

# Prevention is better than cure

5 PLEDGES FOR 2015 AND BEYOND TOWARDS THE PREVENTION OF BREAST CANCER



One in eight women in the UK will be diagnosed with breast cancer at some point in their lives.

PRIORITISE THE PRIMARY PREVENTION OF BREAST CANCER



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PROTECT THE UNBORN CHILD FROM THE HARMFUL EFFECTS OF CHEMICAL EXPOSURE



3

IMPROVE REGULATION OF CHEMICALS, BASED ON THE PRECAUTIONARY PRINCIPLE



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BAN THE USE OF BISPHENOL A IN FOOD AND DRINKS PACKAGING



4

IMPROVE LABELLING AND IMPLEMENT THE 'RIGHT TO KNOW' ABOUT HARMFUL CHEMICALS



Breast Cancer UK is dedicated to preventing breast cancer by inspiring the changes necessary to reduce our routine exposure to the carcinogenic and hazardous chemicals in our environment and everyday products.



Our vision is a world in which the environmental and chemical causes of breast cancer have been eliminated so that fewer women and men have to suffer the trauma of diagnosis and treatment, illness and potential death from the disease.

Breast Cancer UK:

- Campaigns for improvements in legislation and public health policy in order to reduce public exposure to chemicals associated with breast cancers;
- Informs members of the public about the links between breast cancers and environmental exposure to hazardous, carcinogenic and endocrine disrupting chemicals and provides solutions and advice to help people reduce their risk;
- Supports scientific research into the links between breast cancers and exposure to hazardous, carcinogenic and endocrine disrupting chemicals.

This manifesto is supported by the following organisations in the UK and Europe:

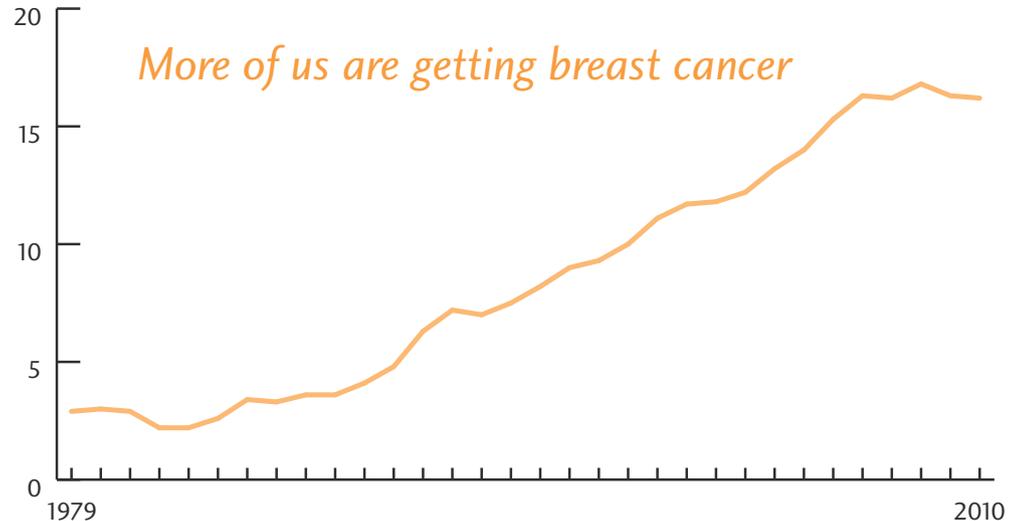


If your organisation would like to sign up in support of our manifesto goals, please email [campaigns@breastcanceruk.org.uk](mailto:campaigns@breastcanceruk.org.uk).



