

WECF The Netherlands

PO Box 13047
3507 LA, Utrecht
The Netherlands
Phone: +31 - 30 - 23 10 300
Fax: +31 - 30 - 23 40 878

WECF Germany

Sankt-Jakobs-Platz 10
D – 80331 München
Germany
Phone: +49 - 89 - 23 23 938 0
Fax: +49 - 89 - 23 23 938 11
Website: www.wecf.eu
E-mail: wecf@wecf.eu

With thanks to Deena Metzger for the use of the poster "I Am No Longer Afraid".
Copies of the poster can be obtained from Donnelly/Colt. www.donnbellycolt.com
Deena Metzger is a writer, storyteller and healer who has written many books on the issue of healing and her experience of breast cancer. www.deenametzger.com



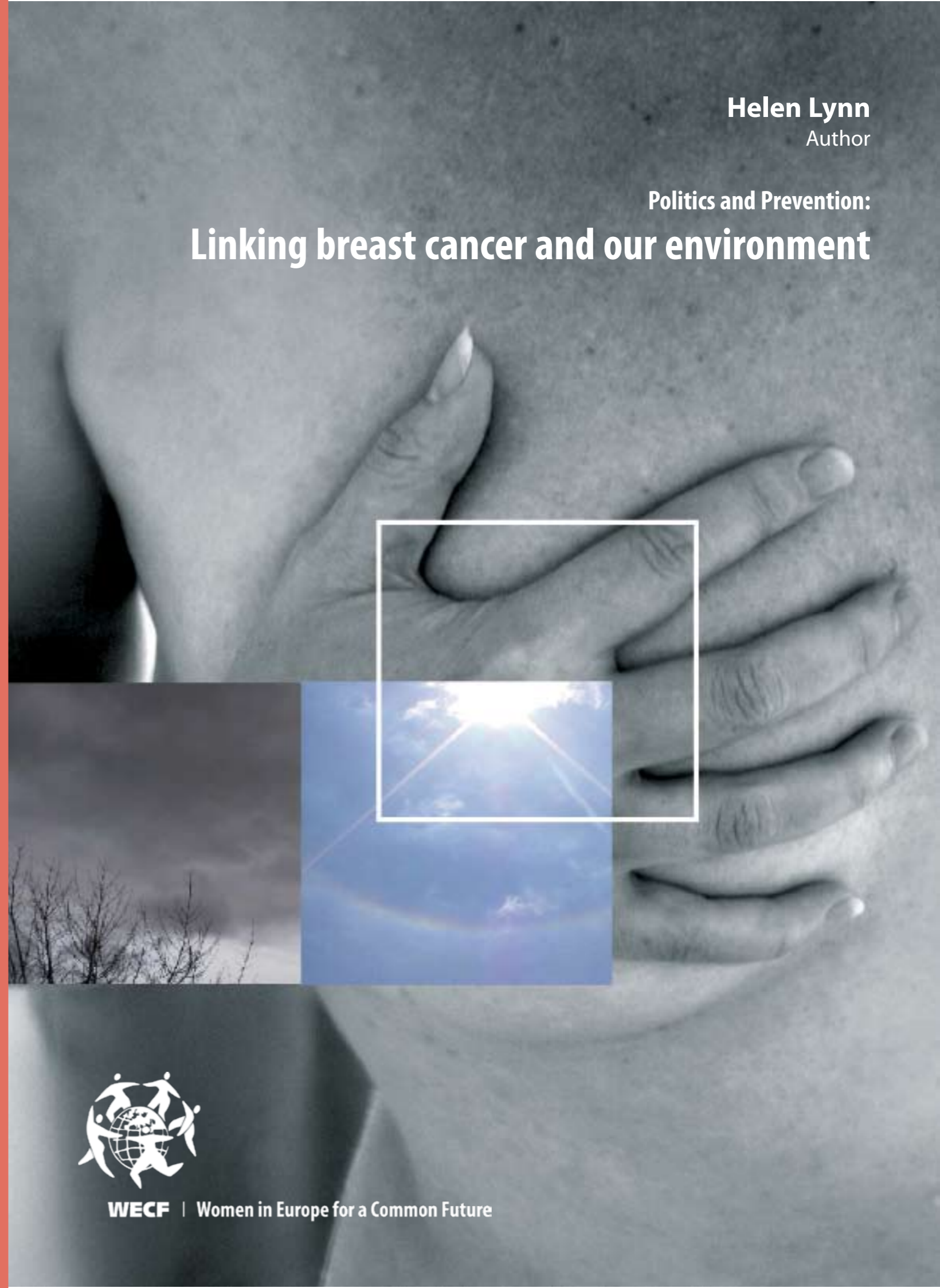
WECF | Women in Europe for a Common Future

Helen Lynn

Author

Politics and Prevention:

Linking breast cancer and our environment



WECF | Women in Europe for a Common Future

Author:
Helen Lynn
helen.lynn@wecf.eu
Wildcard Research and Communications
www.wildcardresearch.com

Layout and Photography:
vg.design

With thanks to Jasmine Osorio
and Diana Smith for their editing.

Support:
WECF wishes to thank the European
Commission DG Environment
and the Netherlands Ministry of Environment
(VROM) for their support in producing
this briefing.

WECF The Netherlands
PO Box 13047
3507 LA, Utrecht
The Netherlands
Phone: +31 - 30 - 23 10 300
Fax: +31 - 30 - 23 40 878

WECF Germany
Sankt-Jakobs-Platz 10
D – 80331 München
Germany
Phone: +49 - 89 - 23 23 938 - 0
Fax: +49 - 89 - 23 23 938 - 11

Website: www.wecf.eu
E-mail: wecf@wecf.eu



WECF | Women in Europe for a Common Future

Helen Lynn
Author

Politics and Prevention:
Linking breast cancer and our environment

The question is how much evidence is enough?

Breast cancer, the unexpected journey

No woman wants to go on the breast cancer journey. For many, breast cancer can be likened to an unexpected journey, one for which we are not prepared, and for which there are few guidebooks. Each woman's experience is different. We might feel isolated, alone, and scared. But fortunately, or unfortunately, we are not alone.

Many women draw on the active breast cancer community which has grown up around this disease, working to politicise the issue and provide a forum for activism on prevention and advice on treatment and aftercare. But what if the journey was preventable? The evidence to suggest that breast cancer is a preventable disease linked to our ever increasingly polluted environment has been gaining ground since the early 1960s. Yet the cancer establishment and our governments refuse to see this mounting evidence as pointing towards breast cancer being an environmental disease. Their unwavering question, "Where is the evidence?" begs the answer, "How much evidence is enough?" Breast cancer is a multifactorial disease which means it is believed to result from the interaction of genetic factors with an environmental factor or factors. ¹

Breast cancer has a long latency period, as much as 20 to 40 years, which means the cancer could result from exposures or events in childhood or even pre birth. Measuring toxic chemical levels (in a woman) at a time when the disease is diagnosed will miss important features and give a warped picture of exposures. ¹⁶ Incidence figures vary, as women who die from breast cancer do so mainly as a result of breast cancer cells breaking away from the tumour and spreading to other parts

of the body via the lymph and blood systems - this is called metastasis. Secondary cancer arising from the primary cancer of the breast is usually responsible for death although radiation treatment and chemotherapy also play a role. The traditional approach to breast cancer is that of researching the disease, giving treatment after diagnosis and trying to find a cure, rather than studying health with the goal of preventing the disease. This approach places the responsibility for prevention on the individual rather than society as a whole. It focuses on lifestyle alone, while deflecting attention from the environmental and occupational risk factors. Detecting, treating and

researching breast cancer doesn't come cheap. The rising incidence of breast cancer is not sustainable, treatment is costly but, more importantly, the cost to society in lost lives is immeasurable.

