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**Response from the Alliance for Cancer Prevention, From Pink to Prevention and Wen (Women’s Environmental Network)**

**Are toxics and harmful substances, including at work, in or near communities or in the home, harming the health and/or wellbeing of women, girls, men and boys and other people in gendered ways? Health impacts could be on fertility, pregnancy health, timing of menarche and menopause, fibroids, sperm quality, mental health, obesity, cancers, among others. Wellbeing could include economic or cultural factors, for example.**

Toxic chemicals and harmful substances affect our human right to a healthy life and endanger current and future generations. They impede access to clean air, safe food and water and so curtail the right to a healthy environment. Combined with socio economic factors impacts can particularly impact marginalised populations, including people living in poverty, indigenous peoples, workers, migrants and women and children.

They are so ubiquitous in many environment , including the first environment the womb, we can be exposed in the home, the workplace and in the wider environment. Sometimes referred to as triple jeopardy. Exposure and its subsequent health effects can impact the health of women\* and girls in a number of particular ways. For many women and those born female there are a lifetime of hormonal changes i.e. puberty, pregnancy, lactating, menstruation and menopause.

Given the differences right across the systems in the body, women and girls are particularly affected because of:

* Different immune systems, means differences right across the systems in the body between males and females.
* Thinner skin
* Detox more slowly, after exposure to toxic chemicals.
* More fat tissue – more storage for fat loving chemicals like endocrine disruptors (EDCs) and pesticides.
* Increased risk of specific hormonal related diseases like breast cancer, endometriosis.
* Occupational roles which are affected by their gender, ie dictated by their socio-economic status. Women often work in poorly paid, poorly regulated workplaces or from home.
* Smaller body size than men. Personal Protection equipment (PPE) not made for women’s bodies nor workstations or work appliances leading to overheating or musculoskeletal impacts.
* Many chemicals not tested for effects on the female body.

Reproductive effects – female dominated workplaces can experience considered exposures and health effects from exposure to toxic chemicals:

* Pregnant women who are exposed to multiple phthalates during pregnancy had an increased risk of preterm birth. Phthalates are chemicals used to carry fragrance in personal care products cleaning products or in plastics. <https://www.niehs.nih.gov/newsreleases/detail/941251>
* Toxic ingredients used in nail salons linked to miscarriage in female workers. <https://www.nytimes.com/2015/05/11/nyregion/nail-salon-workers-in-nyc-face-hazardous-chemicals.html>and <https://www.cahealthynailsalons.org/>
* Sperm counts have more than halved in the last 40 yrs. This has been linked to many of the synthetic chemicals we are exposed to in our daily life in our homes, workplaces and in the wider environment. <https://www.theguardian.com/news/audio/2021/may/03/why-have-sperm-counts-more-than-halved-in-the-past-40-years-podcast>
* Younger women have had the biggest increase their inability to have children. More evidence suggests the risk of miscarriage has been rising among women of all ages.  Shanna Swan. *Count Down.* Scribner: New York. 2020. 53
Rossen, LM. [Trends in Risk of Pregnancy Loss Among US Women, 1990-2011](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5771868/). Paediatr Perinat Epidemiol . 2018 Jan;32(1):19-29.
* Synthetic chemicals used to soften plastics and carry fragrance in personal care products such as perfumes and aftershaves are damaging children’s brain development. These chemicals called phthalates can be found in a vast array of consume products yet aren’t listed on the label. Linked to hyperactivity, ADHD and aggressive behaviour, children whose [mothers had high levels of phthalates](https://ehp.niehs.nih.gov/doi/10.1289/EHP2358) in their urine had three times to the odds of being diagnosed with ADHD. <https://edition.cnn.com/2021/02/20/health/baby-brain-damage-plastic-phthalates-wellness/index.html>

**Breast Cancer**

Fewer than 50% of breast cancer cases can be attributed to officially recognised, ‘established’ and ‘probable’ risk factors which are understood to increase a woman’s susceptibility to breast cancer e.g. late onset of menopause, body weight, diet, late-age pregnancy. Only two risk factors – ionising radiation and inherited genetic damage – are known to directly cause the disease. This leaves 50%-70% of cases with ‘no known cause’. Yet the cancer establishments fail to consider environmental and occupational exposure as a risk factors for breast and other cancers.

