

# Environment, Diet and Breast Cancer: Fact And Fiction

For those who attended my workshop at the Breast Cancer Association Awareness conference in October 2007, I promised to share information on chemicals that have been linked with breast cancer. I couldn't stop there! Below is a summary of some of the major points from our talk, as well as new information published since that time. Feel free to pass it on.

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## Fact And Fiction

**Fact:** Diet and Environment play a role in breast cancer

- Roughly 10 percent of breast cancer cases are considered genetic, leaving 90 percent of cases related to the environment

**Fiction:** Poor choices cause breast cancer

- Breast cancer frequently hits women who are "doing everything right." An example is Marin country, California, known as the breast cancer capitol of the world. In Marin country, where women are highly educated and physically active, the incidence of breast cancer is one in four women.

**Fact:** We don't have a lot of data on what environmental exposures pose a risk for breast cancer in humans.

**Fiction:** There is nothing we can do to avoid possible breast cancer causing exposures in our environment.

- We can make some assumptions from the research we have, for example, since male gas station attendants have an elevated risk of breast cancer, women should consider sitting in their cars while fueling with windows up
- We can act on animal research showing a risk of breast cancer, and in fact, that is frequently all we have to go on. If a chemical has been shown to cause breast cancer in animals, we are certainly not going to test it on six year old girls

“It Has Recently Been Shown That Research Causes Cancer  
In Rats”

- Author unknown

**Fact:** There are many myths about breast cancer circulating on the internet

**Fiction:** It is impossible to separate the truths from the myths

- The following steps are recommended based on credible studies published in reputable journals, and analyzed for statistical significance and study design

## **General Principles For Lowering Breast Cancer Risk**

**Take a walk outside.** Those who get 1000 IU’s of vitamin D daily have a lower risk of developing post-menopausal breast cancer. If you can’t get out in the sun 15 minutes a day, discuss a supplement with your health-care provider. Canada now recommends a supplement for everyone based on these studies. (In general, we strongly recommend dietary sources rather than supplements, but this can be difficult with vitamin D).

**Eat five to nine servings of fruits and vegetables daily.** Chinese women, who switch from their “vegetable-soy” Asian diet to a “meat-sweet” Western diet, increase their risk of breast cancer by 60 percent.

**Become environmentally aware.** See table, and resources below for evaluating household and personal care products.

**Add a few houseplants to your home.** Suggestions below

**Watch your waistline.** Obesity is responsible for 20 percent of cancer deaths in women. My favorite resource for those willing to take the effort, is the “Food & Feelings Workbook,” by Karen Koenig. For those who have struggled with weight, consider checking out her website and blogs at [www.eatingnormal.com](http://www.eatingnormal.com).

**Exercise at least 30 minutes per day.** It doesn’t have to be expensive. A fun study this year demonstrated a greater reduction in breast cancer with “domestic exercise,” eg. dusting and vacuuming, than with other forms of exercise. But, since women who work at home are more likely to develop cancer, choose environmentally friendly cleaning products.

**Minimize alcohol.** For women, more than “one-a-day” bumps up risk.

**Get enough sleep – in the dark.** Melatonin, manufactured by the brain in total darkness, may lower the risk of breast cancer. If you work the night shift, buy dense shades for your bedroom. Night shift work has now been classified as a human carcinogen.

**Enjoy your sex life** (in a monogamous relationship). Women with a more active sex life appear to have a lower risk of breast cancer.

**De-Stress** – or at least, “feel” less stressed. A Swedish study found women that were more stressed had double the risk of breast cancer. There was no difference based on “objective stress” The difference was in “subjective stress,” how stressed they “felt.” Remember the list of ten when you feel stressed. I start mine with: 1. We didn’t run out of toilet paper today. 2. The dog didn’t eat the kids homework today... The sillier the better – laughter is good medicine!

**Nurture your spiritual life** – While few studies have looked at this directly, both prayer and yoga have been shown to increase natural killer cells, the darling cells in our immune system that feast on cancer cells.

## **Foods That May Increase Or Decrease The Risk Of Breast Cancer**

**Acrylamide** – As of January 2008, a new study reported an increased risk of breast cancer in those with higher blood levels of acrylamide. Acrylamide is a chemical formed when starchy foods are heated. The most common sources are potato products (esp. fries and chips) and bread products. Avoid overcooked potatoes and bread products. A listing of the acrylamide content of various foods can be found at [www.oehha.ca.gov/prop65/acrylamideintakefdaappendix.pdf](http://www.oehha.ca.gov/prop65/acrylamideintakefdaappendix.pdf).

