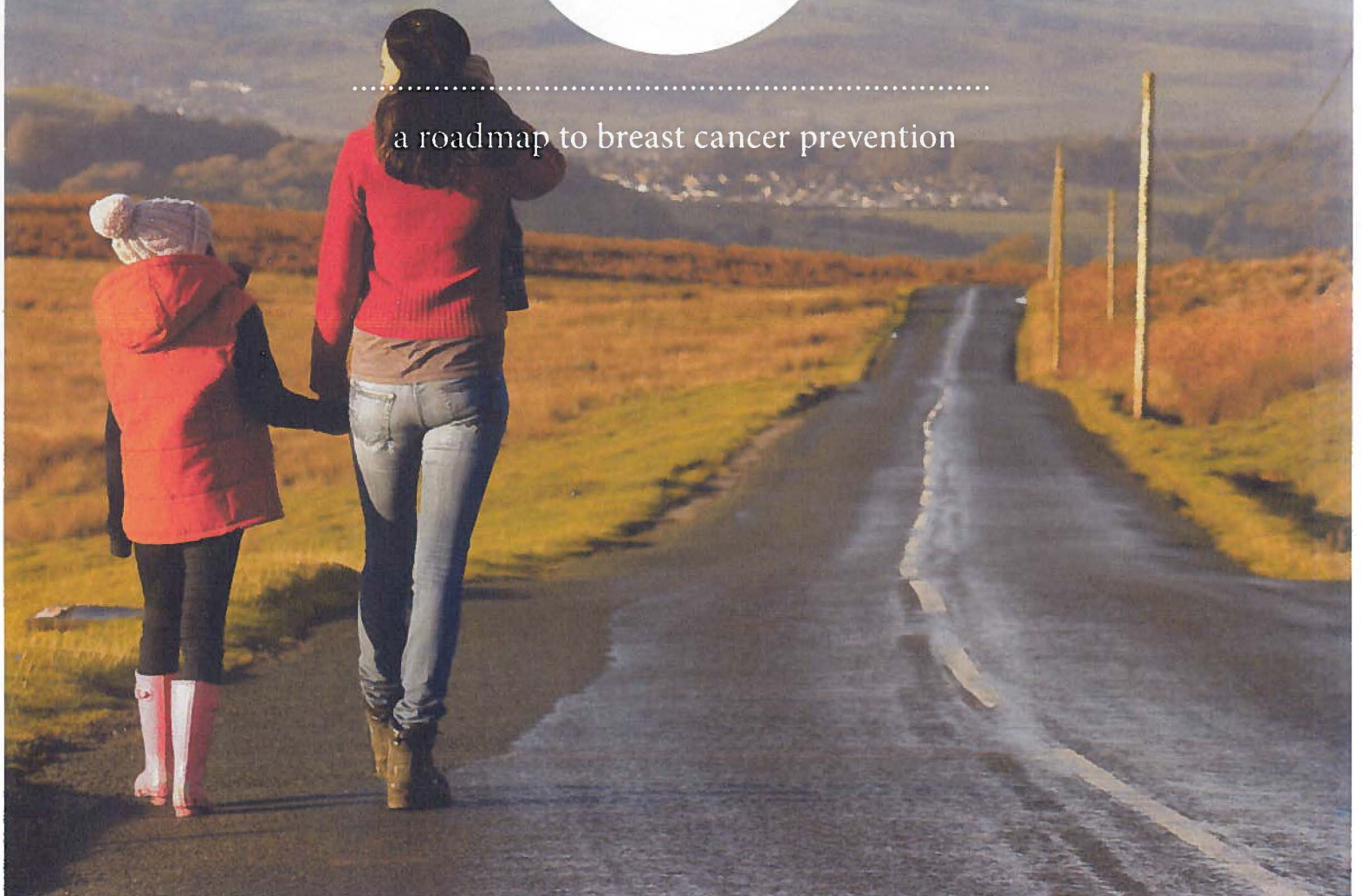


breast cancer fund

# PREVENTION STARTS

HERE

a roadmap to breast cancer prevention





# PREVENTING BREAST CANCER

A mother, a friend, a neighbor. We all know someone who has had breast cancer. And although detection and treatment methods have improved, our odds have not: Today 1 in 8 women in the United States will be diagnosed with the disease in her lifetime.