Prevention is the most important cornerstone in the foundation to overcoming breast cancer along with early detection, treatment and palliative care. It is more cost effective than treatment in the long run. Strategies to reduce exposure to toxic chemicals will also have a beneficial effect on other environmentally related diseases. ² Primary prevention should be the basis for a EU wide strategy on breast cancer.

Risk factors for breast cancer

The conventionally accepted risk factors for breast cancer which increase the risk of getting the disease and over which we have little control are:

- *Early onset of menarche (menstruation)*
- *Late onset of menopause*
- *Use of hormonal contraceptives*
- *Age*
- *Geographic location*
- *Family history*
- *Exposure to ionising radiation*
- *Cancer in the other breast*
- *Previous benign breast disease*
- *Mothers use of DES (Diethylstilboestrol)*

Risk factors over which we may have some control:

- *Diet*
- *Alcohol consumption*
- *Exposure to ionising radiation*
- *Age at first full term pregnancy*
- *Obesity*
- *Socio economic group*
- *Use of hormonal contraceptives*
- *Use of Tamoxifen (breast cancer drug)*
- *Use of Hormone Replacement Therapy (HRT)*
- *Short breastfeeding history*
- *Second hand cigarette smoke*

The missing risk factors

Non-conventionally accepted risk factors that should be included on the list: ³

- *Exposure to endocrine disrupting substances and carcinogens*
- *Lifetime exposure to synthetic and natural oestrogen's*
- *Trauma to breast*
- *Exposure to light at night*
- *Stress*
- *Occupational exposures*
- *Shift work*

All of the conventionally accepted risk factors only account for 30-50% of all breast cancer cases, including the 10% of cases which are due to a family history of the disease or genetic predisposition. ⁴ This leaves 50-70% of cases with no known cause. We believe this is where the environment and exposure to toxic substances plays a major role. A breast cancer cell is made not born. ⁵ The only two risk factors we can be absolutely sure of in terms of developing the disease are: exposure to ionising radiation and being a woman. Men can get breast cancer too but compared to women the incidence is

very small. With the exception of ionising radiation or carrying a known genetic mutation (family history or the genes BRCA1 or BRCA2) most of the other risk factors for breast cancer are connected to a cumulative lifetime exposure to female hormones, in particular, synthetic or natural oestrogens. Either too much, too soon, the wrong kind, in the wrong combination, or the wrong place. But none of the established risk factors directly causes the disease. There is considerable evidence to support the inclusion of the missing risk factors alongside those on the list which are currently conventionally accepted.

Each woman's experience is different. We might feel isolated, alone, and scared. But fortunately or unfortunately we are not alone.





?

A breast cancer cell is made not born

EU statistics ⁶

- A woman's lifetime risk for breast cancer is 1 in 10
- Each year breast cancer incidence is rising world wide
- Number of deaths per year 130,000
- Newly diagnosed cases per year 350,000
- Breast cancer is the main cause of death in women aged between 35 and 64
- Every 6 minutes a woman dies from breast cancer in the EU
- Ever increasing numbers of younger women are getting breast cancer
- 35% of women living with breast cancer are under 55
- 12 % of breast cancer cases are women under the age of 45
- 2% of all cases occur in men
- Nearly 20% of all cancer deaths are due to breast cancer
- Breast cancer rates have increased by more than 50% over the last twenty years

It's difficult to get a full picture of breast cancer in the EU as the statistics for Europe vary considerably and are often estimated as there is no common protocol for recording breast cancer statistics and mortality.⁷

The risk of getting breast cancer in Western Europe is 60% greater than in Eastern Europe ⁶ and the highest incidence rates are found in the more developed countries of North Western Europe such as Sweden, Denmark, Finland, the UK, the Netherlands, Germany, Belgium, and Hungary compared to that in Romania, Estonia, Lithuania, Poland, Latvia and Slovakia. ⁸

Mortality has dropped and the survival rates have been improving these last 20 years. The average European survival rate 5 years after diagnosis is between 60-80%. ⁹ But survival rates must not be confused with a 'cure'.

For women with breast cancer, death from cancer remains a risk 5 years and even 20 years after diagnosis. ¹⁰

The UK has one of the lowest survival rates for breast cancer in Europe. In proportion to what it spends on breast cancer, it is below some Eastern European countries who spend less than a third of what the UK spends on their health care budget per head of population.

Useful websites
www-dep.iarc.fr
www.encl.com.fr
www.epgbc.org

Every 6 minutes a woman dies from breast cancer in the EU

Breasts – the giver and taker of life

Medically, breasts have always been of interest for two polar opposite reasons; they can sustain life through lactation and they can hasten death through breast cancer.

Breast cancer is not a new disease, the ancient Egyptians first recorded the disease as tumours of the breast for which there was no real cure except the barbaric practice of cauterisation with a hot poker. In the thirteenth century the Italians advised cutting and cauterising. It was not known then that such surgery could spread the disease.

Mastectomy, an operation which removes all or part of the breast, came into practice in 1880's. Invented by William Halsted, it was called the Halsted Radical Mastectomy and removed the entire breast, lymph nodes and tendons. ¹² This prevailed as the standard treatment for breast cancer for nearly 60 years. It wasn't until the 1970's that this radical surgery was challenged by both patients and doctors. Lumpectomies or removal of just the tumour and some surrounding tissue including some lymph nodes, followed by radiation, became popular. ¹²

There are four major treatments for breast cancer: hormone, surgery, chemotherapy and radiation or as Dr. Susan Love's infamous quote puts it 'Slash, Poison and Burn.'¹² Current treatment for breast cancer is far from perfect. Despite having come a long way there is still a large part of the journey to travel, which is why more focus has to be put on prevention.

The oestrogen factor

Our breasts are stimulated to grow by the female hormone oestrogen when we reach puberty. They have a two fold purpose in life, to give sexual pleasure and as the producer of milk for nursing.

Oestrogen is also crucial to breast cancer. It stimulates breast cell division, which can increase the risk of breast cancer by allowing the DNA to be damaged. Cells that divide are at a higher risk of acquiring mutations than cells that don't divide. Breast cancer is mutated and damaged cells growing out of control, fuelled by oestrogen. The more the breast is exposed to oestrogen the more likely a woman is to develop breast cancer.¹³

A woman's breasts are constantly changing throughout her life, through puberty, menstruation, pregnancy, and menopause. Because breasts are mainly composed of fat tissue they can also fluctuate in size if a woman is dieting, breastfeeding, or if she gains or loses weight.