## INTRODUCTION

More and more people are getting breast cancer. In the UK, nearly 50,000<sup>1</sup> people are diagnosed every year and, for women, the lifetime risk of developing breast cancer has risen from one in nine to one in eight in just under a decade<sup>2</sup>. More and more young women are getting the disease, with one in five cases now diagnosed in women under 50<sup>3</sup>. In England, breast cancer incidence rates amongst women have increased by 90% and amongst men by as much as 60% since 1971<sup>4</sup>. Meanwhile, the economic cost of the disease to the UK economy is calculated to be a phenomenal £1.5 billion a year<sup>5</sup>. It has been predicted that, by 2020, half of the UK population will develop cancer at some point in their lives. The cost of providing optimal cancer treatment is expected to increase by 62% over the next decade, which will place massive strain on the National Health Service<sup>6</sup>. Meanwhile, the emotional and financial repercussions for those diagnosed, their families, children and friends are immeasurable.



European Age-Standardised  
Incidence Rates per 100,000  
Population, Females, Great Britain  
(Cancer Research UK)<sup>7</sup>



Current UK cancer policy focuses primarily on the early diagnosis and treatment of breast cancers. National plans for cancer prevention in England<sup>8</sup>, Scotland<sup>9</sup>, Wales<sup>10</sup> and Northern Ireland<sup>11</sup> are all limited to the promotion of healthier lifestyle choices, such as taking regular exercise, consuming less alcohol or promoting better understanding of cancer symptoms. Whilst these initiatives are commendable and, together with improved treatments, have resulted in fewer deaths from breast cancers, they have had very little impact on the rapid rise in incidence rates of the disease. Meanwhile, exposure to man-made chemical pollutants and their association with an increased vulnerability to breast cancers has become a major area of concern within the scientific community. However, it is an association that has yet to be addressed in National Cancer Plans. This creates a fundamental gap in cancer prevention policy, one that weakens the ‘battle’ against the disease.

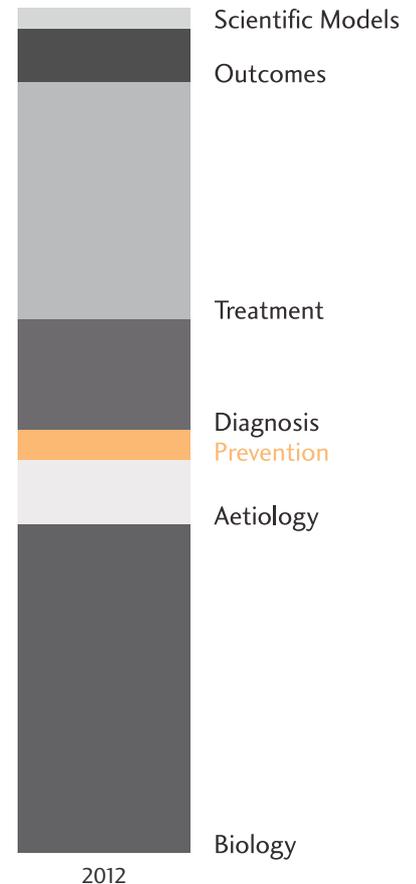
Breast Cancer UK advocates that ‘prevention is better than cure’. This manifesto presents five pledges for prevention, along with associated policy measures that Breast Cancer UK will urge the next UK Government to take forward in 2015 and beyond. Action taken now would help save lives, cut health costs and prevent the suffering of many thousands of people who would otherwise be diagnosed, treated, or suffer loss as a result of breast cancers in coming years.

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*“There are now indications that increased breast cancer risk is associated with the body burden of all oestrogenic chemicals, excluding the natural hormones.”*

The European Environment Agency<sup>12</sup>

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Proportion of funding spent on cancer prevention 2012 (NCRI CaRD 2002-2012, September 2013)





## THE LINK BETWEEN MAN-MADE CHEMICALS AND BREAST CANCER

There are various theories as to what can increase the risk of developing breast cancers. In the UK, it is estimated that 26.8% of all breast cancer cases can be attributed to “established or probable causes”, such as body weight, diet, alcohol consumption and exogenous hormones, (e.g. the oral contraceptive pill and prescribed Hormone Replacement Therapy (HRT)) and between 5% and 10% of breast cancer cases are thought to have an hereditary or familial link<sup>13</sup>. This suggests that there is no attributed cause for around 63% of breast cancer cases.

