



WECF

13 & 14 october 2014

Breastcancer

**women's reproductive health
and endocrine disruptors**

**from science to
prevention**

Presskit

Breast cancer and women’s reproductive health: make prevention a reality – perspectives from American scientists

Breast Cancer and women’s reproductive health disorders: make prevention a reality

Breast cancer is the most frequent cancer among women in the world, and the first cause of cancer death in women in France. On October 13th, WECF France (Women in Europe for a Common Future), a network of European NGOs working towards better health and environment invites American scientists to share their perspectives on breast cancer research and prevention. This event is part of the 7th *Ruban de l’Espoir*, an annual series of events by women organizations dealing with breast cancer.

Exposure to environmental pollutants – such as endocrine disruptors – is one of the factors that contribute to the increasing incidence of breast cancer and women’s reproductive health disorders. In 2011, the Asturias Call to Action which followed the international conference on cancer prevention organized by the World Health Organization stated that *“Prevention of the environmental and occupational exposures that cause cancer must be an integral component of cancer control worldwide”*.

Prevent exposure to toxic contaminants and strengthen the role of health professionals

“Everyday toxic chemicals in air, water, food and consumer products enter our body. Virtually every pregnant woman in the U.S. has at least 43 toxic chemicals in her body”, explains Patrice Sutton, a Research Scientist at the University of California San Francisco (UCSF) Program on Reproductive Health and the Environment (PRHE). She will describe how engaging health professionals, patients, policy makers and researchers in efforts to prevent harmful environmental exposures is a promising pathway to healthy pregnancies, healthy children and healthy future generations.

Janet Ackerman is staff scientist at the *Silent Spring Institute*, Boston (Massachusetts, USA). A study by the Silent Spring Institute released last May in *Environmental Health Perspectives* identified 17 priority chemicals for breast cancer prevention, as well as new exposure biomarkers. Among others, gasoline, vehicle exhausts, flame retardants, hair and textile dyes, paint strippers or water treatment byproducts are common exposure sources of these dirty 17.

WECF’s symposium on Breast cancer, women’s reproductive health and endocrine disruptors is an opportunity to learn about new scientific insights and recommendations towards prevention.



WECF France is part of the international network *Women in Europe for a Common Future*, a network of 150 women’s and environmental organizations working to raise the voice of women towards an ecological transition. Our projects and advocacy activities focus on four issues: water and sanitation, climate change and energy, chemicals and health and sustainable farming; WECF is official partner of UNEP. In France, WECF developed health and environment awareness raising programs Nesting and MaMaisonMaSanté to help parents create a healthy indoor environment for their children. In France, WECF is founding partner of IFSEN an Education and Training Institute on Environmental Health for health professionals created in 2013.

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What is primary prevention of breast cancer all about in 2014?

Breast cancer and women's reproductive health in France and worldwide

In France, according to estimations by the National Cancer Institute¹ 1 in 8 women will experience breast cancer in her life: each year 48 763 women are diagnosed with the disease. With 11 886 victims each year, breast cancer is the first cause of female cancer death. Worldwide, it is the most frequent cancer among women with an estimated 1.67 million new cases diagnosed in 2012, both in more and less developed regions². In France, most new cases are diagnosed for the age group 45-49 years old, with estimations ranging at 5,084 new cases for 100,000 in 2012. The mortality rate keeps increasing as from the age group 65-69 years and the following. Besides breast cancer, more and more women and girls in the world experience reproductive health disorders.

Name of the disease	Trends
Breast cancer	Economic costs in premature deaths and disabilities estimated to 88 billion \$/year ⁴
Polycystic Ovary Syndrome (PCOS)	3 to 15% of women of reproductive age affected
Uterine fibroids	Most common tumour of the female reproductive tract, possibly affecting up to 25-50% of pre-menopausal women
Endometriosis	Occurs in 10-15% of women of reproductive age (15-49) and a minimum of 176 million women worldwide, and in up to 50% of women with infertility and/or chronic pelvic pain
Difficulties in achieving and maintaining pregnancy	Percentage of women who have difficulty in achieving and maintaining pregnancy has increased between 1982 to 2002
Preterm births	In the United States, United Kingdom and Scandinavia, the preterm birth rate has increased by more than 30% since 1981
Puberty and early puberty	Secular trend toward earlier onset puberty among American and European girls

