

**Many so-called “risk factors” are characteristics beyond our control.**

You can't change when you started your period or began menopause, or the fact that your mother has breast cancer. You can't stop yourself from getting older or change your race. Ten percent of breast cancer cases are genetic. Seventy-seven percent of breast cancer cases occur in women over age 50. White women are at a slightly higher risk, but no racial group is without risk.

**So what can you do? There is a lot of talk about what you should and should not do to control your risk. Here are the facts & myths debunked.**

**Sorting out “risk increasers”**

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**Abortion:** Despite attempts of right-winged religious groups to link induced abortions to breast cancer, there is no conclusive scientific evidence to link the two. Having an abortion has not been linked to breast cancer.<sup>i</sup>

**Alcohol:** Low to moderate consumption of alcohol increases a woman's lifetime risk of getting breast cancer to 11 out of 1000 (up to age 75).<sup>ii</sup>

**Antiperspirants:** Many antiperspirants and many other body care products contain parabens (a preservative), phthalates (often an ingredient found in “fragrance”), and other harmful chemicals, some of which may be linked to breast cancer.

**Birth control pills:** The hormonal content of oral contraceptives has changed a lot over time (the first pills were very high in estrogen), so there's currently not enough research to draw firm conclusions. Studies have indicated that there is a higher risk associated with the use of long-term oral contraceptives, however the particulars of the populations most affected and the extent of the risk are unknown.<sup>iii</sup> Long-term oral contraceptive use among young women, or use beginning near menarche, may also be associated with an increase in breast cancer risk. The risk may increase with younger starting age of oral contraceptives.<sup>iv</sup> However, further research is needed before making a recommendation. Breast Cancer Action urges caution until we know more about long-term safety.

**Bras:** The idea that bras increase breast cancer risk is based on the theory that bras slow the flow of fluids and keep toxins in the breast area. 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:** High dietary fat intake during pre-menopausal years has been associated with an increase in breast cancer risk.<sup>v vi</sup> Scientists do stress the need for more conclusive evidence. One largely ignored theory as to a connection between fatty diets and cancer is that some fatty foods contain high concentrations of pesticides.

**Hormone therapy (HT):** Breast cancer is an estrogen-driven disease, so it is not surprising that estrogen replacement therapy and HT combining estrogen with progestin has been shown to increase the risk of breast cancer.

**Obesity:** Some studies suggest that pre-menopausal obesity reduces the risk for breast cancer, while post-menopausal obesity increases risk. This may be related to an increased amount of estrogen in the body that results from post-menopausal obesity.

**Radiation:** Ionizing radiation is a known cause of breast and other cancers. Sources of radiation include x-rays and nuclear waste. People should avoid unnecessary x-rays, especially during pre-pubescence and

adolescence, when tissue is still growing and developing.

## Sorting out “risk reducers”

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**Breastfeeding:** Prolonged breastfeeding may provide a weak protective effect against breast cancer.<sup>vii</sup> One well-researched explanation is that breastfeeding reduces the amount of estrogen in the body. Another is that breastfeeding expels some of the accumulated toxins from the breast. Other studies have shown a reduced risk of pre-menopausal breast cancer in women who had been breastfed.<sup>viii</sup>

**Diet/Nutrition:** This is a highly studied and highly controversial area of research. Numerous items have been called “anti-cancer foods”, yet how much they reduce one’s risk remains unknown. There does appear to be some protection from monounsaturated fats like olive oil, and from green leafy vegetables and dark yellow/orange vegetables like carrots.

**Exercise:** Some studies support an inverse association between breast cancer and exercise, while others found no breast cancer benefit from exercise for pre-menopausal women.<sup>ix</sup> Evidence linking the two is far from conclusive, but there is substantial research on the overall benefits of physical activity.

