

Policy Focus

Chemicals and Cancer

RECIPES FOR RATIONAL GOVERNMENT FROM THE INDEPENDENT WOMEN'S FORUM

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April 2013

Volume 3, Number 4

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WHAT YOU NEED TO KNOW

Americans are understandably concerned about the causes of cancer, and about whether exposure to common chemicals increases their risks. While [anti-chemical activists](#) seek to alarm the public regarding cancer risks from common chemicals, the best available data indicate that such risks are extremely low. As a result, there is little reason to believe that the more restrictive chemical regulations advanced by those activists would reduce cancer rates. Moreover, such regulations may undermine public health by eliminating many valuable and even life-saving products.

If everyday exposure to common chemicals were a significant cause of cancer, we would expect rates to go up as we used more and more chemicals. However, the National Cancer Institute (NCI) reports that since 1975 cancer incidence has continued to decline among men and declined for women until 2006, after which rates stabilized.

Research suggests that most cancers are caused by tobacco use, diet, infections, and genetics. Although, long-term, relatively high level exposures to certain chemicals may pose cancer risks, there is little evidence demonstrating that the relatively low-level chemical exposures from consumer products pose significant risks.

Alarmism, however, about the relationship between cancer and chemicals can result in real harm: It distracts the public and researchers from focusing on the most significant cancer risks and encourages regulators to adopt rules that make our products more costly and in some cases less safe, while yielding little meaningful health benefits.

WHY YOU SHOULD CARE

Hype about chemicals fosters misguided priorities and an unhealthy culture of fear about common, safe products.

- **Chemical Alarmism Shifts Focus Away from Real Risks:** As individuals focus on reducing chemical use as the key to cancer prevention, they may avoid taking actions that really matter, such as quitting smoking or improving their diets.
- **Misinformation Diverts Valuable Research Funding:** Alarmism about chemicals already studied and shown to be safe as commonly used diverts funds from research to find a cancer cure and address the real contributors to cancer.
- **Hype Leads to Counter-Productive Regulations:** Baseless fear of chemicals leads lawmakers to pass regulations that undermine freedom, health, and safety. For example, because of misplaced fears about pesticides, few products are available to control insect-borne diseases. Similarly, proposed bans on the chemical Bisphenol A, which makes resins to line food containers, could lead to the development of dangerous pathogens in our food supply.
- **Living in Needless Fear Isn't Healthy:** Toxicologist [Dr. Joe Schwartz](#) explains: “The stress caused to people by the constant harangue takes a toll on health.”
Americans deserve straight facts—not alarmism—about what affects, and doesn't affect, our health.

MORE INFORMATION

What Causes Cancer?

Cancer can emerge when abnormal cells develop and spread throughout the body. It tends to be a disease related to aging, with risks increasing with every year of life. It may be because our bodies grow weak causing our DNA repair systems to fail more often, because mutations accumulate, or for some other reason. Cancers during childhood and youth are relatively rare; some are associated with genetic factors, and for some the causes are unexplained.

Forces outside the body, as well as genetics, contribute to the risk of cancer. [Researchers](#) believe most cancers are the result of “environmental factors,” which includes everything outside genetics.

When the public hears the term “environmental factors,” they often mistakenly assume that this means pollutants and chemicals that people encounter. However, when researchers mention “environmental factors,” they are referring to everything other than genetics. Trace chemicals in consumer products are included in this category, but they play a small and questionable role in cancer rates.

So what are the major “environmental factors”? In their landmark 1981 study of the issue, scientists Richard Doll and Richard Peto [explained](#) that more than 80 percent of cancers are caused by diet (36 percent), tobacco use (30 percent), infections (10

percent), and reproductive behavior (7 percent). Doll and Peto estimated that cancers related to occupational exposure to chemicals, which tends to be long-term and relatively high level, account for about 4 percent of cancers. They also estimated that all pollution—air, water, trace chemicals on food and in consumer products—might produce as much as 2 percent of all cancers.