**Flax** – May be protective against breast cancer, but can interfere with chemotherapy. Consult your oncologist.

**Seaweed/kelp** – Appears to be protective against breast cancer, and considered one of the reasons for the lower incidence of breast cancer in Japan. At home we make “Swedish Miso Soup,” that adds seaweed and shiitake mushrooms to a soup palatable to most Minnesotan’s. See recipe below.

**Grapefruit** – Women who consumed a quarter of a grapefruit *daily*, were 30 percent more likely to develop breast cancer in a recent study. Grapefruit interferes with an enzyme in the liver, resulting in higher serum levels of estrogen.

**Apples** – Apples, especially the skin, have been shown to offer protection against breast cancer, although the amount in the study was equivalent to five apples per day. An apple per day (we recommend organic since apples are one of the foods with the highest pesticide residue), may keep the oncologist away. Apple cider is preferable to apple juice since it includes the skin.

**Pomegranates** – Appear to be protective against breast cancer, and are delicious purchased fresh. They can also keep kids busy for a long time – letting moms take a few healthy deep breaths.

**Green tea** – Studies have shown a protective effect against many cancers including breast cancer with the consumption of green tea. Interestingly, green tea extract is being evaluated in clinical trials for those with cancer at Mayo and MD Anderson Cancer Centers.

**Red meat** – Women who eat red meat seven days per week were shown to have an elevated risk of breast cancer. Eating spinach along with red meat may lower the risk according to one animal study. Processed meats should also be minimized.

**Cruciferous vegetables** – Appear protective against breast cancer. Studies show this effect with a fairly high consumption – eg. a head of cauliflower or broccoli a day. Look for other vegetables in the cruciferous category for variety. Examples include: cabbage, brussel sprouts, Chinese cabbage, bok choy, mustard greens, kale, collard greens, kohlrabi, turnips, rutabaga, arugula, wasabi, radishes, and horseradish.

**The soy issue:** Soy appears to lower the risk of premenopausal breast cancer slightly, but the benefit seems to be limited to those who consume soy during adolescence, when breast tissue is differentiating. On the reverse side of the equation, breast cancer cells grown in a dish, grow more rapidly when fed soy. Use soy in moderation after adolescence and avoid soy supplements.

## **Environmental Chemicals Associated With An Increased Risk Of Breast Cancer**

“We Are Living In A World Today Where Lemonade Is Made From Artificial Flavors And Furniture Polish Is Made From Real Lemons.”

- Alfred E. Newman



Over 200 chemicals, many of which are present in common household products, have been shown to cause breast cancer in animals. A report, published in a journal of the American Cancer Society in the spring of 2007, evaluated all studies to date implicating chemicals in the development of breast cancer. The team included a review board from the Silent Spring Institute, Harvard University, and the University of Southern California.

Responding to this information, the Susan G. Komen For the Cure pledged 5 million dollars to seek out environmental causes. Of these chemicals:

- 63 are found in common household products
- 10 are food additives
- 47 are pharmaceuticals
- 17 are hormones
- 10 are pesticides
- 18 are dyes
- 35 are air pollutants

The report and list of chemicals can be found at [www.silentspring.org/sciencereview](http://www.silentspring.org/sciencereview) or [www.komen.org/environment](http://www.komen.org/environment).

For those who do not read chemistry textbooks as a leisure activity, we compiled a list of some products containing the carcinogens listed, along with alternatives. Many of these are very simple. We still do not know if these studies in animals pertain to humans, but in many cases, it is the best information we have to date. Remember the precautionary principle we discussed?