As most breast development occurs between puberty and a woman's first pregnancy,¹⁴ young women's breasts in particular may be more susceptible to mutations because they are not fully mature and are not as efficient at repairing any genetic damage compared to mature breast cancer cells.¹⁵

If a young woman enters puberty early this prolongs the period that her breasts are exposed to oestrogen because she has more menstrual cycles during her lifetime. Forty years ago young women reached puberty between the ages of 11 and 13, today puberty can begin as young as 8 years old. As the age of onset of first menstrual period (menarche) decreases the overall risk of breast cancer increases. For every year the onset of menstruation is delayed, the risk of breast cancer decreases by 5%.¹⁶ Before age 12, onset of menarche increases breast cancer risk by 50% compared to menarche at 16.¹⁷

This early onset has been linked to environmental and endocrine-disrupting chemicals and substances such as Bisphenol A, Phthalates and Lead.¹⁸ At the other end of a woman's reproductive life, a late menopause prolongs her exposure to oestrogen. For every year that menopause is delayed the risk of breast cancer increases by 3%.¹⁶ Lack of children means the woman forgoes the protection of a period of time where her breasts are not exposed to oestrogen and when she might breast feed. Pregnancy and breastfeeding offer protection in the form of less exposure to oestrogen and this decreases the risk.¹⁵

Chemicals in our environment can mimic our own natural oestrogen and are called oestrogen mimicking chemicals or endocrine disrupting chemicals (EDCs). More than 500 chemicals have been found to be weakly oestrogenic. These chemicals can be found widely in our environment and in products we use on a daily basis such as cosmetics, cleaning products, packaging, plastics and also in the food we eat in the form of pesticide residues. EDCs in the body can block the normal function of oestrogen, either adding to the levels of oestrogen or interfering with its breakdown. Hormones act like a lock and key system. EDCs can attach and block the lock from natural oestrogen hence increasing the levels in the body. They can fit into the lock and give out the wrong signals to the body, fit into locks where oestrogen was never intended to fit,

Breast-feeding is vital for a child's survival and well-being

or interfere with the body's natural processes of elimination or damage repair.

Many of these chemicals and substances are fat soluble and up to 300 have been found in human fat tissue and breast milk. Women have a higher body fat content to men and this means a larger storage area for toxic chemicals.¹⁹

We also detoxify some substances more slowly than men. As the breast consists of a large percentage of fat cells then it is particularly vulnerable to toxic chemicals. Even pre birth exposures to minute traces of toxic chemicals can influence a woman's chances of developing breast cancer later in her life.

We currently have little knowledge about how the combined and cumulative daily exposure to these chemicals and substances can affect us. But from what we do know it is advisable to act now and call for certain chemicals to be banned, eliminated or phased out, especially those that build up in body fat and breast milk.

Useful websites:
www.ibfan.org
www.waba.org
www.nrdc.org
www.healthandenvironment.org



Cancer is mutated and damaged cells growing out of control and fuelled by oestrogen. The more the breast is exposed to oestrogen the more likely a woman is to develop breast cancer

Breast milk

Breastfeeding is vital for a child's survival and well-being and beneficial for the mother's health. It provides complete nourishment for the baby and is free, unpackaged, and bonds mother and child.²⁰ A breast-fed baby suffers fewer allergies, respiratory problems, and middle ear infections and breastfeeding reduces infant mortality and immune system disorders.²¹

The human breast is a modified sweat gland which produces breast milk in females. Mammary glands are distributed throughout the breast. These manufacture the milk which is then channelled through lactiferous ducts towards the nipple. The ductal network looks like the roots of a tree culminating at the nipple. The remainder of the breast is composed of connective tissue and adipose (fat) tissue. The number of glands to fat tissue doubles when a woman is lactating. Breastfeeding benefits the mother by reducing the risk of developing uterine, endometrial and ovarian cancer and osteoporosis in later life. It acts as a contraceptive and

helps mothers lose weight after childbirth. Breastfeeding for two or more years can reduce the risk of developing breast cancer by 24%.²⁰

However breast milk is currently one of the most contaminated substances on the planet and the human baby is right at the top of the food chain as fat soluble chemicals biomagnify (progressive build up in concentration) as they climb the food chain. Because certain toxic chemicals are fat soluble they can, unwittingly, be passed from mother to child. At least 60% of the fat in breast milk globules is drawn from fat reserves (which build up over her lifetime) throughout the mother's body – from hips, bellies, thighs, and buttocks. Only 30% of the fat comes from the woman's daily diet and 10% is manufactured on the spot in the mammary glands.²³

Exposure to toxic chemicals before birth is thought to be of greater consequence to a child's health than exposure after birth through breast milk. WECF stresses that breast milk is still the best food for an infant but it could be better.

We all carry a burden of synthetic chemicals in our bodies

Exposure without consent – linking breast cancer and the environment

It must be said that not all chemicals are toxic to humans, their environment or wildlife. Many chemicals are intrinsic to our life on this planet. Indeed we are made up of chemicals, and could not function without them. So too is everything we touch, see and the very air we breathe. But, there is considerable evidence which links breast cancer to our polluted environment and chemicals used in everyday products and workplaces. Many of these chemicals can be found in products widely available on our shop shelves or in the environment as a direct result of their manufacturing, use or disposal.

They include: industrial chemicals, pesticides, dyes, chlorinated solvents, drinking water disinfectant by-products, pharmaceuticals and hormones, EDCs such as polycyclic aromatic hydrocarbons (PAHs), dioxins, furans, phenols and alkylphenols, phthalates, parabens, styrene, metals and phytoestrogens.²⁴

These chemical names may mean little to the consumer but we are each intimately associated with them as we unknowingly carry them in our bodies. Up to 280 synthetic chemicals have been detected in umbilical cord blood²⁵ and as many as 300 in human fat tissue. In laboratory tests 250 chemicals were identified which mimic or interfere with oestrogen.²⁶

Taking one group of products such as cosmetics. They can contain ingredients which have been linked to breast cancer, asthma and allergies, and reproductive disorders.²⁷ The skin is the largest organ in the human body and through it we can absorb ingredients in cosmetics. Many of

the ingredients have not been tested for adverse health effects and there is serious concern about the cumulative effect and combined low dose, long term exposure to these ingredients. (see table for ingredients of concern).

Women may use up to 26 different products as part of their morning beauty routine. There are over 5000 different ingredients used in cosmetics and 5 billion cosmetics products are sold every year to 380 million consumers in the EU. That's a lot of potential exposure.²⁸

The cosmetic industries' reassurance of safety does little to satisfy us.

As consumers we are unaware when ingredients are removed from cosmetics due to evidence of their adverse effects on health. One example of this is phthalates.

Two of the phthalate family (DEHP and DBP) were banned in 2003 and included on the list of over 1000 other substances in EU that are banned from use in cosmetics because they are carcinogens, mutagens or reproductive toxicants. Due to cosmetics industry self regulation, many of these ingredients have been used in cosmetics for years, exposing the consumer without their knowledge.

Cosmetics are only one example. On the following page is a table which lists some of the chemicals and substances linked to breast cancer. They can be found in our environment, our homes, our workplaces and our food, water and air.