* More Than 900 Widely Used Chemicals May Increase Breast Cancer Risk

Ninety percent of the chemicals identified as potential breast carcinogens in a new study are found in everyday products in homes and workplaces. Chemicals that induce mammary tumours in rodents or activate oestrogen or progesterone signalling are likely to increase breast cancer (BC) risk. Identifying chemicals with these activities can prompt steps to protect human health. <https://pubmed.ncbi.nlm.nih.gov/38197648/>

https://insideclimatenews.org/news/10012024/everday-chemicals-breast-cancer-risk/

* Breast cancer an environmental disease - <https://frompinktoprevention.org/wp-content/uploads/2014/10/breast-cancer-an-environmental-disease.pdf>
* State of the evidence eon breast cancer and the environment. - https://ehjournal.biomedcentral.com/articles/10.1186/s12940-017-0287-4.

**Examples of how governments have increased gendered harms of toxics and harmful substances by failing to meet their human rights obligations.**

* Green New Deals proposals and plans have paid little attention to gender equality and until recently there has been insufficient critical engagement with environmental and climate politics by mainstream feminists. As a result of efforts by feminist environmentalists, there is growing scrutiny of the gendered assumptions contained in GND visions and an emerging conversation about how a GND could be good for gender justice if feminist environmental goals were incorporated.
<https://www.wen.org.uk/wp-content/uploads/FEM-GND-POLICY-PAPER-2.pdf>
* Why the European Green New Deal needs ecofeminism - https://eeb.org/wp-content/uploads/2021/07/Report-16-1.pdf

**Have failures to include environmental health in sexual and reproductive health education at schools and in public health eroded progress on gendered harms of toxics and harmful substances and the right to information and quality education? If so, how?**

* Reducing exposure to air pollution for pregnant women, especially during the early and late stages of pregnancy, should be as much as priority in terms of advice as avoiding alcohol and cigarettes.  https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9937639/

**Is uncertainty about potential harms or a lack of information about the impacts of a particular industry or producer of toxics or harmful substances causing harms? If so, how?**

Lack of information and transparency about levels of toxic chemicals found in many single use disposable and reusable period products have the potential to cause harm to the women, girls and people who menstruate and use them on a regular basis.

* Some period pants can contain #PFAS – a forever chemical linked to certain cancers, infertility, developmental disorders, obesity, miscarriage and asthma and allergies. Segedie, L. 65% of [Period Underwear Tested Likely Contaminated with PFAS Chemicals.](https://www.mamavation.com/health/period-underwear-contaminated-pfas-chemicals.html?__cf_chl_jschl_tk__=pmd_436ed2e091d6f5f42fd2f23c269f1972a495b9a6-1629123691-0-gqNtZGzNAg2jcnBszQl6) Mamavation. May 2021
* If the same levels of fragrance found in menstrual products were in

cosmetic products, they would require mandatory labelling.
Marcelis, Q. [Development and application of a novel method to assess exposure levels of sensitizing and irritating substances leaching from menstrual hygiene products.](https://www.sciencedirect.com/science/article/pii/S2405665021000068) Emerging Contaminants 7 (2021) 116e123.

* Researchers estimate a maximum of 17 billion nanoplastic fibres are released per tampon, and an average of 9.4 billion per tampon, working out as 86 trillion fibres over a lifetime’s use. <https://www.mdx.ac.uk/news/2022/01/nanoplastic-fibres-billions-tampons-leonardo-pantoja-munoz>
* Period products have been found to be a considerable source of exposure to Endocrine Disrupting Chemicals (EDCs) such as phthalates, bisphenols and parabens for women. These chemicals are linked to cancer, reproductive and developmental disorders, birth defects, asthma and allergies. This is because the skin of the vagina is extremely absorbent, so the absorption rates are higher.
Gao, Chong-Jing et al. [Feminine Hygiene Products a Neglected Source of Phthalate](https://pubmed.ncbi.nlm.nih.gov/31859481/)

