between dietary fat intake and breast cancer.<sup>xvi</sup> Scientists stress the need for more conclusive evidence, but we do know that being obese\* is associated with a poorer prognosis and a higher mortality rate for women diagnosed with breast cancer.<sup>xvii</sup>

(\***Note:** Obese is defined by the National Institutes of Health as having a body mass index, or BMI, of 30 or more. Your BMI is a measurement of weight proportionate to height.)

**Hormone Therapy (HT):** As breast cancer is an estrogen-driven disease, it is not surprising that estrogen replacement therapy and hormone therapy (HT) combining estrogen with progestin have been shown to increase the risk of breast cancer.<sup>xviii</sup> A recent study on breast cancer incidence showed that trends in breast cancer risk parallel the use of menopausal hormone therapy.<sup>xix</sup> It has been recommended that research into hormonally active pharmaceutical products be extended and improved before those products are marketed<sup>xx</sup> and BCAction suggests that a thorough analysis of personal risk vs. benefit be done by a woman with her doctor before using HT.

**Radiation:** Ionizing radiation, low doses of which occur during medical diagnostic procedures such as mammograms and CT scans, is a known cause of breast and other cancers.<sup>xxi</sup> Because radiation damage accumulates in the body over the lifetime, people should avoid unnecessary x-rays, especially during pre-pubescence and adolescence, when tissue is developing and is more susceptible.<sup>xxii</sup>

### Sorting Through “Risk Reducers”

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**Breastfeeding** reduces a woman’s lifetime number of menstrual cycles, and thus her cumulative exposure to endogenous hormones, which slightly reduces breast cancer risk. Breastfeeding has direct effects on breast cells, causing them to mature so they can produce milk. Some researchers hypothesize that these differentiated cells are more resistant to becoming transformed into cancer cells than cells that have not undergone differentiation.<sup>xxiii,xxiv</sup> Preliminary findings of a Harvard Nurses’ Health Study indicated that breastfeeding is associated with a lower incidence of breast cancer for women who have a sibling, parent or grandparent with breast cancer. The findings will need to be replicated in order to rule out other factors.<sup>xxv</sup>

**Diet/Nutrition:** It is understood that good nutrition helps to lay a foundation for overall health and it may reduce the incidence of breast cancer and the risk of breast cancer progression or recurrence.<sup>xxvi</sup> There are many studies in progress to help further understand how diet and cancer are related, yet how much they directly reduce one’s risk of developing breast cancer is still unknown. Avoiding certain hormone disruptors, such as BPA, and eating fresh food when possible would be advisable.<sup>xxvii</sup> BCAction continues to advocate for greater access to hormone- and pesticide-free food for all consumers.

**Exercise:** Evidence linking exercise to a decrease in breast cancer risk is far from conclusive, but according to the NCI, exercising four or more hours a week may decrease hormone levels which may help lower breast cancer risk.<sup>xxviii</sup> Excess body fat is associated with many adverse health concerns that include various types of cancer,<sup>xxix</sup> and there’s no down side to doing what we can to maintain an optimum weight.

**A Final Note:** Where we live, work and play are significant factors in determining our involuntary exposure to toxins that increase our breast cancer risk, as well as to what extent accessibility relates to our lifestyle choices. BCAction advocates for systemic change that stops breast cancer before it starts because everyone, regardless of income, race, education, gender identification or age, is entitled to live in an environment that allows us to thrive. We don’t all have the same healthy options, but knowing about risk factors helps us make the best choices possible for ourselves.

**Prophylactic Mastectomy** is a surgery to remove one or both breasts for the purpose of reducing one’s risk of developing breast cancer. It is associated with a substantial reduction in the incidence of subsequent breast cancer, not only in women identified as being at high risk on the basis of family history, but also in known BRCA1 or BRCA2 mutation carriers.<sup>xxx</sup> Surgery is invasive and all factors related to risk reduction and this procedure should be fully considered before making a decision.

**Pills for Prevention:** Raloxifene (trade name Evista) was approved by the FDA for the treatment of osteoporosis in 1999. The trials that led to those approvals indicated that **raloxifene** might also reduce the risk of breast cancer. Studies suggested the drug had less adverse side-effects than **tamoxifen** (see below), and many obstetrician/gynecologists prescribed **raloxifene** off-label (for non-FDA approved conditions) for breast cancer “prevention.”<sup>xxxi</sup> It is important to remember that raloxifene is believed to reduce the risk of breast cancer, not prevent it. Equating “risk reduction” with “prevention” falsely encourages women to take powerful drugs that come with their own serious risks.<sup>xxxii</sup> (To read BCAction’s position on both raloxifene and tamoxifen, or “pills for prevention,” please refer to: <http://bcaction.org/policy-on-pills-for-prevention/>.)

In 1998 the FDA approved **tamoxifen** (trade name Nolvadex) for use in high-risk healthy women to lower the risk of breast cancer, though tamoxifen has significant side effects. Milder effects include hot flashes and vaginal dryness. The more severe risks include endometrial cancer, pulmonary emboli (blood clots in the lung), stroke, deep vein thrombosis, and cataracts.<sup>xxxiii</sup> After many years of study, the drug was found to significantly increase the risk of uterine sarcoma, an uncommon and aggressive form of cancer of the uterus.<sup>xxxiv</sup> Tamoxifen is officially listed as a cancer-causing agent on the list of carcinogens reported by the US Department of Health and Human Services.<sup>xxxv</sup>

The Study of Tamoxifen and Raloxifene (STAR trial) did not find a significant difference between the two drugs in reducing the risk of invasive breast cancer. Although raloxifene has been portrayed as being safer than tamoxifen, most of the differences between their side effects were not statistically significant.

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*BCAction’s mission is to achieve health justice for all women at risk of and living with breast cancer. We believe that breast cancer is a public health crisis and a social justice issue and we envision a world where lives and communities aren’t threatened by breast cancer. For more information go to [www.bcaction.org](http://www.bcaction.org).*

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