Women are particularly vulnerable to certain toxic exposures at certain times of life - during puberty, pregnancy, menopause and old age.

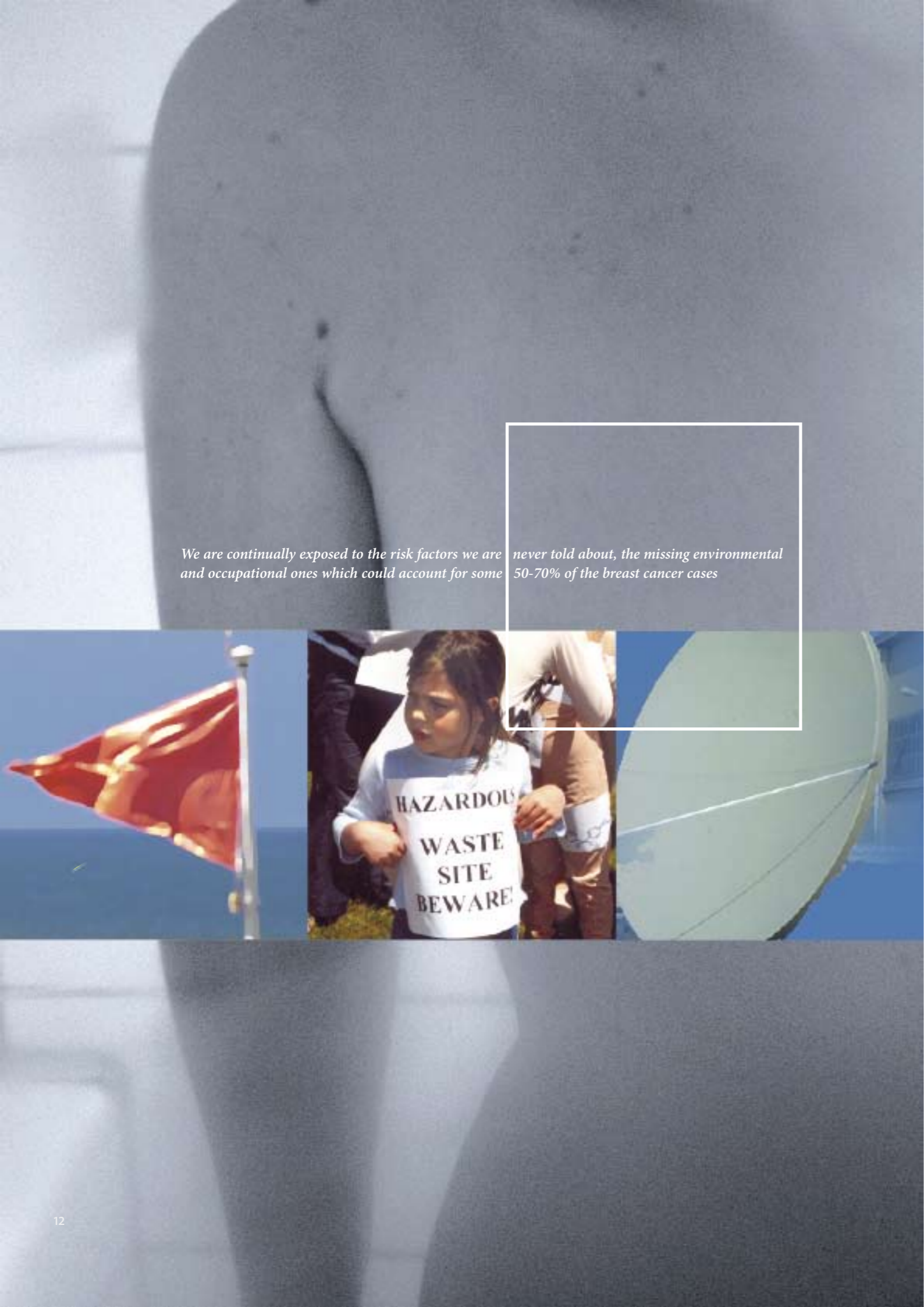
| Chemical Name | Action | Use | Found in |
|--|---------|---|--|
| Phthalates – DEHP (banned) DBP (banned) BBP DEP | EDC & C | <i>Soften plastics. In cosmetics to denature alcohol (make it undrinkable), and to carry fragrances in cleaning products and cosmetics.</i> | Inks, adhesives, paints, flooring, toys, many plastic consumer products, cosmetics, including perfumes, body sprays, aftershaves. |
| Polychlorinated Biphenyls (PCB's) Banned. | EDC & C | <i>Cool and insulate industrial transformers and capacitors. As additives in PVC wiring.</i> | Lubricating fluids and various inks, adhesives and paints. |
| Parabens - Butyl, Ethyl, Metyl, or Propyl paraben | EDC | <i>Preservative in cosmetics, personal care products and to prevent mould and yeasts in food and drinks.</i> | Cosmetics, such as shower gels, shampoos, moisturiser, and deodorants, jams, beers, and desserts. |
| Pesticides & Herbicides | | | |
| Atrazine, Dieldrin, Chlordane, Cyanazine, Captafol, Flucythrinate, Ethylene dioxide, Ethylene dibromide, DDT, Lindane, Tributyl tin, Ethylene oxide | EDC & C | <i>Prevent pests in fish farming, and food crops, gardening and as rodent repellent.</i> | Many already banned. Residues found in food, chocolate, drinking water, and some consumer products such as carpets. Antifouling paint on hulls of boats. Some persistent in the environment. |
| Brominated Flame Retardants (BFRs) | EDC | <i>Stop the spread of flames in consumer products.</i> | Computers, furniture, TV's, carpets and paints. |
| Polyhalogenated Aromatic Hydrocarbons (PAH's) | C | <i>Point source pollutants produced when carbon containing fuels, such as wood, coal, tobacco or fat, are burnt.</i> | Found in air and industrial pollution. Traffic fumes and crude oil. |
| Vinyl chloride (VCM) | C | <i>Chemical intermediate, and to make PVC.</i> | Building materials, flooring, plastic tubing, wiring, and other plastic consumer products. |
| Styrene - Vinyl acetate | C | <i>Manufacture of synthetic rubber.</i> | Found in rubber, plastic, insulation, fiberglass, pipes, automobile parts, food containers, and carpet backing. |
| Bisphenol A | EDC & C | <i>The manufacture of polycarbonate plastic and epoxy resin.</i> | Babies bottles, products white dental fillings, nail polish, food packaging, linings of tin cans, contact lenses, water filters, false teeth, adhesives, water pipe linings and flooring. |
| Methylene chloride | C | <i>Solvent, paint stripper and degreaser as a fumigant in food crops.</i> | Furniture strippers and adhesives. |
| Nonylphenol & Alkylphenols (banned) | EDC | <i>Additive to prevent plastics from cracking, as a surfactant, and in manufacturing of wool and metal.</i> | Cleaning and cosmetic products, detergents and pesticides. |
| Heavy metals | | | |
| Mercury | EDC | <i>Manufacture of industrial chemicals and electrical and electronic applications.</i> | Thermometers, dentistry, agricultural chemicals, industrial pollution and batteries. |
| Cadmium | C | <i>Electroplating, semiconductors, dentistry, photography, and as a pesticide.</i> | Found in storage batteries, paints, pigments, glass and glaze. |
| Benzene | | <i>Solvent. Used in manufacturing of synthetic rubber and dyes, explosives and pesticides.</i> | Petrol, and crude oil. Industrial pollutant. |
| Dioxins and Furans | C | <i>No application.</i> | Produced during incineration and chlorine bleaching of paper. Industrial pollutants. |