Whilst lifestyle choices and family history clearly play a part in breast cancer risk, these factors alone cannot explain why the majority of women contract breast cancer. We know that breast cancer rates are highest in developed countries<sup>14</sup> and that immigrants to western countries develop the same breast cancer risk as the residents of the country to which they have moved<sup>15,16</sup>. This suggests that the main causative factor for breast cancer is environmental<sup>17</sup>.

The hormone, oestrogen, is known to be an important factor in breast cancer development<sup>18</sup>. Women with high levels of endogenous (naturally occurring) oestrogen have over twice the average risk of developing breast cancers<sup>19</sup>. This may explain why early menarche (first menstrual cycle), late menopause, or not having children is linked to a slightly increased risk of breast cancer, as each is associated with higher levels of oestrogen in the body. Therefore, it follows that exposure to other sources of exogenous oestrogens, such as synthetic oestrogens used in chemicals and plastics, are likely to be an additional risk factor in developing breast cancers.

Society as a whole is being exposed to increasing quantities of synthetic or man-made chemicals, many of which have not been tested for all adverse health effects. Some of these are called endocrine disrupting chemicals (EDCs), because they mimic and/or disrupt the body’s natural hormones, including oestrogen. There is widespread scientific concern and numerous studies that show our exposure to these synthetic oestrogens, used in a vast array of everyday products and present in food, water and air via pollution, are associated with rising breast cancer rates<sup>20,21,22,23</sup>.



Some EDCs have been reported to cause adverse health effects at low dose levels. Evidence indicates that if exposure to EDCs takes place during critical moments of development, for example in the womb, during early infancy, childhood and into puberty, the risk of developing breast cancers later in life may increase<sup>24,25,26,27</sup>. There is also increasing concern that exposure to multiple EDCs can cause 'combination effects'. Therefore, even when each chemical is present at a level below the approved threshold considered to cause harm on its own, together they could form a hazardous cocktail in the human body<sup>28,29,30</sup>.

Numerous animal studies have shown that exposure to chemicals, such as those used in plastics (e.g. Bisphenol A<sup>31</sup> and phthalates<sup>32,33,34</sup>), pesticides (e.g. atrazine<sup>35,36,37</sup> and 2,4-D<sup>38</sup>) and flame retardants (e.g. Polybrominated Diphenyl Ether (PBDE)<sup>39,40</sup>), can adversely affect the normal development of the mammary gland, potentially making it more susceptible to cancers<sup>41</sup>. Other research reveals that women who have worked for 10 years or more in industries where exposure to man-made chemicals is high, have an estimated 42% increased risk of breast cancers<sup>42</sup>.

It is impossible for individual members of the public to try and avoid every chemical. The UK Government could and should, therefore, take steps to significantly reduce our daily exposure to chemicals of high concern, thereby improving public health and protecting future generations from increased vulnerability to diseases, such as breast cancer.



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## PLEDGE 1

## PRIORITISE THE PRIMARY PREVENTION OF BREAST CANCER

**Breast Cancer UK is calling for the prioritisation of the primary prevention of breast cancer.**

Despite mounting scientific concern about the causal links between breast cancers and exposure to EDCs and carcinogens, the UK's National Cancer Plans<sup>43</sup> and the UK's cancer research funding<sup>44</sup> streams do very little to reflect this. UK cancer 'prevention' policy focuses almost entirely on raising awareness of the symptoms, screening and early diagnosis (post-incidence detection) and will soon embark on a programme of preventative medicine in the form of Tamoxifen<sup>45</sup> for those at high risk. Whilst early detection is important, it has been incorrectly promoted to the public as being the 'best prevention', whereas it actually does nothing to prevent the disease developing in the first place. Primary prevention is about identifying and eliminating the causes of the disease, not just trying to catch it early.