The President's Panel on Cancer 2010 report argues that the Doll and Peto data "are woefully out of date, given our current understanding of cancer initiation as a complex multifactorial, multistage process." But independent researchers disagree, including the American Cancer Society's Dr. Michael Thun, who challenged the Panel's conclusion in *Scientific American*, asking: "On what grounds do you know it's being grossly underestimated? It's a possibility, but many hypotheses have been proposed, and unless you have real evidence, you can't say that it is."

Researchers Preetha Anand *et al.* update Doll and Peto's data in a study published in the journal *Pharmaceutical Research* in September 2008, but echo their overall findings. This study suggests that at least 85 percent of cancers result from tobacco (30-35 percent), diet (30-35 percent), obesity (10 percent), infections (15-20 percent), and genetics (5-10 percent). The remaining 15 percent or less is attributed to "other" factors, including alcohol, radiation, stress, physical activity, and environmental pollutants.

Although these researchers don't provide an estimate for cancers from "environmental pollutants," they suggest it's quite low given that their estimates for alcohol (6-28 percent) and radiation (up to 10 percent) alone could easily consume the entire 15 percent in the "other" category. Moreover, the "environmental pollution" category, albeit small in terms of cancer, describes a wide range of exposures around the world, including people in developing nations whose air quality may be very poor because they rely on burning of wood or dug for cooking and heat.

The point, however, is not that we can come up with exact numbers for each category, but that the data indicate where the greatest risks lie, and those greatest risks are with tobacco use and dietary issues, not with the use of common chemicals.

Have Cancer Rates Increased with Chemical Use?

If chemical use were a leading contributor to cancer, one would expect rates to increase along with our use of chemicals. However, as developed nations have increased our reliance on man-made chemicals, cancer rates have declined. In its "Annual Report to the Nation on the Status of Cancer," published in the February 2013 *Journal of the National Cancer Institute*, the National Cancer Institute (NCI) reports that since 1975 cancer incidence has continued to decline among men

and declined for women until 2006, after which rates stabilized.

Likewise, NCI reports that cancer rates among children “have continued to decrease since 1975, although the decrease was briefly interrupted from 1998 to 2003.” Short-term increases of childhood cancer are hard to explain, but because childhood cancer is rare, even relatively small variations can shift trends for a few years.

Some such increases may be related to improved detection and better reporting of cases. For example, while environmental activists claimed chemicals were to blame for an increase in childhood brain cancer in the 1990s, the [NCI maintained](#) in a June 16, 1999 article in the *Journal of the National Cancer Institute* that rates were actually stable, but new detection technology made it possible to discover more cases. Nonetheless, the causes of childhood cancers remain unknown and complex, NCI notes, in its latest report. Activists may try to connect childhood cancer to chemicals, but there isn’t much evidence for that conclusion.

Defining a “Carcinogen”

Government and scientific agency listings of chemical carcinogens are not particularly relevant to the real risks associated with everyday use and exposure to those substances. Rather government’s labeling is based on whether a chemical theoretically could contribute to cancer risks, assuming high-level, long term exposures.

For example, many chemicals are labeled “carcinogenic” by government agencies simply because they cause tumors when rodents are injected with extremely concentrated, high levels of these chemicals. But these high doses are of limited relevance to the trace exposures that humans experience. Moreover, inter-species extrapolations are of limited value because of biological differences. In addition, rodents are highly susceptible to cancer in general, and lab animals are bred to be even more susceptible.

In fact, even healthy foods, such as broccoli, nuts, apples, bananas, carrots, celery, coffee, lettuce, orange juice, peas, potatoes, and tomatoes give rodents cancer, according the National Academy of Sciences report, *Carcinogens and Anti-Carcinogens in the Human Diet*. Not surprisingly, it’s the circumstance and extent of exposure to a substance that is often the key factor in whether something is harmless or an actual threat.

Many Americans are alarmed to learn that environmental chemicals are frequently present in people’s blood and urine. Yet as the CDC explains in its *Fourth National Report on Human Exposure to Environmental Chemicals*: “The presence of an environmental chemical in people’s blood or urine does not mean that it will cause effects or disease.” The real question is: Is exposure from consumer products high enough to raise concerns about cancer? Researchers from the Agency for Toxic Substances and Disease Registry, explain

in a [booklet on cancer](#) that the trace exposures consumers experience everyday “are usually too small to cause health problems.”

