EEB Inputs on Gender and Toxics to inform the preparation of the thematic report of the Special Rapporteur to the Human Rights Council

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Gender and chemicals: eliminating hazardous chemicals from our environments

*Disclaimer: This chapter discusses the differentiated effects of chemical exposure on bodies with female versus male anatomy. When using terms e.g., ‘women’, it should be noted that this describes those with female anatomy because there is a lack of data regarding trans and intersex people in the European Union. We recognise this gap in the research and in using the terms women, men, female, male we make no assumption about the gender identity of individuals and place no normative assumptions on bodies.*

Gender and vulnerability to chemicals

More than 1,5 million people die from exposure to harmful chemicals every year worldwide according to The World Health Organisation (WHO). Due to socio-economic, occupational, biological, and other factors, women suffer a greater health toll from chemicals than men. In European health and environmental policies these differences are generally not sufficiently considered when assessing the risks of chemicals and authorising their use on the European market.

Women’s health is differently impacted by chemicals

Physiological, anatomic, and other biologic differences influence susceptibility to chemicals. For example, different body composition results in a higher capacity of women to accumulate toxic chemicals as women have higher average body fat percentage than men. Women and men have different metabolism and intestinal microbiota and therefore, different capacities to absorb and metabolise chemicals. Differences in reproductive, cardiovascular, and nervous systems result in different health impacts from exposure to chemicals and impacts at different doses. Different hormone systems with higher levels of oestrogens result in higher susceptibility to exposure to xeno-oestrogenes such as plastic ingredients and pesticides. Increased concentrations of natural and synthetic oestrogens are related to breast cancer, endometriosis, and other diseases of the reproductive system. Women experience higher prevalence of disorders such as anaemia and iron deficits, which range between 9% in young women and 70% in adult women, while only 2% of men are affected. Chronic deficiency in iron increases absorption of toxic metals such as lead, cadmium, and mercury. The prevalence of autoimmune diseases and fibromyalgia, related to exposure to environmental pollutants and occupational exposure to chemicals is also much higher in women than in men.[[1]](#footnote-1)

During pregnancy, postpartum and lactation many important physiological and anatomical changes[[2]](#footnote-2) occur in women’s bodies that affect women’s exposure to chemicals.[[3]](#footnote-3) For example, to provide for the demands of the baby, increased inhalation and demand of water and nutrients may increase the woman’s intake of environmental and food pollutants. Metabolic changes experienced during maternity impact the distribution and metabolism of chemicals and may increase internal concentrations of pollutants and therefore the risks posed by hazardous chemicals.

Social factors and gender roles resulting in different health impacts

Many social factors result in a differentiated exposure of women and men to chemicals.

Differentiated occupations result in differentiated exposures to hazardous chemicals. Examples of feminised sectors[[4]](#footnote-4) with high exposure to chemicals include personal care workers, cleaners, health professionals or cashiers (bisphenols form tickets). Many of these sectors also employ a higher proportion of Black women and women of colour, who may be more exposed to hazardous chemicals. For example, data from 2018 identified 60 substances of very high concern (CMR substances, sensitisers, potential endocrine disruptors) among 700 compounds found in the workplace of nail care professionals.[[5]](#footnote-5) These chemicals can be linked to dermatitis, asthma, headaches, or musculo-skeletal disorders in women who make up the vast majority of workers in this sector. Regular users at home should also be careful.

Exposure at home and lifestyle adds to exposure during working shifts, resulting in double exposures. Due to the distribution of roles in society, women are more susceptible than men to be exposed at home to chemicals of concern contained in consumer products, since they most often take care of housework such as cleaning and cooking in heterosexual relationships. In a European Union (EU) member state such as France, women still carry out 72% of the housework.[[6]](#footnote-6)

Cleaning products are one of the main product categories which exposes women to toxic chemicals at home, with potential adverse health effects at short or long term. The European Community Respiratory Health Survey[[7]](#footnote-7) conducted in 9 EU countries explored the long-term consequences of the use of cleaning products. 85% of the 3,298 women taking part in the survey were in charge of cleaning at home, vs 46% of men surveyed. Women using cleaning products at home, or professional cleaners appear to suffer more frequently from asthma, and to have an accelerated decline in lung function.

Pesticides are another common source of exposure of women to toxic chemicals, whether in food or indoor/outdoor air. Data from the French national cohort study on pregnant women and newborns[[8]](#footnote-8) show an important contamination of pregnant women by pyrethroids, a category of pesticides used at home - with pesticides use, living near arable fields, alcohol or fish consumption identified as main sources. It is not surprising that endocrine disruptors, reprotoxic, persistent, carcinogenic substances, and other chemicals of concern have been found in the 4,145 women participants. Another recent study[[9]](#footnote-9) on more than 13,000 women found a correlation between consumption of food containing 25 active substances commonly used in pesticides in the EU (chlorpyrifos, imazalil, malathion, thiabendazole), and postmenopausal breast cancer, especially for overweight and obese women.

Cosmetics are a direct and daily source of exposure of women to chemicals of (potential) concern, with a woman using an average of 16 different cosmetics per day, even at a young age, due to the beauty ideal within our culture that reinforces stereotyped cis white young female role models. In 2017, a study conducted in Germany[[10]](#footnote-10) showed that 85 % of adolescents and young adults use cosmetic products in order to feel more confident. Cosmetic products can contain endocrine disruptors, allergens, etc. Some families of ingredients are known for their adverse effects: parabens, isothiazolinones, phthalates, benzophenones, etc. While the EU cosmetic regulation bans or limits the concentration of a huge number of ingredients of concern, other ingredients of potential concern remain authorised on the market. This is the case for hair dyes. Globally, permanent, or semi-permanent hair dyes have been linked with an increased risk of some cancers, with higher risks for products marketed at Black women in the US[[11]](#footnote-11) – but the regulation of hair dyes within the EU bans a number of problematic substances (180 banned between 2003 and 2016). 70 to 80% of hair dyes in the EU are permanent or semi-permanent.[[12]](#footnote-12) Ingredients of concern, such as resorcinol, an endocrine disruptor, and allergenic ingredients, are still widely used in these products. Another cosmetic product category of specific concern is skin lightening products, which account for more than 26% of violations of the EU cosmetics regulation in RAPEX (EU rapid alert system for dangerous non-food products) for the period 2005-2018.[[13]](#footnote-13) Presence of hydroquinone, mercury or clobetasol propionate were the causes for these violations. This is analysed in Chapter 17 of this report[[14]](#footnote-14).