The links between breast cancer and the environment

- Migrants rates of breast cancer reflect that of their host country within one or two generations.³⁰
- Working in certain occupations or with certain substances has been shown to increase incidence of cancer.
- Cancer risk for adopted children mirrors that of their adoptive not biological parents, demonstrating a link between shared environments.
- Patterns of cancer clusters are not explained by current accepted risk factors.
- Breast cancer in twins cannot be explained by inherited factors. Inherited genetic factors only make a minor contribution to cancer as twins do not get the same cancer.³¹
- In pre-birth and early years placenta and blood-brain 'barriers' are not real barriers. Toxic chemicals can cross the placenta and the blood-brain 'barrier'.
- Although women are living longer we are less likely to live those extra years in health. Women almost universally live longer than men but spend a greater number of years and a greater proportion of their life with disability and ill-health.³²
- The use of lawn and garden pesticides was associated with approximately 40% increase risk of developing breast cancer.³³
- Women born to mothers with pre-eclampsia and therefore lower oestrogen levels during pregnancy, had significantly reduced risks of developing breast cancer. Women born to mothers with elevated oestrogen during pregnancy had an increased risk of breast cancer.³⁴
- It is now thought that the timing of exposure to toxic chemicals can be more important than the dose (amount).
- Breast cancer is indeed a symbolic illness, one which is indicative of our polluted environment.

Found in cosmetics, such as shower gels, shampoos, moisturiser, and deodorants

Useful websites
www.pan-europe.info
www.wen.org.uk
www.safecosmetics.org
envirocancer.cornell.edu
www.ewg.org



We are continually exposed to the risk factors we are never told about, the missing environmental and occupational ones which could account for some 50-70% of the breast cancer cases

The politics, the media and breast cancer

Breast cancer is a very emotive disease. This emotion is played out to great effect by the media.

Each October media portrays breast cancer in the form of personal narratives used to both inspire and trivialise the disease. While these may comfort some individuals they pose no challenge to the status quo. They do not address the failure of medical science to either prevent or cure the disease or to ask why the incidence rate continues to climb. There is little room for mentioning environmental or occupational links as a cause.

In fact, the media seem to actively discourage this in favour of better diets, more exercise and the most recent "magic bullet" (wonder drug).³⁵

Each media story relating to breast cancer is generally accompanied by a picture of a woman undergoing a mammogram therefore reinforcing the medical side of the story to the exclusion of all else. The cancer establishment with its lifestyle focused risk factors, place all responsibility for the disease at the feet of the individual. Women are viewed as bringing the disease upon themselves. We are told we have our children too late, we drink and smoke too much, exercise too little, don't breast feed enough, have our periods too early and our menopause too late and take too many pills such as HRT and the pill, as increasingly our natural biological processes are medicalised.

While we try and gain some control over some of the conventionally accepted risk factors by eating well, exercising, and not smoking or drinking, we are continually exposed to the risk factors we are never told about, the missing environmental and occupational ones which could account for some 50-70% of breast cancer cases. So why is prevention off the agenda and the missing factors ignored?

Useful websites:

www.preventcancer.org

www.nomorebreastcancer.org.uk

There is little room for mentioning environmental or occupational links as a cause

Barriers to prevention

We know there are barriers to putting prevention on the agenda. The document Breast Cancer: an Environmental Disease cites them as:

Acceptance

Our society has been conditioned to think of breast cancer as a fact of life and as unpreventable

Confusion

Women are taught that early detection and treatment are the answers to breast cancer

Fear

The fear linked to all forms of cancer leads to resistance

Fixation

Our society is fixated on treatment and control of disease, rather than primary prevention

Ignorance

The narrow focus on lifestyle factors as the key to prevention;

Invisibility

The lack of visibility in many carcinogenic chemicals (no odour or colour) creates an "out of sight, out of mind" mentality

Procrastination

Policy makers often call for more research when prevention is concerned

Vested Interests and the status quo

There is no profit in prevention

In order to lobby effectively we need to be aware of the unspoken barriers and strategise about how we might overcome them.

The language of breast cancer

The language used around breast cancer is unique to this disease. No other disease has to be fought so aggressively with little room for women to feel shocked with their diagnosis, distraught, or unable to cope.

The terminology used is military language with war-like metaphors such as 'winning the war on breast cancer', and 'fighting the disease'. It's hard to pinpoint why this is but maybe it is because the disease and the treatment are both invasive.

Although this type of imagery might serve to help some women get through the disease it is questionable as to what

purpose it serves for the disease to be portrayed in this way. Media headlines proclaim 'cancer war needs better battle plan', 'unfriendly fire in cancer war', 'screenings a real weapon in cancer war', 'breast cancer, a call to arms', 'good genes being trained to fight cancer', 'tomatoes help fight cancer', 'the latest weapon in the battle against cancer', and 'breast cancer fight sees pink'.

The question that needs to be asked is, in using this terminology what kind of message does it send to the woman with breast cancer? In every war there are heroes, victims, and survivors. None of these terms may be appropriate for women living with breast cancer.

Women may feel they must 'soldier on', 'be brave' and courageous. Whereas with other diseases people are allowed to be sick, they don't have to fight wars, to win or lose. Breast cancer is portrayed as a fight to be fought, won or lost on the battle field of life.³⁶

Although a 'fighting spirit' is said to be advantageous to survival, it should not be something that is imposed on women. Especially as the body count and the lack of progression on prevention of breast cancer is something that both the media and the cancer establishment shy away from portraying.



Breast cancer is portrayed as a fight to be fought, won or lost on the battle field of life

Mammography

It's important to state that WECF would not deter women from getting a mammogram but thinks it is important that women be aware of the risks involved before the procedure, acquainting themselves with alternatives like MRI and BSE. Mammography is currently one of the few tools available for women over 50 to detect cancer of the breast, however it may not be a suitable technology for screening younger breasts. WECF would like to see funding for safer detection methods EU wide.

Mammography uses X rays in low doses to detect breast cancer. It is currently the only affordable technology available to screen the breast. It does however deliver a dose of ionising radiation, a known carcinogen, to the breast and surrounding tissue. This dose can accumulate over a woman's lifetime and the greater the exposure and dose, the greater the risk of developing cancer.³⁷ Breast tissue changes rapidly, especially during development and at other key

reproductive moments in a woman's life, and is very, very sensitive to radiation. Mammography of younger women's breasts does not give good results as the breast are too dense. This means of detection should be avoided in younger women.

