

The Prevention of Breast Cancer

A growing problem

Over 55,000 women in the UK were diagnosed with invasive breast cancer in 2014¹ and around **1 in 5 were under the age of 50**.² Action is needed to halt the rising incidence of the disease: the lifetime risk of a woman developing breast cancer is now **1 in 8** – up from 1 in 12 in 1996.³

What are the causes?

Rising incidence rates are partly a result of an ageing population. However, this doesn't account for the rises in **age standardised** rates of breast cancer – **a rise of 24%** in women between 1993-1995 and 2012-2014.⁴ This is due to other factors, such as tobacco and alcohol use, increasing obesity, and occupational and environmental exposure to cancer-causing chemicals.

To effectively tackle rising rates of breast cancer, we must **address all its causes**. There is increasing awareness of the role of alcohol and obesity, but there is less awareness of the role of chemical exposures, and it is difficult for individuals to avoid chemicals linked to breast cancer.

The role of chemical exposures

Chemicals linked to breast cancer can be found in polluted air and water, food packaging and consumer products.

Exposure to **carcinogens**, such as benzene, in polluted air can cause breast cancer. **Endocrine disrupting chemicals** (EDCs) disrupt the functioning of the hormone (endocrine) system. There is evidence that exposure to EDCs, such as bisphenols in food packaging, during critical moments of development, for example in the womb and during early infancy, may increase breast cancer risk over a lifetime.^{5 6 7 8 9}

It is difficult to estimate the percentage of breast cancer cases linked to environmental chemical exposures and research in this area is ongoing. In the United States, a report by the President's Cancer Panel stated that **"...the true burden of environmentally induced cancers has been grossly underestimated."**¹⁰

Lessons of the past

Chemicals that were once widely used are now recognised as damaging to human health. Unfortunately, once a chemical is in circulation it can be extraordinarily difficult and expensive to remove it from our environment.

For example, polychlorinated bisphenols (PCBs) were the first commercial flame retardants. They are now considered to be toxic, carcinogenic, bioaccumulative and EDCs, and were banned for most uses in the UK in 1981, and completely in 2000. Despite this, high levels of PCBs are routinely detected in humans, wild-life, soil, food and water in the UK and elsewhere.¹¹ The full extent of the damage wrought by our use of PCBs will not be known for many years.

Today, new chemical pollutants continue to contaminate our environment. We must learn from our past mistakes and use precautionary regulations to restrict the use of chemicals *before* they damage human health.

What can we do?

We can choose how much alcohol we drink and how much exercise we do, but as individuals we have far less control over the quality of our air, the chemicals used in food packaging, or the safety of ingredients in products we buy. We need precautionary regulations, public education, and funding for research to ensure that consumer products and our environment are kept safe.

Breast Cancer UK's eight manifesto commitments

Breast Cancer UK is dedicated to achieving the primary prevention of breast cancer by addressing all risk factors, including exposure to carcinogens in our environment and consumer products.

Commit to identifying and addressing the causes of cancer

- Develop an **Action Plan** for the prevention of cancer setting out new goals for education, research funding and policy interventions that help to prevent cancer developing.
- Acknowledge in **national cancer strategies** that exposures to environmental chemicals are preventable risk factors.
- Increase **research funding** into the role of environmental pollutants in breast cancer risk.
- Publish a **comprehensive guide for pregnant women** which explains the potential risk of in utero environmental exposures and their possible effects on the unborn child.

Commit to maintaining consumer and environmental protections following BREXIT

- Apply the **precautionary principle** to health, environmental and chemicals policy.
- Adhere to the EU's system of **chemicals regulation (REACH)** after Brexit, to ensure the continued protection of public health and the environment.
- Make the safeguarding of public health and consumer and environmental regulation a **priority** in future **trade deals**.
- Guarantee that any changes to EU derived chemicals legislation and regulation be subject to full parliamentary **scrutiny and debate**.

For further information please visit www.breastcanceruk.org.uk or contact Jack Brown, Policy and Campaigns Officer Breast Cancer UK at jack.brown@breastcanceruk.org.uk or 0845 680 1322.

¹ Cancer Research UK, <http://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/breast-cancer> (Accessed 31 May 2017)

² Cancer Research UK, Breast Cancer (C50): 2012-2014, http://www.cancerresearchuk.org/sites/default/files/cstream-node/cases_crude_f_breast_114.pdf (Accessed 31/05/2017)

³ Cancer Research UK, <http://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/breast-cancer/incidence-invasive#heading-Two> (Accessed 31/05/2017)

⁴ Cancer Research UK. *Breast Cancer (C50): 1993-2014*. http://www.cancerresearchuk.org/sites/default/files/cstream-node/inc_asr_uk_breast_114.pdf (accessed 23/05/2017)

⁵ Report of the Interagency Breast Cancer and Environmental Research Coordinating Committee (IBCERCC) (2013). 'Breast Cancer and the Environment Prioritising Prevention Prioritising Breast Cancer'. http://www.niehs.nih.gov/about/assets/docs/ibcercc_full_508.pdf.

⁶ Barouki, R, et al. (2012). Developmental origins of non-communicable disease: Implications for research and public health. http://www.toxicology.org/AI/MEET/cct_pptoxiii/pptoxiii_consensus_paper.pdf

⁷ Knower, KC, et al., (2014). Endocrine disruption of the epigenome: a breast cancer link *Endocrine Related Cancer* 21(2): T33-55. <http://www.ncbi.nlm.nih.gov/pubmed/24532474>

⁸ Darbre, PD and Charles, AK (2010). Environmental Oestrogens and Breast Cancer: Evidence for Combined Involvement of Dietary, Household and Cosmetic Xenoestrogens. *Anticancer Research* 30: 815-828. <http://www.ncbi.nlm.nih.gov/pubmed/20393002>

⁹ Soto, A.M. et al. (2013). Does cancer start in the womb? Altered mammary gland development and predisposition to breast cancer due to in utero exposure to endocrine disruptors. *Journal of Mammary Gland Biology Neoplasia* 18(2): 199-208. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3933259/>

¹⁰ President's Cancer Panel, 2008-2009 Annual Report, *Reducing Environmental Cancer Risk: What We Can Do Now*. National Cancer Institute. https://deainfo.nci.nih.gov/advisory/pcp/annualreports/pcp08-09rpt/pcp_report_08-09_508.pdf

¹¹ IARC (2016). IARC monograph 107. Polychlorinated and polybrominated biphenyls. <http://monographs.iarc.fr/ENG/Monographs/vol107/mono107.pdf>