According to National Cancer Research Institute (NCRI) statistics, cancer research funding has doubled in the last 10 years from, £257 million in 2002 to £507 million in 2012<sup>46</sup>. Breast cancer research funding receives the largest portion of this money, which is welcome news given its prevalence, especially amongst women in the UK. However, spending on research into cancer prevention in 2012 accounted for just 3.6%, whilst investigation into the 'exogenous' or environmental causes of cancers accounted for only 1.1% of total spend<sup>47</sup>. Whilst some nationwide studies<sup>48</sup> have identified that some lifestyle factors, such as diet and alcohol consumption, can increase the risk of breast cancers, these studies stop short of investigating the role that certain synthetic chemicals, such as those used in pesticides or plastic packaging, play in increasing the risk of breast cancers via diet and drink.

Strengthening our understanding of chemicals and how they interact with each other and our bodies would help us to identify, and take steps to eliminate, some of the chemical causes of breast cancers.

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## Policy measures:

- The UK Government to establish a Breast Cancer Prevention Strategy which prioritises the primary prevention of the disease and broadens the current focus on secondary prevention, early diagnosis and the search for a cure;
- All National Cancer Plans for England, Scotland, Wales and Northern Ireland to include exposure to hazardous chemicals, especially carcinogens and EDCs, as preventable risk factors for breast cancers;
- All National Cancer Plans to actively promote research funding into the role man-made chemicals play in increasing the risk of breast cancers;
- The UK Government to ensure that chemicals used in consumer products are fully tested for their potential to disrupt hormones.

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*“Every day, women are dying of breast cancer, so it is undoubtedly better to start somewhere than to be paralysed by the complexity into inactivity.”*

Dr Philippa Darbre, School of Biological Sciences, University of Reading<sup>49</sup>

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## PLEDGE 2

## IMPROVE REGULATION OF CHEMICALS, BASED ON THE PRECAUTIONARY PRINCIPLE

**Breast Cancer UK is calling for the regulation of chemicals to be strengthened and improved, based on the precautionary principle, to protect public health.**

Further research to help us understand what causes breast cancers is undoubtedly important, but it should not be used as an excuse to delay regulatory action and preventative measures that, if taken now, would protect public health and save lives, as well as money. Most chemicals have not been adequately tested for adverse health effects. Of those that have, some have been found to build up in our bodies, to affect hormones, disrupt DNA and cause changes in cells in ways that are linked to an increased risk of breast cancers. There is, therefore, sufficient evidence to warrant precautionary action and immediate regulation of certain chemicals.

The European Union's (EU) main system for regulating hazardous chemicals (called REACH) is, so far, acting very slowly to phase out chemicals of concern. The current requirements for chemicals testing is inadequate for identifying all EDCs and REACH does not yet sufficiently regulate many chemicals which have already been found to cause cancers, damage DNA, and impair reproduction<sup>50,51</sup>. It has also been found that manufacturers have not always presented all of the available data at the time of the chemical's regulation<sup>52</sup>. This could mean that chemicals which are suspected of causing adverse health effects, and have been linked to breast cancers in independent studies, may continue to be used in everyday products.

Breast Cancer UK welcomes the European Parliament's support for urgent action on EDCs, adopted in March 2013<sup>53</sup>, and is encouraged by the fact that a number of EU countries are taking unilateral action to ban specific hazardous chemicals, in an effort to help protect the health of their public. However, there is significant counter-pressure from certain industries and manufacturers, as well as some countries, particularly the UK, that oppose tighter regulation of chemicals of concern, preferring to prioritise profit over prevention. Breast Cancer UK urges the UK Government to prioritise primary prevention and to support a robust, precautionary approach that acknowledges the latest developments in scientific knowledge and prioritises public health.

