

Off Target in the War on Cancer

By Devra Davis
Sunday, November 4, 2007; B01

We've been fighting the war on cancer for almost four decades now, since [President Richard M. Nixon](#) officially launched it in 1971. It's time to admit that our efforts have often targeted the wrong enemies and used the wrong weapons.

Throughout the industrial world, the war on cancer remains focused on commercially fueled efforts to develop drugs and technologies that can find and treat the disease -- to the tune of more than \$100 billion a year in the United States alone. Meanwhile, the struggle basically ignores most of the things known to cause cancer, such as tobacco, radiation, sunlight, benzene, asbestos, solvents, and some drugs and hormones. Even now, modern cancer-causing agents such as gasoline exhaust, pesticides and other air pollutants are simply deemed the inevitable price of progress.

They're not. Scientists understand that most cancer is not born but made. Although identical twins start life with amazingly similar genetic material, as adults they do not develop the same cancers. As with most of us, where they live and work and the habits that they develop do more to determine their health than their genes do. Americans in their 20s today carry around in their bodies levels of some chemicals that can impair their ability to produce healthy children -- and increase the chances that those children will develop cancer.

Consider the icon of American cancer, the cyclist [Lance Armstrong](#). He's hardly alone as an inspiring younger survivor. Of the 10 million American cancer survivors who are alive five years after their diagnosis, about one in 10 is younger than 40. Could exposure to radiation and obesity-promoting chemicals help explain why, according to a study in the [Journal of the National Cancer Institute](#), the rates of the testicular cancer that Armstrong developed nearly doubled in most industrialized countries in the past three decades? Should we wait to find out?

I'm calling for prudence and prevention, not panic. The [Centers for Disease Control and Prevention](#) and the [Environmental Working Group](#) have confirmed that American children are being born with dozens of chemicals in their bodies that did not exist just two decades earlier, including toxic flame retardants from fabrics. A new study by Barbara Cohn and other scientists at the Public Health Institute in [Berkeley, Calif.](#), finds that girls exposed to elevated levels of the pesticide DDT before age 14 are five times more likely to develop breast cancer when they reach middle age.

Yes, the war has had some important successes: Cancer deaths in the United States are finally dropping, chiefly because of badly belated (and still poorly supported) efforts to curb smoking, reductions in the levels of some pollutants and significant advances in the

control of cancers of the breast, colon, prostate and cervix. But new cases of cancer *not* linked to smoking or aging are on the rise, such as cancer in children and non-Hodgkin lymphoma in people older than 55. And according to the CDC, cancer is the No. 2 cause of death for children and middle-age people, second only to accidents. The longer view is troubling: The National Cancer Institute reports that from 1950 to 2001, the number of cancers of the bone marrow, the bladder and the liver doubled.

Both public health and social justice demand that we focus more on the things that cause cancer. For example, blacks and other minorities still die of many forms of cancer more often than do whites. Could this be tied to the fact that so many African Americans hold blue-collar jobs, which may bring them into contact with carcinogens? Or because poor blacks are more likely to live in polluted neighborhoods, or eat diets higher in cancer-causing fats? We can't say, and we're not even trying to find out. The vast cancer-fighting enterprise has decidedly different priorities.

Even our triumphs in battling cancer can leave us with tragic shortcomings. Consider one irony of oncology: Many of the agents that can so effectively rout cancer early in life, such as chemotherapy and radiation, can also increase the risks of falling prey to other forms of the disease later on. According to a study in the *Journal of the Royal Society of Medicine*, one out of every three girls treated with radiation before age 16 to arrest Hodgkin's disease -- a cancer of the lymphatic system that often occurs in young people - - will develop breast cancer by age 40. Of course, many cancers in children and young adults might have been avoided in the first place without earlier exposure to cancer-causing agents.

We also need to weigh the downsides of the way we use radiation today to find problems in the healthy public, especially the young. A consensus statement from the American College of Radiology notes that "the current annual collective dose estimate from medical exposure in the United States has been calculated as roughly equivalent to the total worldwide collective dose generated by the nuclear catastrophe at [Chernobyl](#)."

