

# BREAST CANCER RISKS: FACTS & MYTHS

Updated March 2024

Breast cancer has come into the spotlight over the last 50 years and numerous factors have been associated with breast cancer risk. BCAction understands that some risk factors are out of a person's control, such as biological and socioeconomic factors. Research lists factors such as alcohol intake and birth control choices as within a person's ability to manage and thereby reduce their risk. At BCAction, we know and acknowledge that not everyone has equal access to illness and disease prevention services. A person's health depends on a complex tapestry of factors, and not everyone has equal access to adequate healthcare, food that supports a healthy diet, or convenient and safe means of getting exercise.

While some risk factors can be addressed on a personal level, many need to be addressed through structural changes in public policy, for which BCAction continues to advocate. In addition, there is often confusion and misinformation about what is and what is not a risk factor. Here, we untangle some facts from the fiction:

## **SORTING THROUGH "RISK INCREASERS"**

### **Abortion**

There is no association between induced or spontaneous abortion and breast cancer.<sup>1</sup> Hormonal changes in a person's body throughout the life, including during pregnancy, can lead to changes in their breasts. For this reason, a possible link between abortion and breast cancer became a subject of investigation starting in the 1950s.<sup>2</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.<sup>3</sup>

### **Alcohol**

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>4,5</sup> In general, this risk increases after about one daily drink for those assigned female at birth and two daily drinks for those assigned male at birth.<sup>6</sup> The earlier heavy alcohol consumption starts, the greater the cancer risk.<sup>7</sup>

### **Antiperspirants**

Parabens used as preservatives, phthalates used as plasticizers and in "fragrance," and aluminum-based compounds all have the potential to mimic estrogen in the body and act as hormone disruptors.<sup>8</sup> These are ingredients often found 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>9</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>10</sup> Until more is known, we suggest exercising caution by reading ingredient labels and consulting a doctor.

### **Birth Control Pills**

(Oral) contraceptives contain hormones that could be a concern for consumers, as many breast cancers are related to hormone disruption. 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>11,12</sup> The estrogen content of oral contraceptives is lower today than when first introduced in the 1960s. However, BCAction urges caution until more is known about the effects of 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.<sup>13</sup>

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## **SORTING THROUGH “RISK INCREASERS” (CONTINUED)**

### **High-Fat Diet & Obesity**

A 2022 meta-analysis identified a high-fat diet as a potential breast cancer risk factor. Having a higher body fat percentage is linked to an increased estrogen level in the body, increasing breast cancer risk.<sup>14</sup> Postmenopausal populations that were classified as obese and overweight on the BMI scale had a 1.2-1.4 times higher risk compared to the general population, with an added 1.2 times the risk for every five-unit increase in BMI.<sup>15</sup> Premenopausal populations that were classified as obese or overweight on the BMI scale had a 0.8 times higher risk for breast cancer compared to the general population. The relationship between high-fat diets, obesity, and breast cancer is still being researched and explored.<sup>16, 17, 18, 19</sup> Scientists stress the need for further evidence, but we do know that being obese\* is associated with a poorer prognosis and a higher mortality rate for individuals diagnosed with breast cancer.<sup>20</sup>

*\*Note: Obese is defined by the National Institutes of Health as having a body mass index, or BMI, of 30 or more. BMI is a measurement of weight proportionate to height. The use of BMI as a measure of one's health is heavily contested, and many researchers, health advocates, and anti-fatphobic activists have called attention to the flaws in the BMI system, including the measure's racially problematic origin. The averages used to determine BMI numbers were based on a sample of white European people assigned male sex at birth.<sup>21</sup>*

### **Hormone Therapy (HT)**

As breast cancer is an estrogen-driven disease, it is not surprising that estrogen replacement therapy, and hormone therapy (HT) that combines estrogen with progestin, have been shown to increase the risk of breast cancer.<sup>22</sup> A 2009 study on breast cancer incidence showed that trends in breast cancer risk parallel the use of menopausal hormone therapy.<sup>23</sup> An updated 2014 and 2019 study has further supported this finding.<sup>24, 25</sup> It has been recommended that research into hormonally active pharmaceutical products be extended and improved before those products are marketed<sup>26, 27</sup> and BCAction suggests that a thorough analysis of personal risk vs. benefit be done by an individual with their 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>28</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>29</sup>

## **SORTING THROUGH “RISK REDUCERS”**

### **Breast- and Chest-Feeding**

Nursing reduces a person's lifetime number of menstrual cycles, and thus their cumulative exposure to endogenous hormones, which slightly reduces breast cancer risk. Breast- and chest-feeding 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>30, 31, 32</sup> Preliminary findings of a Harvard Nurses' Health Study indicated that breastfeeding is associated with a lower incidence of breast cancer for breastfeeding individuals who

have a sibling, parent or grandparent with breast cancer. The findings have been further substantiated by more recent research studies.<sup>33, 34</sup>

### **Nutrition**

It is understood that good nutrition helps to lay a foundation for overall health and it may reduce the incidence of breast cancer as well as the risk of breast cancer progression or recurrence.<sup>35</sup> There are many studies in progress to help further understand how diet and cancer are related, yet to what degree good nutrition directly reduces one's risk of developing breast cancer is still unknown. Avoiding certain hormone disruptors, such as BPA and

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phthalates, and eating fresh or minimally processed food, when possible, is advisable.<sup>36</sup> When considering extreme dietary changes, a person should consult a doctor or nutritionist who can address individual needs. BCAction continues to advocate for greater access to hormone- and pesticide-free food for all people.

### **Exercise**

Evidence linking exercise to a decrease in breast cancer risk is far from conclusive, but according to the National Cancer Institute (NCI), exercising four or more hours a week may decrease hormone levels which may help lower breast cancer risk.<sup>37</sup> Excess body fat is associated with many adverse health concerns that include various types of cancer,<sup>38</sup> and there's no down side to doing what we can to maintain a healthy lifestyle.

### **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 individuals identified as being at high risk on the basis of family history or a previous diagnosis, but also in known BRCA1 or BRCA2 mutation carriers.<sup>39, 40</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 obstetricians/gynecologists prescribed raloxifene off-label (for non-FDA approved conditions) for breast cancer "prevention."<sup>41</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 individuals to take powerful drugs that come with their own serious risks.<sup>42</sup> To read BCAction's position on both raloxifene and tamoxifen, or "pills for prevention," please refer to:

[bcaction.org/pills-for-prevention/](http://bcaction.org/pills-for-prevention/)

### **Pills for Prevention (continued)**

In 1998 the FDA approved tamoxifen (trade name Nolvadex) for use in high-risk healthy individuals 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>43, 44</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>45, 46</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>47</sup>

The Study of Tamoxifen and Raloxifene (the 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.

### **A FINAL NOTE**

Where we live, work, and play significantly contributes to our involuntary exposure to toxins that increase our breast cancer risk, and determines which lifestyle choices are available to us. Breast Cancer Action advocates for systemic change that stops breast cancer before it starts, because everyone, regardless of income, race, education, gender identity, 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 can help us make the best choices possible for ourselves, and help us to advocate for the health of our communities.

Breast Cancer Action's mission is to achieve health justice for all people at risk of and living with breast cancer by focusing on systemic interventions, which includes policies, institutions, and practices, and by centering people with the furthest relationships to power.

For more information visit [www.bcaction.org](http://www.bcaction.org).

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