While there is great public awareness of breast cancer—with pink ribbons emblazoning everything from makeup bottles to soup cans—until now, the emphasis has been on screening, treatment and searches for a cure. The Breast Cancer Fund is working to shift public focus to *prevention*—to changing the odds so that far fewer people will ever have to hear the words “you have breast cancer.”

We’re working to prevent breast cancer by eliminating our exposure to toxic chemicals and radiation linked to the disease. We know that most people diagnosed with breast cancer have no family history of the disease, and that exposures to toxic chemicals in our air, water and everyday products play an important role in increasing risk. Reduce these exposures and we reduce risk—that’s the Breast Cancer Fund’s goal.



In your hands is a roadmap to prevention that will help you:

- Learn about the scientific evidence linking breast cancer and exposures to toxic chemicals and radiation.
- Explore why early-life and low-dose exposures are of particular concern, why it is important to look at how chemical mixtures and lifestyle affect risk, and why some populations are more vulnerable.
- Get practical tips on what you can do to reduce your risk.
- Find out how you can take action to convince policy makers and companies to prioritize prevention.

At [breastcancerfund.org](http://breastcancerfund.org) you’ll find a deeper and broader exploration of what’s covered here, including:

- In the **Clear Science** section, find out which chemicals are linked to breast cancer and where they are found.
- In the **Reduce Your Risk** section, learn how you can take steps to protect yourself and your family.
- In the **Big-Picture Solutions** section, take action for prevention and find ways to join our community.

## THE STATE OF THE EVIDENCE

In our daily lives we are exposed to toxic chemicals and radiation from a wide range of sources, including cleaning and personal care products, plastics, food, air, water, medical treatments, our workplaces and our neighborhoods. A large and growing body of scientific evidence tells us that some of these exposures can increase breast cancer risk.

Exposures to breast carcinogens—chemicals that directly cause breast cancer—are an obvious concern. For example, the chemical benzene is a carcinogen found in gasoline fumes, automobile exhaust, cigarette smoke and industrial burning. Exposure to benzene presents a serious occupational hazard for workers in chemical, rubber, shoe-manufacturing, and oil- and gasoline-refining industries.



Other carcinogens are used in household cleaning products, plastics and personal care products.

Of particular concern are exposures to chemicals that disrupt the body's hormones—chemicals known as endocrine-disrupting compounds. Bisphenol A, or BPA, is an endocrine disruptor used in some plastics, the lining of food cans and sales receipts. Another example is a class of chemicals called phthalates, which are used to soften plastic and can be found in synthetic fragrances. Other endocrine disruptors include hormone therapies like HRT and some pesticides, including atrazine, which is widely used on corn in the United States, but has been banned in the European Union.

Ionizing radiation is also linked to breast cancer, and exposure from medical imaging such as X-rays and CT scans has increased by about 600 percent since 1980. There is considerable evidence that CT scans in particular are an important and controllable cause of breast cancer. Not only are these tests particularly

## HEALTH

“Breasts carry the burden of the mistakes we have made in our stewardship of the planet. They are bellweathers for the changing health of people. By working to prevent breast cancer, the Breast Cancer Fund is taking on one of the biggest, most important challenges of our day.”

Florence Williams

Award-winning author of  
*Breasts: A Natural and Unnatural History*



## SCIENCE

“Breast cancer is a preventable disease, and the Breast Cancer Fund has been at the forefront of prevention efforts by translating the science, educating the public and pushing policymakers in the right direction.”

Sarah Janssen, M.D., Ph.D., M.P.H.

Assistant Clinical Professor,  
Division of Occupational and  
Environmental Medicine,  
UCSF School of Medicine

potent (one CT scan has the equivalent exposure of about 100 chest X-rays), but they are also becoming more common each year.

### Individual Habits and Genetic History Matter

When assessing risk from chemical exposures, we also need to consider other factors, including a person's age, genetic history, diet, level of physical activity, alcohol use and smoking habits, as well as her early-life environment, as these factors may alter risk. For instance, women who have the primary “breast cancer genes” may be more sensitive to radiation exposure. Yet these women tend to be screened for breast cancer more often and at earlier ages, raising concerns about their sustained exposures via radiation-based screening methods.

