

Chemicals Found in the Body That Are Linked to Serious Health Problems

Findings from a study led by Mount Sinai School of Medicine in New York, in collaboration with the Environmental Working Group and Commonweal. Like most of us, the people tested do not work with chemicals on the job and do not live near an industrial facility.

Health Effect or Body System Affected	Number of chemicals found in 9 people tested that are linked to the listed health impact		
	Average number found in all 9 people	Total found in all 9 people	Range (lowest and highest number found in all 9 people)
cancer	53	76	36 to 65
birth defects / developmental delays	55	79	37 to 68
vision	5	11	4 to 7
hormone system	58	86	40 to 71
stomach or intestines	59	84	41 to 72
kidney	54	80	37 to 67
brain, nervous system	62	94	46 to 73
reproductive system	55	77	37 to 68
lungs/breathing	55	82	38 to 67
skin	56	84	37 to 70
liver	42	69	26 to 54
cardiovascular system or blood	55	82	37 to 68
hearing	34	50	16 to 47
immune system	53	77	35 to 65
male reproductive system	47	70	28 to 60
female reproductive system	42	61	24 to 56

* Some chemicals are associated with multiple health impacts, and appear in multiple categories in this table.

Source: Environmental Working Group compilation; www.ewg.org

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Cancer and the Environment: A Case for the Precautionary Principle

The New York State Breast Cancer Network advocates for the adoption of the Precautionary Principle in guiding public policy and planning in New York State and urges its incorporation into all relevant legislative, administrative, and regulatory activities.

Let's face the alarming facts about cancer incidence rates in New York State. **Our state places third in total cancer incidence rates for men and women and second in breast cancer incidence rates in the US.** Unfortunately, cancer strikes children as well as adults. Incidence rates of all childhood cancers have risen nearly 21% between 1975 and 1998, with genetic factors accounting for only one-fifth of these cases. We cannot blame genetics for causing adult cancers either; to give just one example, genetic mutation accounts for only 5-10% of all breast cancer cases.


Research over the last two decades has revealed that some lifestyle factors and environmental exposures play major roles in causing cancer. **Our best hope for the future health of our children and ourselves lies in cancer prevention** — identifying and eliminating risk factors and exposure to carcinogenic toxins abundant in our air, water, soil, and food supply and now evident in our bodies and in breast milk.


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Why are so many New Yorkers ill?




Every day each of us is exposed to an average of over 2,500 toxic chemicals. We use personal-care products that contain parabens, a chemical linked to cancer. We cook meals in a non-stick pan that leaches carcinogenic C-8 into our food. We consume milk, fish, and meat that contain unacceptable levels of dioxins, mercury, and PCBs. Our lunch is wrapped or stored in plastic that may add endocrine disruptors into our already contaminated food.


 **On our way out of the house**, we walk across the lawn, which has been treated with weed killer 2,4-D, a pesticide that has been linked to non-Hodgkin's lymphoma (another cancer increasing in New York State). By the time we arrive at work or school, we inhale a variety of toxins — cleaning solvents, emissions from copying machines, formaldehyde that is “out-gassing” from new carpeting and more pesticides used by the exterminator. When we pick up our dry-cleaning after work, it will contain “perc” (perchloroethylene), a chemical that has been linked to several types of cancer. After months and years of daily exposure to chemicals that persist in the environment, is it a surprise that our bodies bear the burden of these chemicals?


 **The future holds even less promise** if we are to be exposed to more toxins. Indeed, the amounts of pesticides alone used in the US increased 1 billion pounds from 1996 to 1999, from 4.6 to 5.6 billion pounds.


 **As a result, every human being currently bears a chemical body burden** — the sum of chemicals detected in a person's blood, urine, and tissue samples at any given time. Our child's first environment — the womb — is unfairly subjected to this chemical body burden; researchers have discovered that toxic chemicals can cross placenta, enter amniotic fluid, and bind to fetal DNA, which may induce cancer and illness later in life.