[Exposure in Women](https://pubmed.ncbi.nlm.nih.gov/31859481/). Environ. Sci. Technol. 2020, 54, 930−937
Gao, Chong-Jing. [Phthalates, bisphenols, parabens, and triclocarban in feminine hygiene products from the United States and their implications for human exposure.](https://pubmed.ncbi.nlm.nih.gov/31945693/) Environment International 136 (2020) 105465

* Harmful chemicals are also very prevalent in some female dominated workplaces, such as hairdressers and textile workers, where daily exposure rates can be much higher than those experienced by the general population. This type of exposure has been found to adversely affect both fertility, and maternal and foetal health.
Leung. L., Lavoué, J., Siemiatycki, J., et al. (2023). [Occupational environment and ovarian cancer risk](https://pubmed.ncbi.nlm.nih.gov/37429725/). Occupational and Environmental Medicine, 80(9), 489-497.

Di Renzo, G. C., Conry, J. A., Blake, J., et al. (2015). [International Federation of Gynecology and Obstetrics opinion on reproductive health impacts of exposure to toxic environmental chemicals.](https://pubmed.ncbi.nlm.nih.gov/26433469/) International Journal of Gynaecology and Obstetrics, 131(3), 219-225.

Lack of gender disaggregated data on workers means women can be exposed to harmful chemicals without the any health and safety regs to protect them. This is especially true for pregnant women.

* A Trade Union Congress (TUC) report highlighted that 40% of pregnant workers had not had a health and safety risk assessment. Of the 46% that said they did have risk assessment, 46% said their employer didn’t take the necessary action to reduce the risks identified. [Uncovering the UKs Hidden Crisis in Women’s Workplace Health (bohs.org)](https://www.bohs.org/app/uploads/2023/08/Uncovering-the-UKs-Hidden-Crisis-in-Womens-Workplace-Health.pdf)
* Exposure to harmful chemicals in the semiconductor industry has been identified as an industrial accident when such exposure leads to a congenital disease affecting children born to female semiconductor factory workers. This was in response to research showing women who handle toxic chemicals at work more likely to suffer reproductive difficulties, including miscarriages <https://world.kbs.co.kr/service/news_view.htm?lang=e&Seq_Code=184405>
* Occupationally related infertility has been recognised as an industrial accident and so as an ‘occupational disease’ in South Korea. This has been associated with exposure to harmful solvents and chemicals in the semiconductor industry.  <https://english.hani.co.kr/arti/english_edition/e_business/787230.html>
* Certain occupations, such as those working in microelectronics and pharmaceuticals, (26) can expose women and people who menstruate to chemicals linked with menstrual abnormalities. Kim, I et al. Reproductive Hazards Still Persist in the Microelectronics Industry: [Increased Risk of Spontaneous Abortion and Menstrual Aberration among Female Workers in the Microelectronics Industry in South Korea](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4418732/). PLOS ONE 2015, 10 (5), e0123679.

**Is a lack of (scientific or community-created) information, generally and in specific locations, holding back progress in protecting people from gendered harms from toxics or harmful substances? If so, how?**Lack of gender disaggregated data

Endocrine society - <https://www.endocrine.org/news-and-advocacy/news-room/2024/latest-science-shows-endocrine-disrupting-chemicals-in-pose-health-threats-globally> https://www.endocrine.org/-/media/endocrine/files/advocacy/edc-report2024finalcompressed.pdf

**Are there examples of how the status of individuals of a particular assigned or identified gender intersect with other factors such as income, race, caste, immigration, Indigenous status, migratory status, nationality, membership of a minority group among others, may make them more vulnerable to toxics and harmful substances?**

* Black women may be at more risk of developing or worsening their

asthma than the general population from exposure to toxic

chemicals in period products, personal care and hair products. Raley, E. Chemical [Exposures via Personal Care Products and the Disproportionate](https://pubmed.ncbi.nlm.nih.gov/33975033/)

[Asthma Burden Among the U.S. Black Population](https://pubmed.ncbi.nlm.nih.gov/33975033/). J Allergy Clin Immunol Pract 2021 May

# 8; S2213-2198(21)00570-5.Black women’s reproductive health – report highlighting the urgent need to thoroughly explore the menstrual health experiences amongst Black African and Black African-Caribbean communities<https://tapproject.co.uk/wp-content/uploads/2022/08/a40c0490-2880-4ffc-b231-386415f0bd3f.pdf>