### Prenatal Exposures Matter

Prenatal exposures to chemicals—particularly to endocrine disruptors—can have profound effects on subsequent breast cancer risk. During fetal development, hormones orchestrate the building of the reproductive and endocrine systems, including the structures of breast tissue and other important factors in breast development. So while it is good to limit exposure to endocrine disruptors at every stage of life, it is even more important during pregnancy.

### Puberty Matters

The average age of U.S. girls' first periods has decreased in recent decades, most notably for black and Mexican American girls, and the age of onset for breast development has dropped even more dramatically. Earlier menstruation is an established risk factor for later-life breast cancer, which may be



compounded by the now longer window between the beginning of breast development and a girl's first period. During this extended puberty, a girl's developing breasts may be more vulnerable to toxic chemical exposures, particularly those that disrupt hormones. Limiting exposure to these chemicals during puberty is important.

### Low-Dose Exposures Matter

For many years it was believed that the risk from harmful chemicals was directly proportional to the amount of exposure—that the dose made the poison. But scientific evidence now shows that some chemicals, especially endocrine disruptors, can exert negative effects at extremely low exposure levels—sometimes with more serious or different effects than at higher doses. It is essential that low-dose exposure be taken into account when testing chemicals for health effects and when regulating chemical exposures.

### Chemical Mixtures Matter

We are exposed to a bewildering variety of chemicals every day. And while we lack adequate information about the health effects of exposures to individual chemicals, we know even less about how chemicals act together to increase risk for diseases, including breast cancer. Evaluating the total exposure to single chemicals and the mix of chemicals people are exposed to every day would provide a missing piece of the puzzle in understanding environmental links to breast cancer.

### Race and Class Matter

By looking at prevention and the causes of breast cancer, we can tell an even bigger story about some of the other challenges we face as a society regarding race, gender and social inequality.

While white women have the highest overall breast cancer rates, a greater proportion of African American women are diagnosed with breast cancer before age 45, and they are more likely to die from the disease than any other racial or ethnic group. Biomonitoring shows that African Americans have higher levels of many chemicals in their bodies than other groups, including PCBs, mercury, lead, PAHs, dioxin and phthalates. African Americans, as well as people with less formal education and people with lower socioeconomic status, are more likely to live



within a mile of a polluting facility, such as a chemical plant. In addition, women living in low-income communities tend to live closer to more diffuse pollution sources, such as freeways, and they have less access to parks and fresh foods.

In working to prevent breast cancer, we must address disparities based on race, ethnicity and income so that all of us are protected.

### Occupation Matters

For many decades, occupational studies did not include women. Without the basic scientific knowledge these studies could provide, it was difficult to draw links between breast cancer and occupational exposures. But recent and increasing data suggests that women in two broad occupational categories face elevated risk: 1) women who work with toxic chemicals and radiation, including radiology technicians; dental hygienists; and canning, automotive plastics and agriculture workers; and 2) teachers, librarians and social workers—for whom the occupational link to breast cancer is unclear. Also, exposure to artificial light at night, associated with shift work, is an occupational hazard that has been linked to increased breast cancer risk.



# FROM SCIENCE TO ACTION

What do we do with all of this scientific evidence? Turn it into action to prevent breast cancer. There are things you can do to protect yourself, your family and your community. And you can join a national movement taking action to prevent breast cancer.

That's why the Breast Cancer Fund is working on big-picture solutions involving both legislative and market-based change. Working together, we can protect our health and prevent breast cancer.

## **Advocate for a national breast cancer prevention plan**

For more than a decade the Breast Cancer Fund has been working to prevent breast cancer by reducing our exposure to chemicals and radiation linked to the disease. Validating our work, a 2013 federal advisory committee report co-authored by Breast Cancer Fund President and CEO Jeanne Rizzo concludes that prevention is the key to reducing the burden of breast cancer. Building on our solid foundation, we are working to turn the report's conclusion into a national breast cancer prevention strategy that doubles our country's investment in prevention.