Nursing infants are also exposed to toxic chemicals; breast milk, the best source of immunity boosting, has been found to contain toxins such as PCBs, dioxins, solvents, flame retardants, and pesticides, to name just a few. A recent study on body burden showed 167 industrial compounds in the blood and urine of nine volunteers (none of whom lived or worked near an industrial facility); 76 of the chemicals found in these people were linked to cancer in humans or animals.

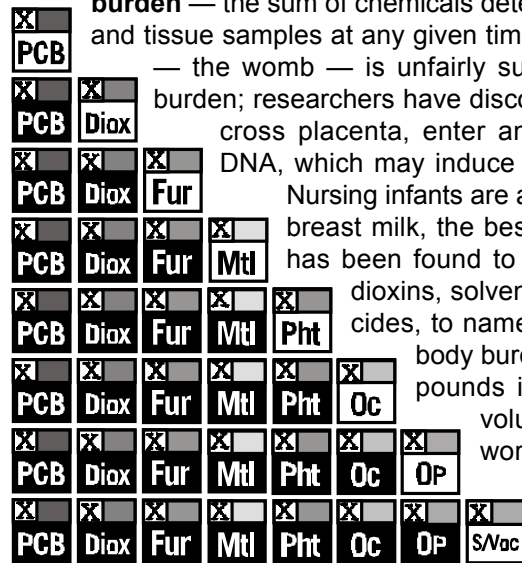
 **We must support continuing research** on toxic exposures and the links to cancer in order to prevent future harm to human and environmental health, but we must also reduce or eliminate potential or probable causes of cancer now by implementing the Precautionary Principle as public policy. That principle, simply stated, specifies that when an activity raises the possibility of threats of harm to human health and the environment, precautionary measures should be taken, even if some cause-and-effect relationships are not established with absolute scientific certainty.









 **Historically, we can learn a lesson** by observing the effects of lead exposure and the costs to society before lead was removed from gasoline. Previously, generations of children suffered from developmental problems because of exposure to lead. When the government finally acted in 1973, initiating a 23-year phase-out of lead from gasoline, lead levels in the air during those years dropped 80%. If the Precautionary Principle had been in place even 50 years ago, the lives of many could have been saved and improved; huge health care costs would have been reduced or not incurred at all.

 **Many of us, as children, were taught the adage "Better safe than sorry" and later "First do no harm."** These basic, yet profound, common-sense sentiments are what the Precautionary Principle is all about. It presents a comprehensive way to control and monitor harmful practices that endanger human health, including those that are currently without oversight or regulation, and represents a giant step toward the prevention of cancer and all illnesses. Human suffering from cancer and other diseases, huge health care costs, and lost productivity have proven to be an enormous burden on our society. Prevention of disease is the only real cure.

 **Elected officials have the responsibility to take action** to integrate prevention into future policy and planning to ensure the health of all New Yorkers. The New York State Breast Cancer Network enthusiastically encourages the introduction of meaningful legislation to accomplish this end.

Possible Body Burden



 PCBs Cause cancer and nervous system problems.	 Dioxins Cause cancer in humans. Very toxic to developing endocrine (hormone) system.	 Furans Expected to cause cancer in humans. Very toxic to developing endocrine (hormone) system.	 Metals Cause lowered I.Q., developmental delays, behavioral disorders and cancers at doses found in the environment.	 Phthalates Cause birth defects of male reproductive organs. Found in a wide range of cosmetic and personal care products.	 Organochlorine Insecticides Largely banned in the U.S. Cause cancer and numerous reproductive effects.	 Organophosphate Insecticide Metabolites Potent nervous system toxicants. Most common source of exposure is residues in foods. Recently banned from indoor uses.	 Volatile and Semi-Volatile Organic Chemicals Industrial solvents and gasoline ingredients like xylene and ethyl benzene. Toxic to nervous system, some heavily used SVOCs cause cancer.
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Key to Toxic Icons