It is now recognized that socio-economic status is an important determinant of health.[[15]](#footnote-15) Exposure to chemicals of concern, as well as other exposures with impacts on human health, prevail more among populations and individuals with a lower socioeconomic level. And in 2016, women have been identified as one of the groups with a greater risk of poverty or social exclusion than other members of the EU-28 population.[[16]](#footnote-16) A 2018 Eurostat report noted that women aged 18 and over were more at risk from poverty or social exclusion than men (24.3 % compared with 22.4 % in 2016).

Existing risks for women’s health may be numerous, with lots of unknowns, such as for instance that of exposure to nanomaterials for female reproductive health. A recent study commissioned by the EU Observatory on Nanomaterials[[17]](#footnote-17) pointed out a lack of data on nanomaterials’ impacts on female fertility, leading to uncertainties around the potential toxic effects of nanomaterials, over multiple generations, due to first warnings on some nanomaterials’ developmental toxicity, ability to cross the placental barrier and reach the developing foetus, or affect critical organ systems.

Medication, especially during pregnancy, can be a risk factor exposure for women which can have long-term negative consequences on the future child. A number of scandals such as DES (diethylstilbesterol), thalidomide, or more recently Depakine and similar medication containing sodium valproate, shows that risks of medication consumption during pregnancy are not sufficiently taken into account. This may be due to the fact that medication assessment does not sufficiently include a gender dimension and has historically considered adverse effects on men’s health rather than women’s health.

Sex and gender aspects are also widely ignored by toxicological and epidemiological studies as results from an interdisciplinary systematic review[[18]](#footnote-18) by a network on sex/gender in environmental health has demonstrated. In order to ensure the protection of women from the risks posed by hazardous chemicals, toxicological studies should be designed and conducted for all sexes and genders,[[19]](#footnote-19) and endpoints and exposure should include gender considerations.

Gender-blind EU chemical policies

Despite the evidence on the differences regarding vulnerability to hazardous chemicals, EU policies aimed to protect people from the risks posed by hazardous chemicals remain gender blind.

Gender-blind chemical policies: REACH and CLP

In the EU, the Regulation on Classification, Labelling and Packaging (the CLP Regulation[[20]](#footnote-20)) and the Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH Regulation[[21]](#footnote-21)) are key instruments to regulate industrial chemicals. A main goal of both the REACH and the CLP Regulations is to ensure a high level of protection of human health and the environment.

REACH Regulation only mentions women once in its legal text (Art 1.4.1) when it clarifies that it may be necessary to identify different thresholds (Derived Non Effect Levels -DNEL) “for certain vulnerable sub-populations (e.g. children, pregnant women)”.

The CLP Regulation mentions women only in Art 3.7.1. when addressing adverse effects on development of the offspring and the need to provide a hazard warning for pregnant women, and for men and women of reproductive capacity and also when addressing concerns for breastfed babies.

The intention of both regulations is to protect the unborn child and breastfed babies, not to address women’s specific vulnerability to hazardous chemicals, not even during pregnancy or to address gender differences in exposure to chemicals. The words “gender”, “woman”, “girl” cannot be found in either of the legal texts. The word “female” is found when referring to laboratory animal testing. These regulations reify sexist stereotypes as they are only considering women’s role in society as maternal and ignore all other risk factors.

Gender-blind European Green Deal

Considering that the chemicals regulations are gender-blind, the accompanying policies do not make up for this flaw, nor is there any commitment to address the issue in the recently adopted health and environmental related policies of the EU under the European Green Deal.

The Chemical Strategy for Sustainability Towards a Toxic-Free Environment[[22]](#footnote-22) includes the Green Deal commitments to address human and environmental impacts of hazardous chemicals and includes an action plan with 70 measures. None of these actions address specific gender issues. However, the Strategy’s text does widen the concept of what it considers vulnerable populations to “those populations more vulnerable to chemicals exposure” therefore opening the scope to address gender issues, although the only mentions of women refer, once more, to “pregnant and nursing women as typical examples of vulnerable populations (footnote 15).

Recommendations

European Commission and Member States

* Include gender considerations in all policies and regulations addressing the risks posed by chemicals, including those dealing with workers’ protection. This should start by including gender considerations in the upcoming CLP and REACH revisions.
* Review guidance on risk assessment of chemicals for human health to ensure gender considerations are taken into account.
* Address lack of gender-differentiated data by improving the generation of disaggregated sex and gender data, including transgendered people, and ensuring they are duly taken into account at policy development stage.

Academia

* Ensure that biomonitoring, toxicological, epidemiological and public health studies are conducted for men, women, non-binary and other queer groups and corresponding endpoints and cover gender exposure considerations

CSOs

* Environmental organizations working towards the protection of people and the environment from hazardous chemicals and organisations working on gender policies should work together on the topic.

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**For reference** and more information, please consult chapter 15 of the publication “Why the European Green Deal Needs Ecofeminism: <https://eeb.org/library/why-the-european-green-deal-needs-ecofeminism/>

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