

Environmental Chemicals and Breast Cancer – patient care perspectives

CHE WEBINAR

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Timing of Exposure is Important

- Response to chemical exposure differs depending on life stage.
- Exposures during gestation can have irreversible effects, some are not manifest until decades after exposure.
- Other vulnerable periods of development
 - Infancy
 - Childhood
 - Puberty
 - Pregnancy and lactation

Primary prevention of breast cancer

Focus on early developmental exposures and reduction of known hazards

- Radiation
- Pesticides
- Exposure to endocrine disrupting chemicals in food, personal care products
- Dietary exposures
- Exposure to tobacco smoke

Environmental Health History

More than just smoking and amount of exercise

- Housing – where you live, when it was built, what is in the neighborhood
- Water supply
- Diet – what kinds of food do you eat?
- Pesticides used in the home
- Other chemicals used in the home

Environmental health history

A - activities

C – community

H – household

H – hobbies

O – occupation

O – oral behaviors

Pediatric Environmental Health Toolkit, ATSDR, <http://www.atsdr.cdc.gov/emes/training/page13711.html>

Professional Society Statements on EDCs

1. Endocrine Society, first scientific and medical society to take a public stance on EDCs in 2009 with scientific update in 2012.

[Endocrinology, Volume 153, Issue 9, 1 September 2012, Pages 4097–4110.](#)

2. American Congress of Obstetricians and Gynecologists, 2013

ACOG Committee Opinion No. 575, [Fertil and Sterility \(2013\): 100\(4\), pp. 931–934](#)

Endocrine Society, 2009

- Until such time as conclusive scientific evidence exists to either prove or disprove harmful effects of substances, a precautionary approach should be taken in the formulation of EDC policy.
- The federal government should develop a public awareness campaign to inform the public of the risks and potential risks related to the presence of EDCs in the environment and in the food supply.
- The federal government should support further research into EDCs, including the development of high-throughput assays that would allow the testing of many chemicals for EDC activity at a full range of concentrations.

[Endocrinology, Volume 153, Issue 9, 1 September 2012, Pages 4097–4110.](#)

American Congress of Obstetricians and Gynecologists, 2013

“It is important for health care providers to become knowledgeable about toxic environmental agents that are endemic to their specific geographic areas.”

“Reproductive care professionals do not need to be experts in environmental health science to provide useful information to patients and refer patients to appropriate specialists when a hazardous exposure is identified.”

American Public Health Association Breast Cancer and Occupational Exposure 11/18/2014

“In conjunction with increasing research into the connections between breast cancer and work-related exposures, urges the U.S. surgeon general to declare an association between certain chemicals and breast cancer as well as to emphasize the importance of identifying workplace exposures that contribute to breast cancer. Calls on relevant federal agencies, such as the National Institutes of Health, to direct breast cancer research funds toward the study of occupational exposure and risk. Also urges federal agencies to investigate the prevalence of breast cancer among certain groups of workers and raise awareness about safer chemical alternatives and risk reduction.”

Research needs for clinical practice

- Identification of biomarkers of exposure and readily available clinical labs
- Increased understanding of gene-environment interactions – identification of polymorphisms
- Identification of ways to decrease risk in night shift workers
- Improved imaging to decrease radiation exposure in medical imaging
- Improved methods of monitoring high risk occupations
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- What is the best way to communicate findings to providers?

Resources

UCSF Program Reproductive Health and the Environment

- For patients <https://prhe.ucsf.edu/info>
- For Clinicians <https://prhe.ucsf.edu/clinical-practice-resources>

Taking an environmental health history

https://www.atsdr.cdc.gov/emes/health_professionals/pediatrics.html

<https://prhe.ucsf.edu/sites/prhe.ucsf.edu/files/CREM%20Prenatal%20Environmental%20Exposure%20History.pdf>