Incidence of breast cancer and noncommunicable diseases (NCDs) are a global threat

Breast cancer is part of NCDs, which WHO considers the first cause of death worldwide, causing 36 million deaths each year⁵, including 29% in people under 60, half of them are women. The four main types of NCDs are cancer, cardiovascular diseases, chronic respiratory diseases and diabetes. In July 2014, the United Nations General Assembly urged its members to adopt "*national targets, global commitments to prevent needless loss of life*" caused by the diseases⁶: was exposure to environmental pollutions meant to be part of the picture?

Prevention of environmental exposures is an integral component of cancer control

This aspect was hardly mentioned in WHO 2013-2018 Action Plan on NCDs⁷. But times are changing: in 2011, UN General Assembly adopted a *Declaration on the Prevention and Control of Non-Communicable Diseases*. The same year, a international high-level meeting hosted by WHO resulted in the Asturias Call to Action on primary prevention of environmental and occupational exposures, with this message: «*Prevention of the environmental and occupational exposures that cause cancer must be an integral component of cancer control worldwide*»⁸. Environmental exposures are mentioned in WHO 2013-2020 Action Plan on NCDs.

¹ [Epidémiologu of Breast Cancer in France](#), Institut National du Cancer, november 2013

² [GLOBOCAN 2012](#), International Agency for Research on Cancer, 2012

³ [State of the Science on Endocrine Disrupting Chemicals 2012](#), UNEP/WHO

⁴ American Cancer Society, 2010. In *New Exposure Biomarkers as Tools for breast Cancer Epidemiology, biomonitoring, and Prevention : A Systematic Approach Based on Animal Evidence*, Ruthann A. Rudel, Janet M. Ackerman, Kathleen Attfield, and Julia Green Brody, *Environmental Health Perspectives*, May 2014.

⁵ [Organisation Mondiale de la Santé, page dédiée aux maladies chroniques](#)

⁶ [68ème Assemblée générale des Nations Unies](#), juillet 2014

⁷ [Plan d'action 2008-2013 pour la Stratégie mondiale de lutte contre les maladies non transmissibles](#)

⁸ [Déclaration des Asturias: Appel à action](#), Conférence internationale sur les déterminants environnementaux et professionnels du cancer: interventions de prévention primaire, 17-18 mars 2011

Evidence of Endocrine Disrupting Chemicals’ (EDCs) impacts on health and the environment

EDCs are invisible and yet we see their impacts on human health and the environment everyday. The hypothesis formulated by the authors of *Our Stolen Future* in 1997 is now something recognized by the international scientific community. In 2013, the collaboration of international scientists specialized in EDCs⁹ resulted in UNEP/WHO *State of the Science on Endocrine Disrupting Chemicals*, which shows an endocrine-related diseases and disorders are on the rise, and estimates that 800 chemicals are known or suspected to interfere with hormone receptors and hormone synthesis or conversion. Most of all, the authors recommend *an important effort on reducing exposures by a variety of mechanisms*¹⁰.

WECF publications on EDCs in French



Statement *EDCs : time to act*, collective position of 27 French civil society organizations on the National EDCs Strategy, June 2014



Menace sur la santé des femmes, Expositions aux perturbateurs endocriniens et dangers pour la santé reproductive féminine, [Editions Yves Michel](#) Adaptation of *Girl, disrupted* (Collaborative on Health and the Environment), october 2012



Le rôle de l'environnement dans le cancer du sein, Politiques et prévention, adaptation of *Breast Cancer and the Environment*, author Helen Lynn, April 2009



Our pocket guides to avoid exposure to chemicals of concern : *Endocrine disruptors, pregnant women’s cosmetics, baby cosmetics, children’s clothes, toys, cleaning products*, updated every year

⁹ Åke Bergman, Stockholm University, Sweden, Niels Erik Skakkebaek, University of Copenhagen, Denmark, Jerrold J. Heindel, National Institute of Environmental Health Sciences.

