

September is Children's Environments and Cancer Month

We all aspire to achieve a cancer-free future. We can fulfill that vision, but only with an ambitious expansion of research, practice, and public policy to *prevent* the onset of disease, when possible. We now know there are hazardous chemicals in our workplaces, air, water, food, and the products we use every day. And a growing body of research shows that many of these chemicals are important contributors to cancer and long-term illness.

Children are especially vulnerable to toxic chemicals because of their developing bodies. Their young age also means they have more time to develop diseases with long latency periods, including many cancers that may be triggered by harmful exposures early in life.

- Research shows that virtually every pregnant woman in the US is exposed to many different environmental chemicals. As a result, babies are born pre-polluted since many of these toxic chemicals can cross the placenta.ⁱ
- Pre-natal exposures have been linked to increased risk of different types of cancers later in life. For example, women who were exposed in the womb to DES (diethylstilbestrol), have twice the risk of developing breast cancer after the age of 40 as unexposed women. Exposure to DES in the womb has also been associated with an increased risk of vaginal and cervical cancer.ⁱⁱ Boys exposed to DDT (Dichlorodiphenyltrichloroethane) in the womb show an increased risk of testicular cancer.ⁱⁱⁱ Girls exposed to DDT in the womb also show an increased risk of breast cancer later in life.^{iv}
- Formaldehyde is a known human carcinogen, but can be found in many cosmetic products, including nail care products, hair gel, baby shampoo, and color cosmetics. In these personal care products, formaldehyde can be added directly to the products or is released from preservatives in the products.^{v,vi}
- Pesticides used on crops, lawns and in the home have been associated with increased risk of childhood cancers such as leukemia and lymphoma.^{vii, viii ix x}
- Flame retardants contain a known carcinogenic chemical, yet they are still used in nap mats, car seats, strollers, nursing pillows, furniture, and more.^{xi}
- Exposure to Per- and Polyfluoroalkyl Substances (PFAS) has been shown to cause lowered sex and growth hormones in children and have immune system effects, including decreased response to vaccines in children.^{xii} PFAS have a wide range of uses and are often used as coatings in products that are non-stick, grease and stain-resistant, and waterproof, including food packaging.

We have made great progress researching and identifying dangerous and carcinogenic chemicals. However, there is much more work to be done. Children have the right to live, study, and play safe from harm.

Actions you can take:

- Check out the products you buy. Look to avoid products your kids are likely to come into regular contact with, including avoiding products made from pressed wood, stain-

resistant carpets and upholstery, coated food packaging (microwave popcorn, other greasy foods wrapped in papers, etc.), and wrinkle-free clothing.

- [Mind the Store's Retailer Rankings](#) shows how well popular retailers address concerns about toxic chemicals in consumer products
- [NRDC Consumer Guides](#) show you which products to avoid and what you can do to avoid them
- Tell retailers and manufacturers you want safer products. Ask for products that do not contain PFAS, formaldehyde, flame retardants, and other toxic chemicals.
- Protect your home with good practices. There are small things you can do to reduce exposure to pollutants and toxic chemicals in your home:
 - place rugs in doorways to avoid tracking pollutants into your home and take off your outdoor shoes at the door.
- Download and use the [Detox Me smartphone app](#). This free app walks you through simple, research-based tips on how to reduce your exposure to potentially harmful chemicals where you live and work. It allows you to set goals, keeps track of your progress and sends you reminders.
- Check out this [guide to purchasing safer disposable foodware](#).
- Learn about the products and goods you use every day. The [Environmental Working Group's Consumer Guides](#) provide you with information about your water, food, and many of the consumer products on the market.

ⁱ Di Renzo GC, Conry JA, Blake J, et al. International Federation of Gynecology and Obstetrics opinion on reproductive health impacts of exposure to toxic environmental chemicals. *International Journal of Gynecology & Obstetrics*. 2015;131(3):219-225. doi:10.1016/j.ijgo.2015.09.002

ⁱⁱ Palmer JR. Prenatal Diethylstilbestrol Exposure and Risk of Breast Cancer. *Cancer Epidemiology Biomarkers & Prevention*. 2006;15(8):1509-1514. doi:10.1158/1055-9965.EPI-06-0109

ⁱⁱⁱ Cohn BA, Cirillo PM, Christianson RE. Prenatal DDT Exposure and Testicular Cancer: A Nested Case-Control Study. *Archives of Environmental & Occupational Health*. 2010;65(3):127-134. doi:10.1080/19338241003730887

^{iv} Cohn BA, La Merrill M, Krigbaum NY, et al. DDT Exposure in Utero and Breast Cancer. *The Journal of Clinical Endocrinology & Metabolism*. 2015;100(8):2865-2872. doi:10.1210/jc.2015-1841

^v National Research Council (U.S.), ed. *Review of the Formaldehyde Assessment in the National Toxicology Program 12th Report on Carcinogens*. Washington, D.C: The National Academies Press; 2014.

^{vi} Pierce JS, Abelmann A, Spicer LJ, et al. Characterization of Formaldehyde Exposure Resulting from the Use of Four Professional Hair Straightening Products. *Journal of Occupational and Environmental Hygiene*. 2011;8(11):686-699. doi:10.1080/15459624.2011.626259

^{vii} Koutros S, Silverman DT, Alavanja MC, et al. Occupational exposure to pesticides and bladder cancer risk. *International Journal of Epidemiology*. 2016;45(3):792-805. doi:10.1093/ije/dyv195

^{viii} Jones RR, Barone-Adesi F, Koutros S, et al. Incidence of solid tumours among pesticide applicators exposed to the organophosphate insecticide diazinon in the Agricultural Health Study: an updated analysis. *Occup Environ Med*. 2015;72(7):496. doi:10.1136/oemed-2014-102728

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^x Silver SR, Bertke SJ, Hines CJ, et al. Cancer incidence and metolachlor use in the Agricultural Health Study: An update: Metolachlor use and cancer incidence. *International Journal of Cancer*. 2015;137(11):2630-2643. doi:10.1002/ijc.29621

^{xi} Kim YR et al. 2014. Health consequences of exposure to brominated flame retardants: A systematic review. *Chemosphere* (2014), 106; Consumer Product Safety Commission. CPSC Staff Preliminary Risk Assessment of Flame Retardant (FR) Chemicals in Upholstered Furniture Foam; CPSC: Bethesda, MD, 2006. Gold et al. 1978. Another Flame Retardant, Tris-(1,3-Dichloro-2-Propyl)-Phosphate, and Its Expected Metabolites Are Mutagens. *Science*, 200 (4343): 785-787; Blum et al. 1978. Children absorb Tris-BP flame retardant from sleepwear: Urine contains the mutagenic metabolite, 2,3-dibromopropanol. *Science*. 201 (4360): 1020-3; <https://silentspring.org/resource/table-summary-flame-retardant-uses-health-effects-and-highest-levels-reported>

^{xii} Grandjean et al. 2017. [Serum Vaccine Antibody Concentrations in Adolescents Exposed to Perfluorinated Compounds](#). *Environ Health Perspect*. Jul 26;125(7):077018.