It is worth pointing out that mammography is a tool for detection and not prevention. It can also miss a quarter of all tumours or give false negatives and positives, failing to find the cancer or finding cells that may never become cancerous during a woman's lifetime.³⁷ Radiation is a known cancer causing agent. Evidence from Hiroshima and Nagasaki 35 years after the atomic bomb shows 4 times the increased rates of breast cancer in those under 4 years old at the time. There were twice as many cases of breast cancer in those aged 10-14, compared with women aged 20-30.^{3,38}

The risk to health is something that women should make themselves aware of before opting for a mammogram.

Research shows a 2-3 times increased risk for women who had their breasts exposed to radiation for treatment of a prior cancer, or at a young age.³⁹ And care should be taken with women carrying the hereditary gene BRCA1 or BRCA2 or the A-T (ataxia-telangiectasia) gene.

Magnetic Resonance Imaging (MRI) is better at detecting early breast cancer but it is also very expensive. It uses magnetic fields as opposed to radiation and is therefore safer although it still may not be the answer to the problem of safe and effective detection. It does not find so many false positives and in recent studies it detected 98% of potential cancers compared with 52% found by mammography.⁴⁰

A less costly and safer option might be breast self examination (BSE). Given that most women or their partners find their own lumps. BSE can be taught by a nurse to all women in order for them to check their breasts regularly for changes. The costly technology for

detection may not be an option for some EU and EEC countries. Maybe it's time to weigh the costs of lives with the cost of equipment and err on the side of saving lives through safer detection methods. Mammography screening can reduce mortality by 35% percent in women aged between 50-69 years. But for every 500 women screened, one life will be saved and 499 women will be exposed to a dose of radiation which could increase their risk.⁴¹ None of the above methods can always detect cancer in the breast.

Useful websites:
www.bcaction.org
www.preventcancer.com
www.breastcancereurope.com

Exposures in the workplace

Traditionally women's workplaces are regarded as safer than men's but with more and more women entering previously male dominated workplaces this is no longer true.

There is a cyclical nature to the fact that women's work related injuries and diseases are seriously underestimated especially in relation to occupational cancer. Assumptions are that women's work is viewed as safe and therefore there is little gender specific research. Women are thus excluded from studies because the risks are not visible so there is little incentive to include them in further studies. Illness can be attributed to a woman's hormones or her imagination since diseases like cancer

build up over time and makes it harder to make the connection with work and the workplace.⁴²

The work women do exposes them in a particular way to double, triple and sometimes quadruple jeopardy. For example, a woman may be exposed to pesticides at work, at home, in the garden and in the wider environment which may be why women tend to have more occupational diseases than men. Meanwhile, men tend to work in more risky workplaces which lead to more accidents.⁴³

Risk assessments and legislation for occupational exposure rarely consider differences between the genders and safety standards are set from research carried out

on men which is assumed will be applicable to women. Health and safety for women is largely aimed at reproductive health and not the woman herself.

The changing nature of employment means longer hours and shift work which can also increase the risk of breast cancer by 48%.⁴⁵ Women tend to work more in part time jobs, and in family businesses which may mean less health and safety regulation.⁴⁴

Certain occupations carry with them an increased rate of breast cancer such as nurses, health care assistants, solvent workers, health technicians, pharmacists, female flight attendants, teachers, women working in agriculture, semiconductor workers, pesticides applicators, 7

hairdressers, beauticians, librarians, painters, sculptors, and precision workers in textiles.⁴⁶ While exposure to substances may explain some of the elevated risk not all of the risk factors have, as yet, been identified. It is estimated that between 1,500 – 5,000 breast cancers cases each year in the UK are linked to workplace factors.⁴⁶ Unfortunately for workers, most causes of cancer have been identified in studies of workers.⁴⁷ They can be likened to canaries in a mine. Of the 100,000 chemicals used in workplaces worldwide, barely 1 in 100 has been thoroughly tested for health risks.⁴⁶ It is encouraging that as more women enter the workforce, they also

have the opportunity to join their trade union and become actively involved in determining health and safety legislation which protects a woman at all stages of her working life. But there needs to be better enforcement of the legislation which does exist and a rethink about how to make research more women-focused to prevent occupational cancer.

Useful websites:
www.hazards.org
www.ilo.org
www.etuc.org

REACH for a toxic free future?

As citizens and consumers we need to ask ourselves if we assume all the products on our store shelves are safe? And if so why do we think that?

New EU chemicals legislation, Registration, Evaluation, Authorisation and Restriction of Chemical substances (REACH) entered into force on the 1st June 2007. The new legislation aims to "improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances."⁴⁸ More than 100,000 chemicals are marketed in the EU alone every year and under REACH, 30,000 of them will be evaluated for environmental health and safety over 11 years.⁴⁹

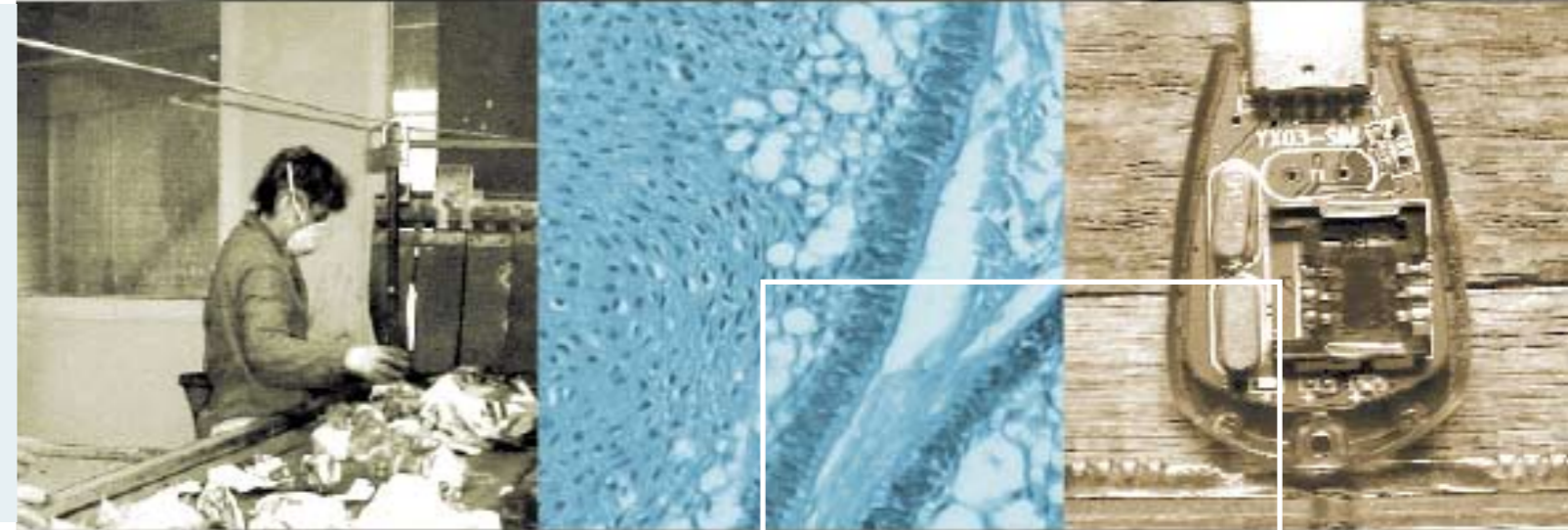
Contrary to industry's lobby about bankruptcy, the cost of REACH to the chemical industry will be 2.8 – 5.2 billion Euro over a period of 11 years. This represents about 0.05 – 0.09 % of the annual turnover of the industry. In contrast, 50 billion Euro could be saved through REACH over the next 30 years on public health costs alone.⁴⁹ EU citizens, NGO's and trade unions need

to work together to ensure this legislation does protect human health at home, in the workplace, and in the wider environment.