The Costs of Alarmism

Americans may believe that there is no harm in trying to limit chemical use or in dedicating more resources to exploring even tenuous common chemical-cancer links. Yet given that resources are finite, and that common chemicals actually do play positive roles in our lives, there are real costs to this alarmism.

For example, a recent National Institute of Environmental Health Sciences (NIEH) report titled “*Breast Cancer and The Environment: Prioritizing Prevention*,” suggested that the federal government reprioritize cancer research funding to “intensify study of chemical and physical factors.” It echoed the President’s Panel on Cancer 2010 report, which called for a greater focus on chemicals. Yet the focus on chemicals in consumer products as a significant environmental cancer cause is unlikely to help anyone. In fact, by taking research dollars away from finding a cure or isolating the real drivers of cancer, it may set back life-saving cancer research.

Fear of cancer is also used as a pretext to advance regulations that limit the use of chemicals in common products and processes. These unnecessary regulations come with serious costs, as they make products needlessly expensive, less effective, and even less safe. For example, misplaced fears about pesticides mean that fewer products are available to control insect-borne diseases. Proposed bans

on the chemical Bisphenol A, which makes resins to line food containers, could lead to the development of dangerous pathogens in our food supply.

Americans are too often bombarded with warnings about threats to their family’s health. This creates needless stress and worry, and makes it difficult to prioritize which warnings one should take seriously. Americans deserve the about the causes of cancer rather than counter-productive alarmism.

What about Cancer Clusters?

Many people claim that chemicals are to blame for *cancer clusters*—geographic areas where cancer rates exceed (or appear to exceed) that of the general population, yet it is nearly impossible to pin down the causes of such clusters. In 1999, the Centers for Disease Control and Prevention reported in the *American Journal of Epidemiology* on 22 years of studies that covered clusters in 29 states and 5 foreign countries. They could not establish a clear cause for any cluster.

While it is easy to assume that there must be environmental explanations for cancer clusters, many occur by mere chance. In fact, as Raymond R. Neutra of the California Department of Health Services explains in a 1996 *Scientific American* report (“Why Community Cancer Clusters Are Often Ignored,” vol. 275, no. 3), we can expect about 5,000 such random cancer clusters to exist in any given decade in United States merely as a result of the natural variations in the distribution of any event.

It’s important for research to continue to monitor the existence of cancer clusters, however Americans should not assume that there is a cause or explanation for all variations in cancer rates.

WHAT YOU CAN DO

You can learn more about how everyday interaction with chemicals doesn't pose a significant risk and spread the word that there is no reason to live in fear.

- **Get Informed:** To learn more visit:
 - [Independent Women's Forum](#)
 - [SafeChemicalPolicy.org](#)
 - [CultureofAlarmism.com](#)
- **Talk to Your Friends:** Help your friends and family understand these important issues. Tell them about what's going on and encourage them to join you in getting involved.

● **Become a Leader in the Community:**

Get a group together each month to talk about a political/policy issue (it will be fun!). Write a letter to the editor. Show up at local government meetings and make your opinions known. Go to rallies. Better yet, organize rallies! A few motivated people can change the world.

- **Remain Engaged:** Too many good citizens see election time as the only time they need to pay attention to politics. We need everyone to pay attention and hold elected officials accountable. Let your Representatives know your opinions. After all, they are supposed to work for you!

ABOUT THE INDEPENDENT WOMEN'S FORUM

The Independent Women's Forum (IWF) is dedicated to building support for free markets, limited government, and individual responsibility.

IWF, a non-partisan, 501(c)(3) research and educational institution, seeks to combat the too-common presumption that women want and benefit from big government, and build awareness of the ways that women are better served by greater economic freedom. By aggressively seeking earned media, providing easy-to-read, timely publications and commentary, and reaching out to the public, we seek to cultivate support for these important principles and encourage women to join us in working to return the country to limited, Constitutional government.

We rely on the support of people like you! Please visit us on our website www.iwf.org to get more information and consider making a donation to IWF.

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