Product	Chemical Carcinogens	Solutions/Alternatives
Chlorinated Water	Chlorine, others	Purchase a water filter
Auto Exhaust	PAH's, benzene, others	Sit in your car when fueling with windows up
Dry cleaning solvents	Perchloroethylene (perc)	Clean clothes at home, or choose a wet-cleaner or liquid CO2 cleaner
Flame retardants	Polybrominated diphenyl ethers (PBDE's)	Avoid products treated with PBDE
Overheated cooking oil	1,3-butadiene	Do not overheat or reuse oil. Avoid fried foods when eating out
Wood stain	Methylene chloride	Use a fume mask
Furniture polish	Several chemicals	Use olive oil, or a natural product
Shampoo, Detergents, Soaps	1,4-dioxane	Choose natural products

Product	Chemical Carcinogens	Solutions/Alternative
Pesticides	Several	Avoid home and garden pesticides.
Air fresheners, cleaning products, shampoo	Formaldehyde	Open windows, choose natural products
Starchy foods	Acrylamide	Limit intake of french fries, potato chips
Nonstick cookware Popcorn bags	Perfluoroctanoic acid (PFOA)	Use stainless steel, glass, or ceramic pans. Make popcorn "from scratch"
Nail polish	Dibutyl phthalate, benzyl violet (violet 2, 6B)	Go "natural", especially if pregnant
Cat litter	Crystalline silica	Choose litter without crystalline silica
Cosmetics	Phthalates, parabens	Look for phthalate free natural products

## Top Foods To Purchase Organic

(80 percent of pesticide residue can be eliminated by choosing these organic)

### Vegetables:

Bell peppers  
Celery  
Potatoes  
Lettuce  
Spinach  
Green beans  
Winter squash

### Fruits:

Apples  
Cherries  
Grapes  
Nectarines  
Peaches  
Pears  
Red raspberries and Strawberries

Beef (all)

Chicken (all)

Dairy – milk products should have “cows not treated with BST on the label”

Baby food (all)

Consumer reports has an interactive website where you can determine if foods should always be purchased organically grown, purchased organic if budget is not an issue, or not necessary to purchase organic at [www.consumerreport.org/cro/food/organic-products-206/when-buying-organic-pays-and-doesn't.htm](http://www.consumerreport.org/cro/food/organic-products-206/when-buying-organic-pays-and-doesn't.htm).

# Top 11 Houseplants For Absorbing Indoor Air Carcinogens

(As determined by researchers at NASA)

1. Ferns (esp. Boston fern)
2. Palms (esp. parlor palm, dwarf date palm, bamboo palm, lady palm)
3. Rubber plant
4. Spider plant
5. English ivy
6. Janet Craig (Dracaena)
7. Chrysanthemum
8. Philodendron
9. Peace lily
10. Gerbera daisy
11. Weeping fig (ficus)

(caution – some plants are poisonous to children and pets)

Comment: As we discussed, the Environmental Protection Agency has ranked indoor air 4<sup>th</sup> in environmental causes of cancer. Many sources of carcinogens we can eliminate (see sites below or our book, “Avoiding Cancer One Day At A Time,” but for those we can’t eliminate, a few houseplants can help clean the air. According to research conducted at NASA, the “magic number,” is 15 plants in 6-inch containers, per 2000 square feet of living space.

## Swedish Miso Soup

- 4 cups chicken broth
- 3 pieces dried wakame (kelp)
- 1 green onion, sliced
- 3 shiitake mushrooms, finely sliced and gently sautéed

Prepare (soak) wakame as per package directions. Slice green onions and mushrooms. Gently sauté mushrooms in 1 tsp olive oil. Heat chicken broth to boiling, remove from heat. Add wakame, onion, and shiitake. Serve warm.

## Healthy Websites

### For evaluating carcinogens in your home

Household products database: [www.householdproducts.nlm.nih.gov/products.htm](http://www.householdproducts.nlm.nih.gov/products.htm)

Personal care products: Skin Deep Database [www.safecosmetics.org](http://www.safecosmetics.org) Thousands of personal care products are listed

Other products: [www.thegreenguide.com](http://www.thegreenguide.com)

### Nutrition

Recipes designed for weight control and cancer prevention [www.aicr.org](http://www.aicr.org)

Nutrition database, including fast food information

[www.nutritiondata.com](http://www.nutritiondata.com)

### **Radon information**

Radon is not associated with breast cancer, but is the leading cause of lung cancer in non-smokers.

[www.epa.gov/radon/](http://www.epa.gov/radon/)  
1-800-SOS-RADON

Comment: Remember that one in three homes in Minnesota have elevated radon levels. This translates into one in a hundred Minnesotans developing lung cancer from exposure to radon. Radon occurs in homes old and new and levels can vary dramatically, even in the same neighborhood. Pick up a test kit (less than \$20) at your neighborhood hardware store. The kits should be set out at the lowest level in your home and left out for two days. If levels are abnormal, the Minnesota Department of Health can assist you in eliminating the problem.

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