**Prophylactic mastectomy:** Prophylactic mastectomy 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 a family history of breast cancer, but also in known BRCA1 or BRCA2 mutation carriers.<sup>x</sup>

**Raloxifene:** Raloxifene (trade name Evista) was approved by the FDA for osteoporosis prevention in 1997 and for osteoporosis treatment 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 prescribe raloxifene off-label for breast cancer prevention. 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>xi</sup>

**Tamoxifen:** In 1998 the FDA approved tamoxifen (trade name Nolvadex) for use in high-risk healthy women to lower the risk of breast cancer. 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. 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. Tamoxifen is officially listed as a cancer-causing agent on the list of carcinogens reported by the US Department of Health and Human Services. 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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<sup>i</sup> Daling, J. et al., “Risk of Breast Cancer Among Young Women: Relationship to Induced Abortion,” *Journal of the National Cancer Institute*, (1994) 86:21: 1584-592.;

Rosenberg, L., “Induced Abortion and Breast Cancer: More Scientific Data Are Needed.” *Journal of the National Cancer Institute*, (1994): 1569-570.

<sup>ii</sup> Allen, N. et al., “Moderate Alcohol Intake and Cancer Incidence in Women,” *Journal of the National Cancer Institute*, (2009) 101(5): 296-305.

<sup>iii</sup> WHO:World Trade Organization (2005). Carcinogenicity of combined hormonal contraceptives and combined menopausal treatment.

[http://www.who.int/reproductivehealth/topics/ageing/cocs\\_hrt\\_statement.pdf](http://www.who.int/reproductivehealth/topics/ageing/cocs_hrt_statement.pdf) (1/19/2011)

<sup>iv</sup> Brinton, L. et al., “Oral Contraceptives and Breast Cancer Risk Among Younger Women,” *Journal of the National Cancer Institute*, (1995) 87(11): 827-835.; Narod, S. et al. “Oral Contraceptives and the Risk of Breast Cancer in BRCA1 and BRCA2 Mutation Carriers,” *Journal of the National Cancer Institute*, (2002) 94(23): 1773-1779.; White, E., Malone, K., Weiss, N., Daling, J.. “Breast Cancer Among Young US Women in Relation to Oral Contraceptive Use,” *Journal of the National Cancer Institute*, (1994) 86(7): 505-514.

<sup>v</sup> Thiebaut, A. et al., “Dietary Fat and Postmenopausal Invasive Breast Cancer in the National Institutes of Health – AARP Diet and Health Study Cohort,” *Journal of the National Cancer Institute*, (2007) 99(6):451-462.

<sup>vi</sup> Cho, E. et al., “Pre-menopausal Fat Intake and Risk of Breast Cancer,” *Journal of the National Cancer Institute*, (2003) 95(14): 1079-1085.

<sup>vii</sup> Lipworth, L. et al., “History of Breast-Feeding in Relation to Breast Cancer Risk: a Review of the Epidemiologic Literature,” *Journal of the National Cancer Institute*, (2000) 92(4): 302-312.

<sup>viii</sup> Martin, R.M. et al., “Breast-Feeding and Cancer: The Boyd Orr Cohort and Systematic Review with Meta-analysis,” *Journal of the National Cancer Institute*, (2005) 97 (19): 1446-1457.

<sup>ix</sup> Bernstein, L. et al., “Lifetime Recreational Activity and Breast Cancer Risk Among Black Women and White Women,” *Journal of the National Cancer Institute*, (2005) 97(22): 1671-1679.

<sup>x</sup> Hartmann, L.C., et al., “Efficacy of Bilateral Prophylactic Mastectomy in BRCA1 and BRCA2 Gene Mutation Carriers,” *Journal of the National Cancer Institute*, (2001) 93(21): 1633-1637.

<sup>xi</sup> Vastag, B., “Raloxifene Prevails in STAR Trial, May Face Easier Road to Acceptance Than Previous Drugs,” *Journal of the National Cancer Institute*, (7 June 2006) 98 (11): 733-735.