Useful websites:
www.chemicalreaction.org
www.wecf.eu
www.devradavis.org
www.artac.info

Breast cancer should not be inevitable for women. We all have a right to a life free of breast cancer and to a healthy environment. We have to work to inspire and support each other to take action. If breast cancer incidence levels can go up, then they can also come down. We need to join organisations and individuals already working for a toxic free future.

The work women do exposes them in a particular way to double, triple and sometimes quadruple jeopardy



Do we assume that the products on our store shelves are safe?

What you can do?

- Eat a healthy diet, organic or locally grown where possible, consider, in order of preference:
 - *Organic, locally grown and seasonal; it has the least environmental impact and is most beneficial to health as no pesticides used.*
 - *Locally grown if available; it reduces CO2 and climate change.*
 - *Fair trade and organic gives a fair price to producers and there is no pesticide exposure to the producer or the consumer; but there maybe food miles involved.*
 - *Organic food; no pesticide exposure to producer or consumer but maybe lots of food miles involved.*
 - *Fair-trade gives a fair price and better working conditions to the producer; but may not be organic or local.*⁵⁰
- Clean your home with natural products. www.womenandenvironment.org
- Chose natural fibers for clothing such as cotton, wool or hemp, organic if possible.
- Avoid clothes that need to be dry cleaned.
- Eat lower on the food chain to avoid bio-accumulative toxins which build up in animal fat.
- Become your own workplace detective. Download the Zero Cancer Guide. www.imfmetal.org/cancer
- Stay fit and exercise regularly.
- Green up your gardening. Avoid pesticides, fungicides and insects killers in your home and garden.
- Reduce your consumption and waste by avoiding over packaging, and being a thoughtful consumer.
- Think before you pink! Before you buy products to support breast cancer ask where does the money go and does the product you are buying contain any ingredients which are linked to breast cancer? Check www.thinkbeforeyoupink.org
- For more information on REACH and what you can do download the booklet navigating REACH from www.chemicalreaction.org
- Women who have had breast cancer and subsequent treatment may have compromised immune systems and be more susceptible to environmental insults and toxic exposure. Where possible they should reduce their exposure to toxic chemicals as outlined in this section and become part of the lobby for a toxic free future for all.

What you can ask your government and the EU

- Call for a precautionary approach to all substances shown to be carcinogenic, mutagenic or endocrine disrupting to animals.
- The person is political. Take the time for individual action by writing letters, asking for safer alternatives, and demanding to know whats in the products you buy.
- Ask your MEP to support the EU resolution point 9 on Breast Cancer passed in October 2006 which calls on the EU to step up support for research into breast cancer prevention including research on the effects of harmful chemicals and environmental pollutants. (BC resolution point 9 2006 - www.epgbc.org/ResolutionBreastCancer.asp)
- Call for an EU wide strategy on the primary prevention of breast cancer.
- Lobby for a common EU registry for collecting statistics on incidence and mortality of breast cancer.
- Sign the Paris Appeal - www.artac.info and bring it to the attention of your MEP or government representative.
- Occupational and environmental cancer prevention should be recognised by the government as a major public health priority and should be allocated resources accordingly.
- Persuade the cancer establishment to accept the missing risk factors, environmental and occupational exposures.
- Lobby your MEP for safer alternatives to mammography.
- Call on your government representatives and the unions for a review of occupational cancer risks to women.

Reading list

Cancer: 101 to Solutions to a Preventable Epidemic

by Liz Armstrong, Guy Dauncey and Anne Wordsworth.
Published by New Society Publishers.
ISBN 978-0-86571-542-4

Having Faith. An Ecologist's Journey into Motherhood

by Sandra Steingraber.
Published by The Perseus Press.
ISBN 1-903985-14-5

Patient No More: Politics of Breast Cancer

by Sharon Batt.
Published by Scarlet Press (Nov 1994).
ISBN 978-1857270679

Living Downstream

by Sandra Steingraber.
Published by Virago.
ISBN 1-86049-469-2.

Our Stolen Future

by Theo Colborn, Dianne Dumanoski and John Peterson Myers.
Published by Abacus.
ISBN 0-349-10878-1

A Darker Ribbon. Breast Cancer, Women and their Doctors in the Twentieth Century

by Ellen Leopold.
Published by Beacon Press.
ISBN 0-8070-6513-7

The Breast Cancer Prevention Program

By Samuel Epstein and David Steinman.
Published by Macmillan USA.
ISBN 0-02-536192-9

Life's Delicate Balance. Causes and Prevention of Breast Cancer

By Janette D. Sherman.
Published by Taylor and Francis.
ISBN 1-56032-870-3

A History of the Breast

By Marilyn Yalom.
Published by Harper Collins.
ISBN 0-04-440913-3

Not Just a Pretty Face: The Ugly Side of the Beauty Industry

by Stacy Malkan.
Published by New Society Publishers.
ISBN 0865715742

The Toxic Consumer – how to reduce your exposure to everyday toxic chemicals

by Elizabeth Salter Green & Karen Ashton.
Impact Publishing Ltd.
ISBN 1904601421

Chronic Disease and Environmental Hazards. Information for patient organisations and people with a chronic disease.

Published by the Dutch Platform Health and Environment.
Available on the WECF website.

Women and their Toxic World

Published by WECF 2006.

The Secret History of the War on Cancer

by Devra Davis.
Published by Basic Books 1 Nov 2007.
ISBN 978-0465015665

Breast Cancer: an environmental disease

The case for primary prevention. UK Working Group on the Primary Prevention of Breast Cancer. www.nomorebreastcancer.org.uk