Most parents (and many emergency-medicine physicians) don't know that a single CT scan of a child's head can deliver the same radioactive dose as that in 200 to 6,000 chest X-rays. Some pediatric experts recommend that CT scans of children be restricted to medical emergencies and kept at doses as low as reasonably possible. Even so, according to the American College of Radiology, the use of CT scans has jumped tenfold in the past decade -- a change that stems from the profitability and growth of "defensive medicine," and one that has not resulted in any improvement in our overall health that I can discern.

The [Food and Drug Administration](#), the [Consumer Product Safety Commission](#) and the [Environmental Protection Agency](#) often lack the authority and resources to monitor and control tobacco smoke, asbestos, tanning salons and the cancer-causing agents in food, water and the everyday products we use on our bodies and in our homes. Under antiquated laws, chemical and radiation hazards are examined one at a time, if at all. Of the nearly 80,000 chemicals regularly bought and sold today, according to the [National](#)

[Academy of Sciences](#), fewer than 10 percent have been tested for their capacity to cause cancer or do other damage.

As a result of these policy failures, the United States often stands alone -- and not in a good way. Unlike [Italy](#), [Ireland](#), [France](#), [Albania](#), [Argentina](#), [Uruguay](#) and many other countries, the United States has failed to ban smoking in public spaces nationwide. Unlike European children, American kids are exposed to small levels of known carcinogens in their food, air, shampoos, bubble baths and skin creams -- such as the clear, colorless liquid known as "1, 4-dioxane," a common contaminant that causes cancer in animals and has been banned from cosmetics by the [European Union](#).

In fact, our growing dependence on many unstudied modern conveniences makes us the subjects of vast, uncontrolled experiments to which none of us ever consents. Consider cellphones, whose long-term health consequences could prove disastrous. Experimental findings show that cellphone radiation damages living cells and can penetrate the skull. Widely publicized research on cellphone use in the early 1990s indicates that the phones are safe, but those studies did not include any children and excluded all business users. While exposure levels are much lower on newer phones, the effects of gadgets that have increasingly become part of our children's lives remain unstudied.

That's unwise. Recent reports from [Sweden](#) and France, published in the journal *Occupational and Environmental Medicine*, reveal that adults who have used cellphones for 10 years or more have twice as much brain cancer on the side of their heads most frequently exposed to the phone. The Swiss and Chinese governments have set official exposure limits for cellphone microwave emissions that are 500 times lower than those the United States mandates. In [Bangalore](#), [India](#), it is illegal to sell a cellphone to a child younger than 16. As a basic precaution, people should use the phones with earpieces or speakers, and young children should not use them at all -- consistent with warnings recently issued by the German and British governments. Because brain cancer can take 10 years or longer to develop, national statistics cannot be expected to show the health impact of today's skyrocketing cellphone use. But we shouldn't wait for the cases to roll in before acting.

True, there are many uncertainties about environmental cancer hazards. But these doubts should not be confused with proof that environmental factors are harmless. The confusion arises for three different reasons. First, studying the ways that our surroundings affect our cancers is genuinely hard. Second, public and private funding levels for research and control of environmental cancer are scandalously low. Finally, those who profit from the continued use of some risky technologies have devised well-financed efforts to sow doubt about many modern hazards, taking their cue from the machinations of the tobacco industry. The best crafted public relations campaigns masquerade as independent scientific information from unimpeachable authorities.

No matter how much our efforts to treat cancer may advance, the best way to reduce cancer's toll is to keep people from getting it. We need to join the rest of the industrialized world by issuing a national ban on asbestos and forbidding smoking in the

workplace and other public spaces. We must reduce the hazards faced by those working to build our homes, transport our goods and make the products we consume. We should restrict CT scans of children to medical emergencies, limit the use of diagnostic radiation in general, ban young children from using cellphones and keep the rest of us from using tanning beds. And we must recognize that pollutants do not need passports. Controlling cancer, like controlling global warming, can take place only on an international scale. We can -- and must -- do better.

Devra Davis, a professor at the [University of Pittsburgh's Graduate School of Public Health](#), directs the Center for Environmental Oncology. Her most recent book is "The Secret History of the War on Cancer."