

Why are more and more of us getting breast cancers?

24%

The risk of getting breast cancer by age 50 for women carrying a *BRCA* mutation born **before** 1940¹

67%

The risk of getting breast cancer by age 50 for women carrying a *BRCA* mutation born **after** 1940¹

"The speed with which the increase in disease incidence have occurred in recent decades rules out genetic factors as the sole plausible explanation"

State of the Science of Endocrine Disrupting Chemicals

You do the maths

Why are more and more of us getting breast cancers?

There is growing global concern that exposure to harmful chemicals could be contributing to an increased risk of many diseases including cancers. In 2012, WHO/UNEP² published an assessment of the state of the science of endocrine disruptors. It noted three key areas of concern:

- many endocrine related diseases and disorders, including cancers, such as breast cancer, were on the increase;
- endocrine-related effects had been observed in wildlife populations; and,
- the identification of chemicals with endocrine disrupting properties had been increasingly linked to disease.

If we are to stop breast cancer before it starts, a strategy must be put in place which tackles all of the possible causes, including exposure to hazardous chemicals.

¹King et al. (2003). Breast and ovarian cancer risks due to inherited mutations in BRCA1 and BRCA2. Science 302(5645): 643-646

²WHO/UNEP (2012). State of the science of endocrine disrupting chemicals.

Breast Cancer UK is dedicated to the prevention of breast cancers by reducing public exposure to carcinogenic, hazardous and hormone disrupting chemicals which are routinely found in our environment and every day products.

Breast Cancer UK believes better environmental and public health policies are needed to encourage a preventative approach to diseases like breast cancer.

To find out more visit our website

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Are we investing enough to find out what causes breast cancers?

75%

The percentage of breast cancer cases thought to be attributable to environmental and lifestyle causes¹

1%

The percentage of research funding spent on environmental and lifestyle causes of breast cancer²

"There are now indications that increased breast cancer risk is associated with the body burden of all oestrogenic chemicals"

European Environment Agency 2012

You do the maths

Are we investing enough to find out what causes breast cancers?

We only know what causes around half of all breast cancers. It is estimated that 20-30%¹ of cases are due to genetic mutations. Of these, 2-3% are associated with *BRCA* mutations. The remaining 75% are thought to be attributable to environmental and lifestyle factors, including alcohol (6%), post menopausal hormones (3%), radiation (1%), being overweight (9%) occupational risk (5%) and lack of exercise (3%). This means that **at least 45%** have unknown causes³.

Despite this, in 2014, just 1% of UK research funding went towards breast cancer research to identify the environmental and lifestyle causes of breast cancers. In 2003 this figure was 6%².

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¹Economopoulou et al. (2015). Beyond BRCA: New hereditary breast cancer susceptibility genes. *Cancer Treatment Reviews* 41: 1-8

²Source: NCRI Breast Cancer Spend 2002-2014

³Parkin et al. (2011). 'The Fraction of cancer attributable to lifestyle and environmental factors in the UK in 2010' *British Journal of Cancer* (2011) 105, S77-S81

Could we do more to help prevent cancers?

50%

The **lifetime risk** of getting cancer for those of us born since 1960

3.5%

The percentage of cancer research funding spent on **prevention in 2014**

“Prevention has the potential to save more lives from cancer than treatment—as is already true for tobacco and lung cancer—which underlines the importance of strongly supporting this research area”

National Cancer Institute of Health and Human Sciences

You do the maths

Could we do more to help prevent cancers?

Incidence rates for all cancers in Great Britain increased by 23% in men and by 43% in women during the period 1975-77 to 2009-11¹. It is predicted that 1 in 2 people in the UK will get cancer at some point in their lives². Whilst we must prepare for the consequences of this upward trend, could we also do more to prevent it?

Only 3.5% of cancer research funding was spent on interventions to help prevent cancers in 2014³. Breast Cancer UK is calling for a commitment to increase this figure over the next 5 years to 5% and for research funding into the 'Exogenous Causes of Cancers to be increased from 1.3% to 4.3% (the same level of funding as in 2002).

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¹Cancer Research UK cancer incidence for all cancers combined <http://www.cancerresearchuk.org/health-professional/cancer-statistics/incidence/all-cancers-combined> (last accessed 13.11.15)

²Ahmad et al. (2015). Trends in the lifetime risk of developing cancer in Great Britain: comparison of risk for those born from 1930 to 1960. *British Journal of Cancer*. 112(5): 943-947

³NCRI Cancer Research database Latest data (2014) <http://www.ncri.org.uk/what-we-do/research-database/> (last accessed 13.11.15)

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Could the burden on the NHS be reduced?

£51m

The **estimated annual cost savings** if the incidence rate for breast cancer was reduced by 10%¹

£36m

The **estimated annual cost** of providing the life extending breast cancer drug Kadcyra through the Cancer Drugs Fund²

"We cannot treat our way out of the cancer problem—we must focus on prevention"
Dr Chris Wilde, International Agency for Research on Cancer (IARC)

You do the maths

Could the burden on the NHS be reduced?

The costs to the UK of breast cancer alone, is an estimated £1.5 billion each year with the average 15-month health-care costs estimated to be £12,595 per-patient¹. The NHS will not be able to cope with the rising number of cancer patients. If we reduce annual breast cancer rates by just 10%, potential savings of around £51 million could be achieved.

Meanwhile, the Cancer Drugs Fund is facing a £70³ million overspend. The life extending breast cancer drug, Kadcyła, has just been saved from being delisted but the question of whether patients will be able to access life saving drugs in the future remains in the balance³.

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¹Hall et al. (2015). Costs of cancer care for use in economic evaluation: a UK analysis of patient-level routine health system data. *British Journal of Cancer*. 112(5): 948-56.

²Kadcyla was reported by NICE to cost £90k pppy, <https://www.nice.org.uk/news/article/pressure-grows-on-roche-to-lower-breast-cancer-drug-price>. Although the new cost is not known it is reported to have been brought down to around £50k pppy. http://www.pmlive.com/pharma_news/price_cut_keeps_kadcyla_on_cdf_858809 (last accessed 16/11/15)

³<https://www.england.nhs.uk/2015/09/04/update-on-the-current-cancer-drugs-fund-list/> (last accessed 16/11/15)

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What is Breast Cancer UK calling for?

- ✓ A cancer strategy that **reduces cancer incidence** as well as mortality
- ✓ A cancer strategy based on a comprehensive **understanding of all of the causes of cancer**
- ✓ A cancer strategy that goes above and **beyond lifestyle and genetics**
- ✓ A cancer strategy that acknowledges the **role of harmful chemicals** in breast cancer
- ✓ A cancer strategy that **prioritises early intervention for prevention**

You do the maths

What is Breast Cancer UK calling for?

Breast Cancer UK believes far more can be done to prevent breast cancer. We are calling for:

- An independent task force to review national research efforts and develop a comprehensive national strategy on environmental and genetic factors related to cancer;
- A commitment to develop and implement a primary cancer prevention strategy which commits to the improvement of our understanding of all of the causes of cancer and acknowledges the links between certain cancers and environmental pollutants;
- A commitment to an increase in cancer research funding over the next 5 years; and,
- A recommendation that NHS advice services publish advice for pregnant women on reducing *in utero* exposures to hazardous chemicals, including endocrine disrupting chemicals.

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