## **Ensure food and food packaging are safe**

The Breast Cancer Fund is challenging the food and agriculture sectors to move away from using toxic chemicals in growing, producing and packaging food. Specifically, we're working to eliminate BPA, a hormonally active chemical linked to breast cancer, from food and beverage containers. Our



groundbreaking study found that removing canned and packaged food from one's diet reduces BPA levels by 60 percent, inspiring us to launch Cans Not Cancer, a campaign that's challenging the \$80-billion canned food industry to move away from BPA and toward safer alternatives.

## **Make sure cosmetics and personal care products are safe**

Our Campaign for Safe Cosmetics is working to eliminate dangerous chemicals from the products we use on our and our children's bodies. We're advocating for the passage of the Safe Cosmetics and Personal Care Products Act, which will give the FDA authority and resources to ensure that these products are free of toxic chemicals. We're also urging the cosmetics industry to make voluntary changes, and we celebrated a milestone in 2012 when Johnson & Johnson agreed to remove carcinogens and other toxic chemicals from all of its personal care brands worldwide. We expect other cosmetics giants to follow suit in the coming years, responding to the increasing consumer demand we've helped create for safer products.

## **Demand our right to know what's in our products**

Why would a company keep secrets from you about ingredients that are safe? The Breast Cancer Fund is working to ensure that companies are obliged to disclose all ingredients in personal care and cleaning products, including components of fragrance, as well as what chemicals are being used to replace BPA in plastics and food cans. We have a right to know what's in the products we use every day.

## **Protect families from toxic chemicals**

You wouldn't ride in a car or an airplane that you knew hadn't been tested for safety. Yet because the law that regulates industrial chemicals, the Toxic Substances Control Act, is broken, tens of thousands of potentially dangerous and untested chemicals are allowed in commerce. That's why the Breast Cancer Fund is working to pass legislation that will address TSCA's critical failures by giving the EPA authority to effectively regulate industrial chemicals.





**JOIN US**

Our movement is growing every day, uniting people of diverse backgrounds and beliefs. Together, we are creating a nationwide breast cancer prevention strategy that will protect our children and future generations from this devastating disease.

Visit **breastcancerfund.org** to read more about which chemicals are linked to breast cancer and where they are found, what you can do to reduce your exposure to toxic chemicals and radiation, and how you can join us to transform the science into action that will prevent breast cancer.

**Sign up** to receive email news and action alerts  
[breastcancerfund.org/signup](http://breastcancerfund.org/signup)

**Donate**  
[breastcancerfund.org/donate](http://breastcancerfund.org/donate)

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[facebook.com/breastcancerfund](https://facebook.com/breastcancerfund)

**Follow us on Twitter**  
[twitter.com/breastcancerfund](https://twitter.com/breastcancerfund)

## FUTURE

“As a young survivor, I am so glad that the Breast Cancer Fund is daring to ask and find answers to the question of why so many women are getting breast cancer. Imagine what this work will mean for future generations!”

Marika Holmgren

Event producer and  
Breast Cancer Fund Strong Voice

## TIPS

# REDUCE YOUR RISK

Breast cancer prevention starts in your everyday environments. Here's how:

- 1 **Avoid synthetic fragrance** Choose personal care and household cleaning products that fully disclose all ingredients, including what's in "fragrance"—that single word on a label can contain dozens of chemicals, some of which, like phthalates, should be avoided.
- 2 **Choose cleaning products that tell you what's in them** Companies are not required to label the ingredients on cleaning products, so look for products made by companies that voluntarily disclose ingredients.
- 3 **Go fresh, organic and hormone-free** When possible, choose organic foods and hormone-free meat and dairy. Buying products grown organically reduces pesticide use, which is good for families, farmworkers and the environment.
- 4 **Kick the can** Limit consumption of canned foods until companies replace BPA-based can linings with safer alternatives. Instead, choose fresh or frozen options. This is especially important for women who are pregnant or nursing, given concerns about prenatal and early-life BPA exposure.
- 5 **Limit the use of plastic** Go old-school with metal and glass, and never microwave in plastic.
- 6 **Track medical radiation exposure** If you need a medical imaging procedure, ask your doctor if non-radiation-based methods (for example, MRI or ultrasound) might be as effective as X-rays or CT scans.
- 7 **Limit the use of hormone therapies** If you can, skip them, but if symptoms require hormone therapy, talk to your doctor about the best dose and shortest length of treatment.