# First Large Study of Hair Relaxers Among Black Women Finds Increased Risk of Uterine Cancer https://www.bumc.bu.edu/camed/2023/10/11/first-large-study-of-hair-relaxers-among-black-women-finds-increased-risk-of-uterine-cancer/

**Is the climate crisis worsening gendered harms from toxics and harmful substances? If so, how?**

* The climate crisis has very gendered impacts especially when it comes to reproductive justice. Please see Wen and Birth Companions report <https://www.wen.org.uk/wp-content/uploads/Reproductive-justice-and-the-climate-emergency-in-the-UK-Full-paper.pdf>
* And editorial in the BMJ - <https://www.bmj.com/content/384/bmj.q354>

Exposure to extreme heat linked to climate change and occupation can double the risk of miscarriage and stillbirth. There are currently no official international guidelines for pregnant women or pregnant workers for working in the heat. Current guidance for hot weather working topping 27.5 C is based on male military workers dating from the 1960s.
<https://pubmed.ncbi.nlm.nih.gov/37814395/>
<https://www.bbc.com/news/world-asia-india-68575943>
* Exposure to natural weather and climate change related disasters has been associated with an increased rate of anxiety, depression and ADHD disorders. Pre-birth exposures for females showed an elevated risk of anxiety and depressive disorders, phobias, GAD, and SAD. For males the elevated risk was for deficit/disruptive behavioural disorders, including ADHD, CD, and ODD.  <https://acamh.onlinelibrary.wiley.com/doi/abs/10.1111/jcpp.13698>
* High levels of [particulate air pollution](https://www.nih.gov/news-events/news-releases/high-levels-particulate-air-pollution-associated-increased-breast-cancer-incidence) associated with increased breast cancer incidence. This is a concern as breast cancer charities encourage women to exercise and yet provide no information on how to do it without increasing their risk in highly polluted areas like cities.

**Is industry action, such as advertising campaigns, lobbying, or corruption worsening gendered harms from toxics and harmful substances? If so, how?**

The world of menstrual products has recently grown with innovations such as reusable menstrual pants and applicators, but it maybe that the rush to innovate has outstripped health and safety considerations.

There are obviously big advantages in reducing menstrual waste by using reusable products, but unfortunately, decades of period product manufacturing adverts about the social construct of ‘menstrual odour’ has resulted in very high consumer concern not warranted by the actual physical presence of an odour. Industry has used this to perpetuate the myths and taboos around menstruation and continues to put additives in the form of environmentally and health harming antimicrobial and anti-odour chemicals into period products.

We question why these are necessary in these products? There are huge gaps in information about how these additives could affect the vagina or the good bacteria that make it the effective self-cleansing organ it is. And the fact they wash out after a few washes. Additives in period products a chemical solution for a social problem.
<https://www.wen.org.uk/2024/01/09/additives-in-period-products-a-chemical-solution-for-a-social-problem/>

**Examples of how community-based organizations or solidarity movements have successfully worked to reduce gendered harms from toxics or harmful substances, through building power, legislation, pressure on companies or community education, for example.**Examples of organisations working to reduce harm while incorporating a gender perspectiveWen – Women’s Environmental Network https://www.wen.org.uk/approach/
https://www.wen.org.uk/our-work/
IPEN - <https://ipen.org/projects/eliminating-lead-paint/ipen-activities>
<https://ipen.org/sites/default/files/documents/ipen-gender-chemicals-report-v1_6dw-en.pdf>
Wecf - <https://www.wecf.org/about-us/>
https://www.wecf.org/brs-gender-and-chemicals/

**Examples of how governments have addressed gendered harms of toxics and harmful substances, through regulations, training of medical and/or other public health practitioners or grantmaking, for example.**

\*Note: we will be discussing toxic chemicals, pesticides, science and research, in relation to women, girls and impacts on females. We aim to use inclusive language but when we refer to research carried out exclusively on women or girls then we will reference it as such. This does not make any assumptions about others who are born female and are impacted by pesticides and we also acknowledge the gaps in research to facilitate greater understanding of how pesticides particularly impact members of the LGBTQ+, trans and gender non-conforming, and non-binary communities.

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