¹⁰ *State of the Science of Endocrine Disrupting Chemicals, Summary for Decision makers – 2012*, edited by Åke Bergman, Jerrold J. Heindel, Susan Jobling, Karen A. Kidd and R. Thomas Zoeller, WHO/UNEP, 2013, page 3.

Breast cancer primary prevention in practice

Time to act: *Silent Spring Institute* identifies 17 priority chemicals for prevention



Janet Ackerman, staff scientist, *Silent Spring Institute*, Boston (Massachusetts, USA)

Janet Ackerman has a background in biochemistry and biology. She is currently working with collaborators at UC Berkeley and EPA to develop chemical testing methods relevant to breast cancer. Since starting at *Silent Spring Institute* in 2010, she has also worked on projects related to measuring mammary carcinogens in people's bodies, understanding the impact of early life exposures on breast development and breast cancer risk, reducing exposures to endocrine disruptors from food packaging, and characterizing groundwater pollution from endocrine disruptors in wastewater. Before starting at *Silent Spring Institute*, Ackerman contributed to research on pathogens in Boston-area waterways with the Mystic River Watershed Association. She has also investigated breakdown of dry-cleaning solvents in Florida groundwater and strategies for control of invasive plants in California.

In a recent publication, *New Exposure Biomarkers as Tools for Breast Cancer Epidemiology, Biomonitoring, and Prevention: A Systematic Approach Based on Animal Evidence*, in *Environmental Health Perspectives*, Ruthann Rudel, Janet Ackerman, Kathleen Attfield, and Julia G. Brody identified 17 chemicals that should be top targets for breast cancer prevention. These include chemicals in gasoline, diesel and other vehicle exhaust, flame retardants, stain-resistant textiles, paint removers, and disinfection byproducts in drinking water. This study also comprehensively compiled and recommended methods for measuring the presence of these potential breast carcinogens in women's bodies. Biomarkers of exposure to mammary carcinogens include measurements of a chemical itself or its metabolites in blood and urine, as well as other kinds of samples (e.g. breast milk, saliva, hair). These biomarkers can be used now to track exposures and evaluate the best strategies to reduce them. Additionally, breast cancer researchers can apply the some of the biomarkers identified in this study in stored biological samples to accurately measure the exposure of study participants to chemicals of concern long before their diagnoses. The researchers found many ongoing studies that could use the biomarkers to greatly expand knowledge about chemical links to breast cancer.

Table 2 : 17 chemicals top targets for breast cancer prevention by *Silent Spring Institute*

Name of substance	Common sources of exposure
1,3-butadiene	Gasoline, vehicle exhaust, tobacco smoke, heating of some cooking oils
Acrylamide	Cooked food, tobacco smoke, water treatment byproducts, some consumer products
Aromatic amines I: 2,4-toluene diamine (TDA) et toluene diisocyanates (TDI)	Uncured or newly finished polyurethane foam, spray-insulation, sealants and coatings, some breast implants
Aromatic amines II : benzidine and aniline dyes, combustion products, other	Hair and textile dyes; used in the production of paints, printing inks, in the food industry, in liquid crystal displays, and inkjet and laser printers
Benzene	Gasoline, vehicle exhaust, tobacco smoke, solvents
Halogenated organic solvents, e.g. methylee chloride	Dry cleaning, spot remover, glues, degreasers, paint strippers, aerosol propellants, contaminated drinking water; use decreasing with time.
Ethylene oxide ; propylexe oxide	Tobacco smoke, food and medical sterilization, vehicle exhaust, paint
Fame retardants and degradations products : 2,2-bis(bromomethyl)-1,3-propanediol, 2,3-dibromo-1-propanol	Flame retardants primarily used in plastics and foams