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## Policy measures:

- The UK Government to honour its commitment to the precautionary principle, prioritise public health over commercial interests and support measures to phase out chemicals that are linked to breast cancers.
- The UK Government should nominate and support the inclusion of such chemicals to the REACH list of most harmful chemicals (Article 57 on Substances of Very High Concern (SVHC)), and equally support bans of these chemicals if safer alternatives and no predominant socio-economic need exists (Article 60.3);
- The UK Government to support an extension of EU Article 60 (3) of the REACH Regulation, to ensure EDCs are, by default, classed as SVHC, for which no safe thresholds can be determined<sup>54</sup>;
- The UK Government to actively promote the use and development of safer alternatives to hazardous substances.

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*“Scientific uncertainty should not delay regulatory action and commercial interests must not take precedent over concerns about risks associated with endocrine disruptors.”*

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The Berlaymont Declaration<sup>55</sup>

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### PLEDGE 3

## PROTECT THE UNBORN CHILD FROM THE HARMFUL EFFECTS OF CHEMICAL EXPOSURE

**Breast Cancer UK is calling for official advice to be made available to pregnant and breast feeding women to help them minimise their baby's exposure to harmful chemicals.**

Chemicals can pass easily from mother to unborn child and it is widely acknowledged that exposure to alcohol, drugs and smoking during pregnancy can have detrimental effects on the developing foetus<sup>56</sup>. There is now increasing concern that other chemical exposures during pregnancy could also have a detrimental effect on foetal development<sup>57</sup>. Yet, as the Royal College of Obstetricians and Gynaecologists recently highlighted, there is no antenatal advice or guidance available for women who are pregnant about the potential risks that exposure to these chemicals could pose for their baby<sup>58</sup>.

It is known that early life exposure to carcinogens and EDCs plays an important role in determining the risk of developing breast cancers and other diseases later in life. Exposure to these chemicals during early development (in the womb or during early childhood) can have permanent and irreversible adverse effects, especially if the exposure occurs during the period when specific tissues are developing<sup>59</sup>. The effects of exposure to carcinogens or EDCs in the womb may not always be evident at birth, but could present themselves later, including during adulthood. There is also increasing evidence that EDCs can lead to epigenetic changes that can, in some cases, even be passed from generation to generation<sup>60</sup>. Therefore, exposures that cause changes now could have far reaching effects for decades and generations to come.

Studies have also found that chemicals are present at higher levels in babies and young children. This is partly because of hand to mouth activities of young children and also because their systems are still developing and they are unable to metabolise, or rid their bodies of, the chemicals as efficiently or effectively as adults<sup>61</sup>.

Whilst it is very difficult to prove conclusively that exposure to certain chemicals in the womb or during childhood causes ill health and breast cancers later in life, the breadth of research in this field indicates a need for precautionary action. In order to help ensure we are giving our children the best start in life, practical guidance on why and how we should reduce our exposure to hazardous chemicals must be made easily available to all pregnant women, parents and carers.

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- The UK Government to recognise that exposure to hazardous chemicals is a public health issue and take steps to reduce in-utero (in the womb) and childhood exposure to hazardous chemicals;
- The UK Government, together with Public Health England, Public Health Wales, NHS Health Scotland and the Public Health Agency in Northern Ireland, to develop and implement a comprehensive programme of education and practical advice for pregnant and breast feeding women to help them reduce exposure to hazardous chemicals;
- The UK Government to conduct an assessment of childhood and early developmental exposure to EDCs.

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*“...mothers should be made aware of the sources and routes of exposure, the potential risks to the foetus/baby and the important role that the mother can play in minimising her baby’s chemical exposure.”*

The Royal College of Obstetricians and Gynaecologists<sup>62</sup>

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## PLEDGE 4

## BAN THE USE OF BISPHENOL A IN FOOD AND DRINKS PACKAGING

**Breast Cancer UK is calling for an immediate ban on the use of Bisphenol A (BPA) in all food and drinks packaging and for it to be replaced with safer alternatives.**

There is now a significant amount of scientific evidence that concludes that even low level exposure to the endocrine disrupting chemical, Bisphenol A (BPA), has an adverse effect on the development of breast tissue. There is also sufficient evidence to suggest that dietary exposure is the main route of human exposure to BPA, along with regular contact with thermal receipt paper<sup>63</sup>. Continued uncertainty about the safety of BPA is such that the precautionary principle should be used to mandate exposure elimination.

