

The Value of Testing

By Barbara Rubin*

“You’ve come a long way, baby!”

This was the slogan welcoming women to the world of equal rights. The right to develop lung cancer, COPD, cardiovascular damage and, well, you get the idea. The media now describes, in considerable detail, the manner in which environmental contaminants, including secondhand smoke, can harm individuals. Over 35 million Americans have lung diseases, many of which demonstrate basic cause-and-effect relationships with the environment. Asbestos causes mesothelioma, and diesel particulates can provoke extrinsic asthma. Toxic substances entering the body cause inflammation, a source of tissue damage now blamed for the development of many ailments including numerous forms of cancer and autoimmune diseases. From migraines to multiple sclerosis, the evidence offers every indication that the environment triggers disease--and death-- for tens of millions among us.

The economic costs of all this suffering are quickly tallied. Does the financial downside of illness and loss of life outweigh the economic upside of selling products that contain toxic ingredients?

The Government Accounting Office (GAO), notes that a single human life can be valued, variably, from a maximum of 12 million dollars to a "discounted" level of 1.1 million. The precise figure used depends upon the particular cost-

benefit ratio being calculated for pending legislation, such as the removal of arsenic from drinking water. Apparently, citizens over seventy are a good buy since they can be discounted a full 37% over their younger counterparts. One has to wonder if the Bill of Rights only offers 43% of the right to liberty and the pursuit of happiness for those who have already exercised their right to life for a longer period of time than their fellow citizens.

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Paradoxically, anyone actually claiming environmental illness is subsequently diagnosed with a social disease--that of potential legal liability. Your symptoms, from those immediately resulting from toxicity to the cascade of physiological events which take place post-poisoning, are suddenly removed from the rational world of cause-and-effect. You are now identified

as having a defective physiology which limits your performance, not just as a disabled worker, but even more unforgivably, as a failed consumer. For some reason, your body has failed to adapt to the myriad combinations of tens of thousands of synthetic chemicals recently introduced into the world. This turns your environmentally-induced symptom constellation into an "idiopathic" illness. It is now possible to blame it on the environment without actually implicating... the environment!

You are then urged to avoid whatever unspecified substances are making you sick so you may continue your journey to the Elysian Fields. Unfortunately, that particular locale, out of Greek mythology, is most likely listed by the EPA today as a Brownfield. How does one turn the mythological status of environmental illness into fact, particularly when your life and the lives of countless others may depend upon it? That is where the science of toxicology must be introduced into our daily lives. The phrase, "Please pass the butter," is destined to become the phrase, "Honey, where did you put the dosimeter tube?"

We are exposed to thousands of chemicals, largely untested for their effects upon our complex physiological systems, as we encounter them singly and in combinations that result in unanticipated, synergistic effects. In the European Union, some degree of remedial policy setting is taking place under the REACH legislation. This is destined to make manufacturers substitute less toxic chemicals for known hazards, while also demanding more pre-market testing of chemicals in general. However, residents within the EU have an advantage over U.S. citizens. They are allowed to know much of what is in their consumer goods because of mandates regarding labeling. In the U.S., proprietary ingredients are kept from consumers under trade secret protections. We even have a class of products that doesn't require disclosure of ingredients to our own regulatory agencies: cosmetics.

Depending upon where you live and work, your landlord and your employer may have no duty to let you know that toxic chemicals have been introduced into your air-space through their use of a service or purchase of some product. Testing our surroundings is a novel and intimidating concept to most people. The very idea that we may not be safe in our own homes, schools, and offices is a frightening one, even when one obtains appropriate professional guidance.

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Welcome to the world of applied toxicology.

Laboratories can analyze samples of air, soil, water, fabrics, or other porous materials and swipes of surfaces for myriad contaminants that can affect your health. A trip to the doctor for an inhaler won't help you if your asthma attacks are caused by fumes from uncombusted fuel oil emitted by an inefficient furnace. Instead of dealing with painful migraines, expensive drugs and lost days of work, isn't it smarter to remove those unsealed containers of antifreeze leaching volatile organic compounds into your breathing space? When you find yourself suffering recurrent symptoms within particular locations, it is logical to investigate for the presence of irritants and toxicants (poisons).

A popular refrain today is that psychological stress is the author of all ills. But external stressors, in the form of pesticides, cleaning solvents, heating/cooking fuels, and chemically-laden construction materials are guaranteed to ‘stress’ the body maximally. Our bodies must work overtime devoting their resources to absorb what cannot be hastily ejected.

It is a difficult task trying to eject unwelcome guests who have invaded your home. However, when the invaders are the invisible, toxic residues of chemical applications in and around the home, how do you identify them, much less ask them to leave? You must ask questions: What has the landscaper done to your lawn? What did the exterminator use in his last visit? Was your contractor overly enthusiastic in his application of oil-based paints and sealers inside your home?

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Toxicologists can be an invaluable resource in helping us identify these very real threats within our living and working spaces. The exposure data they provide allows physicians to confidently order appropriate medical tests that might otherwise be considered too unusual or expensive to recommend. Test results permit remediation to proceed for houses showing excessive levels of

mold. Testing can save lives by revealing the hazards of ongoing toxic emissions which render a home or worksite uninhabitable. When necessary, it can offer an objective record for purposes of obtaining compensation for injury or property damage.

I have personally assessed offices and residences in which harmful concentrations of the following pesticides were found: cypermethrin, lambda-cyhalothrin, chlorpyrifos, chlordane, dieldrin, aldrin and dichlorvos. Additional findings included formaldehyde, petroleum fuel oil, methylene chloride and asbestos. No, I haven't lived in slums or worked in factories. These were just some of the invisible attributes that come along with the right of access to living and working spaces in our age of technology.

Unfortunately, while the human body has adapted itself to changes in climate and diet over the millennia, it isn't all that forgiving over years of harmful chemicals exposures. We must recognize the unseen but heavily felt effects of our enthusiasm for progress. Toxicology is one way in which we can ensure that the price we pay for progress remains reasonable.

We've come a long way, baby!

Barbara Rubin is a former developmental disabilities specialist who was disabled by pesticide poisoning while working in a NYC school. She now lives in New England, and tries to increase public understanding about environmental contributions to rising rates of preventable illness.

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