References

1. Concise Medical dictionary (Oxford Reference).
2. Recommendations for the Primary Prevention of Cancer. Report of the Ontario Task Force on the Primary Prevention of Cancer. March 1995, page 11.
3. McPherson, Steel and Dixon "Breast cancer – epidemiology, risk factors and genetics" *BMJ* 309 1994, pp 1003-1006.
3. Davis, Davis., et al. Personal care products that contain estrogens or xenoestrogens may increase breast cancer risk. *Medical Hypotheses* 68, 2007. p.756-766
3. Sherman, JD. *Life's Delicate Balance* Published by Taylor and Frances.
3. Brody JG et al. Environmental pollutants and breast cancer. *CANCER Supplement*. 2007; 109: Issue S12. p. 2667-2711.
4. Sasco A. Epidemiology of breast cancer: an environmental disease? *APMIS* 109: 321-32, 2001.
5. Steingraber S.– *Living Downstream* page 241.
6. European Network of Cancer Registries. *Breast Cancer in Europe*. IARC. Dec 2002. www.enrcr.com
6. Breast Cancer Key Statistics. *Cancer Research UK (CRUK)* www.cancerresearchuk.org
7. Breast Cancer Facts. The European Parliamentary Group on Breast Cancer. www.epgbc.org
8. WHO regional Office for Europe. *Europe European Health for All Database (HFA-db)database*. 2007. www.euro.who.int/hfad
9. Coleman, M. P. and the Eurocare working group. *EUROCARE-3 summary: cancer survival in Europe at the end of the 20th century*.
10. CRUK. *Breast Cancer survival statistics*.
11. Verdecchia, A et al and the EUROCARE-4 Working Group. *Recent cancer survival in Europe: a 2000-02 period analysis of EUROCARE-4 data: The Lancet Oncology*: August 21, 2007.
12. Yalon, M. *A History of the Breast*.
13. Toniolo et al 'Prospective study of endogenous oestrogens and breast cancer' *American Journal of Epidemiology* 138 1993 p601.
14. *Breast Cancer and Environmental Risk Factors – The Biology of Breast Cancer* Cornell University – Fact sheet #5 October 1997.
15. *Breast Cancer: An Environmental Disease the case for primary prevention*. www.nomorebreastcancer.org.uk
16. Kortenkamp, A. *Environmental contaminants and breast cancer: the growing concerns about endocrine disrupting chemicals - A briefing paper for WWF*. Oct 2006
17. Steingraber, S. *The Falling Age of Puberty in US girls*. Published by the Breast Cancer Fund. 2007.
18. Guilette, E. et al. *Altered Breast Development in Young Girls from an Agricultural Environment*. *Environmental Health Perspectives (EHP)* Volume 114, No. 3, March 2006.
18. Wang, RY et al. *Effects of Environmental Agents on the Attainment of Puberty: Considerations When Assessing Exposure to Environmental Chemicals in the National Children's Study*. *EHP* Volume 113, No. 8, August 2005
18. Steingraber, S. *The Falling Age of Puberty in US girls*. Published by the Breast Cancer Fund. 2007.
19. FOE Europe-BUND. *Toxic Inheritance* Dec 2005.
20. Natural Resources Defense Council. *Benefits of Breastfeeding*. www.nrdc.org
20. The International baby Food Action Network. *What scientific research says*. www.ibfan.org
21. *Risks, Rights and Regulation Communicating about Risks and Infant Feeding*. World Alliance for Breastfeeding. www.waba.org.my
22. Steingraber, S. *Having Faith* page 48.
23. Steingraber, S. *Having Faith* page 262.
24. Brody, J. et al. *Environmental Factors in Breast Cancer . Environmental Pollutants and Breast Cancer Epidemiologic Studies*. *CANCER Supplement* June 15, 2007. Vol 109. No. 12.
25. Kropp, T. et al. *Body Burden: The Pollution in Newborns - A benchmark investigation of industrial chemicals, pollutants and pesticides in umbilical cord blood*. Environmental Working Group. 2005.
26. Brody, J. et al. *Environmental Factors in Breast Cancer . Environmental Pollutants and Breast Cancer Epidemiologic Studies*. *CANCER Supplement* June 15, 2007. Vol 109. No. 12.
27. *Getting lippy* – published by WEN. www.wen.org.uk
28. Colipa website site- www.colipa.com
29. Brody, J. *Environmental Pollutants and Breast Cancer*. *EHP* Volume 111 No. 8 June 2003
29. Moses M. *Pesticides and Breast Cancer*. *Pesticides News* 22:3-5 (1993).
29. *What substances are banned and authorised in the EU market ?* www.pan-europe.info
29. *What are Endocrine Disruptors?* Paul Goettlich 2001. www.mindfully.org
30. McPherson, K. et al. 'Breast cancer – epidemiology, risk factors and genetics' *BMJ* Vol 321 September 2000. p624.
31. Lichtenstein P et al. *Environmental and heritable factors in the causation of cancer- analyses of cohorts of twins from Sweden, Denmark, and Finland*. *N Engl J Med*. 2000 Jul 13; 343(2):78 85
32. EHEMU Reports. *Interpreting Health Expectations*. *European Health Expectancy Monitoring Unit (EHEMU)* June 2007 www.ehemu.eu
33. Teitelbaum S, et al. *Reported residential pesticide use and breast cancer risk on Long Island, New York*. *American Journal of Epidemiology*; 165: 2007 p. 643-651.
34. Watterson, A. *Environmental and Occupation Carcinogens and Breast Cancer: Public Health Concerns and Public Policy Failures*. Stirling University.
35. Leopold, E. *A Darker ribbon* – page 5.
36. Mayer, M. *Loaded Language. Weighing in on war and other cancer metaphors*. *Collaborations – Research magazine published by the American Association for Cancer Research*. 2006.
37. *Breast Cancer Action Factsheet on Mammography Screening and New Technologies*.
38. Land, C. et al. *Incidence of Female Breast Cancer among Atomic Bomb Survivors, Hiroshima and Nagasaki, 1950-1990*. *Radiat. Res*. 160, 2003 p. 707-717.
39. Esther, M. *Medical radiation exposure and breast cancer risk: Findings from the Breast Cancer Family Registry*. *Int. J. Cancer*: 121, 2007. p386-394.
40. Boetes, C. *Ductal carcinoma in situ and breast MRI*. *The Lancet*, Volume 370, Issue 9586, August 2007, p459-460.
41. *NHS Cancer screening program* - www.cancer-screening.nhs.uk/breastscreen/
42. Messing, K. *Tracking the Invisible: Scientific Indicators of the Health Hazards of Women's Work*. *Health and Work*. *Critical perspectives*. Published by Macmillan Press. ISBN: 0-333-69191-1.
43. Watterson, A. *Implementing pesticide regulations: Gender Differences Silent Invaders*. Published by Zed Books. 2003. p225.
44. *Equal Opportunities Commission*. (2006)
- Facts about women and men in Britain*, 2006.
45. Megdal, S. et al. *Night work and breast cancer risk: A systematic review and meta-analysis*. *European Journal of Cancer* 41 (2005) p. 2023-2032.
46. *Burying the Evidence*, *Hazards* 92, November 2005 www.hazards.org/cancer/report
46. Pollan, M. *High-risk occupations for breast cancer in the Swedish female working population*. *Am J Public Health*. 1999 June; 89(6): p.875-881
46. Brophy, J. et al. *Occupation and breast cancer: a Canadian case-control study*. *Ann N Y Acad Sci*. 2006. 1076: p.765-77
46. *Breast Cancer and Chemicals*. Meriel Watts, for Breast Cancer Network NZ. 2005.
47. *Occupational Cancer/Zero Cancer – A Union Guide to Prevention produced by the International Metalworkers Federation*. 2007.
48. ec.europa.eu/environment/chemicals/reach/reach_intro.htm
49. *WECF REACH Factsheet* - www.wecf.de/cms/download/REACH/090606_REACHfacts_EN.pdf
50. *Local Food Briefing – Sustainable Sustenance; Food transport and the environment*. Published by the Women's Environmental Network. 2004. www.wen.org.uk