Laboratory experiments show that BPA has the ability to transform normal breast cells into cells of a more cancerous or overall malignant nature<sup>64,65,66</sup>. Animal studies show that exposure to BPA in the womb, or during early life, can increase breast density, cell growth and increase susceptibility to tumours<sup>67,68,69</sup>. BPA has also been found to trigger DNA strand breaks, to interfere with cell division<sup>70,71</sup> and with chemotherapy, making it less effective against breast cancers<sup>72</sup>.

As well as being linked to breast cancer, BPA is also linked to a range of other conditions including obesity<sup>73</sup>, heart disease and cardiovascular problems<sup>74,75</sup>, infertility<sup>76</sup>, diabetes<sup>77</sup> and recurrent miscarriage<sup>78</sup>. It was due to concerns about the harmfulness of the exposure of infants to BPA that the European Commission decided to ban its use in baby bottles in March 2011<sup>79</sup>. Whilst this overdue step was welcome, it did nothing to reduce the exposure of pregnant women and other young children to the harmful effects of BPA.

Proponents of BPA claim that it is safe to use because human levels of exposure are low. However, evidence suggests that BPA is harmful even at very low levels of exposure<sup>80</sup>. BPA gives rise to 'non monotonic' dose responses, which means that it has varying effects at different doses. Therefore, the application of so-called Tolerable Daily Intakes (TDIs)<sup>81</sup> of BPA, which have been predicted from higher doses to permit its continued use in everyday products, may well be unsafe for the consumer.

A ban on the use of BPA in food and drinks packaging in France was passed in December 2012 and will come into full effect by January 2015. Sweden, Denmark and Belgium have all taken measures to reduce its use in products marketed at children under three years old. It is vital that the UK Government takes similar steps and legislates for the provision of safer alternatives in food and drinks packaging.

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## Policy measures:

- The UK Government to support the removal of the TDI for BPA, set by the EU. It is misleading as there is sufficient evidence to suggest that there are no safe levels of exposure to BPA;
- The UK Government to ban the use of BPA in all food and drinks packaging and replace it with safer alternatives;
- The UK Government to ban the use of BPA in till and other printed receipt papers;
- The UK Government to ban the use of BPA in any products intended for children under three years old and to replace it with safer alternatives.

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*“The weight of evidence clearly shows that low dose BPA exposure affects development of the mammary gland.”*

Dr. Laura N. Vandenberg, Assistant Professor, University of Massachusetts – Amherst<sup>82</sup>

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## PLEDGE 5

### IMPROVE LABELLING AND IMPLEMENT THE 'RIGHT TO KNOW' ABOUT HARMFUL CHEMICALS

**Breast Cancer UK is calling for better product labelling to help consumers identify whether products contain chemicals categorised as being SVHC under REACH and improved enforcement of the Consumer's 'Right to Know' under REACH.**

It is not always clear that numerous products, such as children's toys, toothbrushes, shower curtains, cosmetics, food packaging, wellington boots, baby changing mats or even teething rings may contain chemicals that disrupt our hormones. Daily exposure to low level concentrations and mixtures of these chemicals are linked to an increased risk of breast cancers. Under current legislation, consumers are unable to easily identify whether a product or its packaging contains potentially harmful chemicals.

Manufacturers are only obliged to reveal whether their products contain SVHC, as identified under the EU REACH law, if a consumer writes to the manufacturer or retailer to request that information<sup>83</sup> (Article 33 of REACH). However, not only do consumers have to wait 45 days for the information, tests carried out by the European Consumers' Organisation<sup>84</sup> reveal that retailers and suppliers are currently failing to meet their obligations under that law. Furthermore, so many chemicals raise concerns that it can be difficult for consumers to know which ones they need to enquire about.