Heterocyclic amines	Grilled meat
Hormones and endocrine disruptors ; .g. endogenous and exogenous estrogens and estrogen mimics	Pharmaceutical hormones, consumer products and commercial chemicals with hormonal activity
MX	Water disinfection
Nitro-PAHs, e.g. 1-nitropyrene	Diesel exhaust
Ochratoxin A (OTA)	Mycotoxin in grains, nuts, pork ; also present in moldy environment
PAHs, e.g. benzo[a]pyrène	Vehucle exhaust, tobacco smoke, charred food
PFOA, related compounds	Grease-, water-, and stain-proof coatings, contaminated drinking water
Pharmaceuticals (non-hormonal)	A number of over-the-counter, veterinary, and prescription medicines that induce mammary tumors
Styrene	Building materials and consumer products made from polystyrene, indoor air, cigarette smoke, polystyrene food packaging

The role of health professionals in prevention: lessons learnt from the Programme on Reproductive Health and the Environment, UCSF



Patrice Sutton, Reserach scientist, Programme on Reproductive Health and the Environment, University of California San Francisco


Patrice Sutton, MPH, is a Research Scientist at the University of California San Francisco (UCSF) Program on Reproductive Health and the Environment (PRHE). She has 27 years of experience in occupational and environmental health research, industrial hygiene, public health practice, policy development and community-based advocacy. Currently, she is the Director of PRHE’s Community Outreach and Translation Core, responsible for moving the basic research generated by UCSF’s Pregnancy Exposure to Environmental Chemicals (PEEC) Children’s Center into preventative action in clinical and policy settings. Over the past 6 years at UCSF, Ms. Sutton has built, led and sustained the extensive partnerships that are at the heart of PRHE’s outreach and translation activities, the From Advancing Science to Ensuring Prevention (FASTEP) Alliance, a multi-disciplinary group of clinical and scientific experts and the Navigation Guide Work Group, which now totals 75 national and international scientists, clinicians and community-based partners and patient advocates working to develop an evidence-based methodology to bridge the gap between environmental health science and clinical medicine. Prior to her work at UCSF, Ms. Sutton was a contractor to California's state health department, where she was responsible for conducting all aspects of research investigations spanning a disparate range of issues, including lead poisoning, tuberculosis, asthma, and pesticide-illness. She has extensive experience collaborating with directly-impacted workplace and community-based populations, labor, and governmental and non-governmental organizations in the development of research strategies and policy recommendations to prevent harmful environmental exposures. She has published over 60 peer-reviewed scientific articles, book chapters and government technical reports.

Every day toxic chemicals in our air, water, food, and consumer products enter our bodies. Virtually every pregnant woman in the U.S. has at least 43 toxic chemicals in her body. Exposure to toxic environmental chemicals before and during pregnancy can have harmful health impacts on the infant, child, adult and future generations. Thus, preventing early life exposure to toxic environmental chemicals is an opportunity to secure lasting health benefits.

Prevention can also reap economic benefits. For example, worldwide efforts to remove lead from gasoline have produced health and social benefits estimated at \$2.4 trillion dollars annually. In the

U.S., the benefits of better air quality accrued from programs undertaken in response to the 1990 Clean Air Act will reach almost \$2 trillion dollars in 2020.

In 2013, the *American Congress of Obstetricians and Gynecologists (ACOG)* and the *American Society for Reproductive Medicine (ASRM)* issued a groundbreaking joint Opinion on Toxic Environmental Agents that provided obstetricians with such guidance. The ACOG/ASRM Opinion specifically called for “timely action to identify and reduce exposure to toxic environmental agents while addressing the consequences of such exposure.” The ACOG/ASRM Opinion has made the prevention of patient exposure to toxic environmental chemicals a legitimate area of practice for health professionals in the U.S. and beyond.



In France : IFSEN, an Institute dedicated to the Training of Health professionals in Environmental Health, to which WECF is founding partner

IFSEN is an environmental health institute created in October 2013. The institute proposes health, medical and paramedical professionals a 9-month session of training entitled “Environmental health and health practice”. Monthly sessions of 3 days – a total of 189 hours - on 9 different topics provide health professionals with both basic knowledge as well as specific contents on environmental health and sustainable development. Students receive courses by a range of specialists of each specific topic. Philippe Perrin, «*éco-infirmier*», is the director of IFSEN. The second training session will start in January 2015 in Grenoble area. More information : www.ifsenformations.fr