Breast Cancer UK believes that chemicals of concern should be phased out of everyday products. However, because the current chemicals regulatory system has been slow in identifying and phasing out problematic chemicals from consumer products, interim measures are required to help protect and improve public health. Better labelling of all products is one way to enable consumers to make informed choices about which products to purchase and consume.

## Policy measures:

- The UK Government to take measures to ensure all consumer products containing Substances of Very High Concern carry a warning label<sup>85</sup>;
- The UK Government to take more robust measures to identify and hold to account manufacturers that fail to comply with REACH information requirements;
- The UK Government to implement measures to support manufacturers and retailers that replace chemicals which have been identified independently<sup>86</sup> as being Substances of Very High Concern with safer, greener alternatives.

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*“Considering the high stakes for human and wildlife health, and the vast costs of dealing with the diseases likely to be attributed to these chemicals, the UK authorities have to be more cautious.”*

Professor Andreas Kortenkamp, Institute for the Environment, Brunel University <sup>87</sup>

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## SUMMARY OF RECOMMENDATIONS

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### PRIORITISE THE PRIMARY PREVENTION OF BREAST CANCER

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Breast Cancer UK is calling for the prioritisation of the primary prevention of breast cancer.

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### IMPROVE REGULATION OF CHEMICALS, BASED ON THE PRECAUTIONARY PRINCIPLE

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Breast Cancer UK is calling for the regulation of chemicals to be strengthened and improved, based on the precautionary principle, to protect public health.

3

### PROTECT THE UNBORN CHILD FROM THE HARMFUL EFFECTS OF CHEMICAL EXPOSURE

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Breast Cancer UK is calling for official advice to be made available to pregnant and breast feeding women to help them minimise their baby's exposure to harmful chemicals.

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### BAN THE USE OF BISPHENOL A (BPA) IN FOOD AND DRINKS PACKAGING

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Breast Cancer UK is calling for an immediate ban on the use of BPA in all food and drinks packaging and for it to be replaced with safer alternatives.

5

### IMPROVE LABELLING AND IMPLEMENT THE 'RIGHT TO KNOW' ABOUT HARMFUL CHEMICALS

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Breast Cancer UK is calling for better product labelling to help consumers identify whether products contain chemicals categorised as being Substances of Very High Concern under REACH and better enforcement of the Consumer's 'Right to Know' under REACH.



## CONCLUSION

There is a clear need for change. The UK Government's current policy focus on early diagnosis and treatment is helping to reduce deaths from breast cancers, but its failure to include genuine and comprehensive prevention measures means the number of women and men diagnosed with breast cancers continues to escalate year on year.

In order to prevent more people from contracting breast cancers and to protect future generations from an increased risk of developing the disease, more effort is required to identify and eliminate the chemical causes of the disease. This means prioritising the primary prevention of breast cancer; recognising exposure to hazardous chemicals as a public health issue; providing practical advice to mothers and pregnant women about reducing their own risk; taking precautionary measures by introducing tougher chemicals regulation and banning known chemicals of concern; and investing in further research into other chemicals that are suspected of increasing the risk of breast cancers.

Implementing and reinforcing the Consumer's Right to Know which chemicals are used in products and strengthening labelling laws will empower men and women to protect themselves, their families and children until policy and legislation is enforced that pro-actively protects public health by banning hazardous chemicals from use.

We need action now if we are to help prevent future generations from suffering this truly devastating and life threatening disease.

## PREVENTION IS BETTER THAN CURE.



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## NOTES

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- <sup>10</sup> 'Together for Health, Cancer Delivery Plan for the NHS to 2016' (2012): <http://wales.gov.uk/docs/dhss/publications/120613cancerplanen.pdf>.
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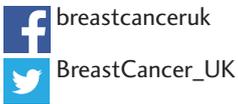
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BM Box 7767  
London WC1N 3XX

Tel: 0845 680 1322  
info@breastcanceruk.org.uk

www.breastcanceruk.org.uk



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