Making future public health policies prevention-friendly

The long road to primary prevention inclusion in public health policies

Despite a broad scientific consensus, environmental risk factors of diseases are not paid the attention they deserve in public health, environmental health and cancer prevention policies. October is breast cancer awareness month: if secondary prevention – screening – is a common topic in the media, primary prevention of environmental exposures is overlooked. In France, the 3rd Cancer Plan dedicates 1 in 12 priority goals to occupational and environmental cancers prevention¹¹, but said measures only focus on long-known carcinogens. Is there such a huge gap between the scientific community and policy-makers? Will the forthcoming *Conférence environnementale*¹², 3rd Environmental and Health Action Plan and Occupational Health Plan fill the gap? Why not follow the course and scale of anti-tobacco measures? Health impacts of EDCs– including diabetes, obesity, endocrine-related cancers, reproductive health disorders – are just as unacceptable as the 200 daily deaths related to smoking in France. In June 2014, a report commissioned by European NGOs¹³ evaluated that reducing exposures to EDCs would help save up to 31 billion Euros in Europe – as much as 4 billion in France only. Why should we overlook this possibility to save costs at a time of economic constraints?

Lobbies and impacts assessments to prevent action on EDCs...before it ever happens

A number of industrial sectors has raised their concerns that their short-term economic results are threatened by the implementation of prevention policy measures to known EDCs and precaution measures to suspected EDCs. This is an attempt to make short-term profits and immediate growth prevail over other social considerations. European and national policy-makers are subject to a lot of

¹¹ [Objectif 12 : Prévenir les cancers liés au travail et à l'environnement](#), Plan Cancer 2014-2019.

¹² Each year, around september-november, French government organizes an environmental conference, which gathers some key national stakeholders (Agencies, Industry, local authorities, NGOs, trade unions) to set up priorities for coming year. This year environmental health priorities will be discussed during a roundtable planned for end of November.

¹³ Rapport publié en juin 2014 par l'ONG HEAL, [communiqué en français sur le site Nesting de WECF](#)

pressure by a number of stakeholders so that they postpone or even cancel policy action on EDCs, as illustrated in a recent French documentary¹⁴.

Initiatives on EDCs in France and Europe

France has it right: adopting a National Strategy on EDCs in 2013¹⁵ is a good way to influence the contents of the future European criteria and Strategy on EDCs whose adoption was postponed to 2015. In 2014, the European Commission chose to demand an impact assessment at EU level, as a result of increasing pressures to move from the environmental, health and scientific aspects to more economic considerations in deciding to ban/restrict the use of EDCs. Whereas economic, social and health savings of the substitution of EDCs are rather poorly addressed and more difficult to assess, reducing environmental and health protection in this matter to an obstacle to competitiveness is just nonsense. France, Denmark or for example Sweden, are among EU member states which propose solutions to reduce EDCs exposure. In France, the *Conférence environnementale* and its session dedicated to environmental health, planned for end of November, will be an opportunity to make choices which allow for better protection of populations health and ecosystems. A public consultation on the 3rd French Environment and Health Plan is organized until October 17th¹⁶.

WECF awareness raising activities on EDCs and Women's health



Roundtable *EDCs : impacts and mechanisms of action from conception to maturity*, hosted at the French National Parliament, April 2012



Official meeting with representatives of French Ministry of Environment and Ministry of Health to present the 30,000 signatures of the petition «*Stop EDCs in toys*» on Change.org, April 2013



Participation to the gathering of European NGOs members of the *EDC-Free Europe coalition in Brussels* to raise concerns over the delay of EDCs criteria adoption, November 2013,



Roundtable *Gender and occupational cancers* with scientists members of the GISCOP 93, hosted in Palais du Luxembourg, June 2014

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¹⁴ Documentary *Endoc(t)rinement* by Pascale Horel gives an idea of the state of play: <http://www.stephanehorel.fr/doc/endoc/>

¹⁵ *Stratégie nationale Perturbateurs endocriniens*, March 2014, website of French Ministry of Environment

¹⁶ *Consultation sur le PNSE 3, disponible sur le site du Ministère de la Santé.*