The Writing is on the Wall: Chemical Contamination is Dangerous

Trish Riley, July 31, 2009

Our world is literally saturated with synthetic petrochemicals – and many of them are very dangerous, debilitating and fatal. The Environmental Working Group reported in 2005 that infants in the United States have traces of as many as 200 chemicals in their bloodstream at birth. I have collected a raft of stories here pointing to some of the many pieces of evidence that this chemical contamination is systemic and devastating to life on our planet.

Our government is now considering reviewing its policies regarding safety testing of many chemicals which have had free, untested reign for decades, and that is a very good thing. But, I wonder, how long will this arduous, contentious process take to become active? And, even if we finally begin to remove toxic substances from the products we use in daily life and beyond, will it be enough to help us, given that our bodies and environment are already polluted with these substances?

There is some evidence that we can dramatically reduce our body burden by reducing our exposure to synthetic chemicals, although some will remain and can affect our cells and even our DNA, passing on to our offspring the chemicals as well as damage from them. There is also evidence that some efforts at environmental remediation can be successful, and science continues to offer improved methods of cleaning up toxic waste sites. The challenge here is to get these projects underway. They are traditionally held up in litigation for years thanks to the powerful legal lobbies of the parties responsible for making – and cleaning up – the messes.

I believe that the problem of chemical contamination of our air, soil, water and bodies, although it is still largely under the radar of the public, will prove to be a more pressing immediate concern even than the current specter of global warming. These chemicals are killing life on this planet, us included. We should begin now to reduce our exposure to synthetic petrochemicals in as many ways as we can, by addressing our personal environments, our political regulatory system and industrial responsibility.

An international group of scientists and diplomats developed the Wingspread Statement, known as the Precautionary Principle, which suggests that products not be approved until safety has been established. This principle formed the basis of a law that went into effect in the European Union in 2007, but it remains the opposite

of policies in the U.S., where chemicals are generally approved and not removed from market until they are proven dangerous.

Here's a roundup of articles detailing the problem. I've highlighted a few main points, but you can read the full articles linked below each excerpt.

Let's begin by looking at the impact of pollutants on wildlife:

"Wildlife Cancer: a conservation perspective," summarizes mounting evidence of human's contribution to carcinogenesis in wild-animal populations across the globe, thanks to man-made toxins dumped into wildlife's natural habitats.

"The more we contaminate the environment, the more we will see problems," Gulland says. "If you dump a pollutant, it doesn't just go away."

The good news for animals suffering from pollution-induced cancer is that when contaminants are taken out of the environment, some species have shown marked drops in carcinogenesis.

via Scientists Are Concerned About Cancer in Animals – Newsweek, July 27, 2009.

Gainesville's own Dr. Louis Guillette, a zoologist with the University of Florida, has contributed significant research to the study of endocrine disrupting chemicals and their effect on alligators. Here are a few clips from a Frontline interview in 1997:

…all of a sudden, "Bam!" It was one of these incredible experiences when you realize, I have hormonal abnormalities. I have possibly a contaminated lake. I know I have a top predator that accumulates contaminants, and then it all just kind of came together as a hypothesis.

Now, it's taken lots and lots of work to try and continue to test that hypothesis. We certainly have not proven it. But the data we have to date suggests that environmental contaminants are a major player in the abnormalities that we're seeing in the populations we study in Florida.

Guillette gives us a clue to a fantastic way to get Congress and the makers of these chemicals to pay attention and take an interest in halting further contamination:

Depressed testosterone circulating in the blood suggested we should have smaller phallus size. Sure enough, we were able to go out and look at the teenage populations on these lakes. And we show on average, for example, on Lake Apopka, twenty-five to thirty percent reduction in phallus size.

…it's very important also to recognize that testosterone and dihydrotestosterone, the two androgens, play fundamental roles in penis development in alligators, just like they do in humans. And so if we in fact have abnormalities, for example, in an alligator due to environmental contaminants, and changes in phallus size, we should in fact be looking at humans. We know that a group of young boys who were

exposed to contaminants in rice oil that their mothers ate have depressed testosterone and smaller phallus size.

via frontline: fooling with nature: interviews: louis j guillette, Nov. 1997.

Do chemicals also pose a hazard to humans?

Thanks to Terri Hansen for bringing this revealing story on further evidence of endocrine disruptive hormones to our attention:

Mounting evidence has shown that PCBs mimic estrogen, a female sex hormone, and can cause male bodies to develop feminine characteristics.

But the chemicals can induce a previously undiscovered double-whammy by also hindering the production of testosterone

via St. Lawrence River PCBs linked to low testosterone in Mohawk men – Great Lakes Echo, June 24, 2009.

Bisphenol-A is commonly used in the linings of cans used for food products; phthalates are chemicals used in many plastics, including baby and water bottles. The FDA hasn't regulated the chemical bisphenol-A, but Wal-Mart and Canada have both agreed to restrict its use in products for infants because consumers are concerned about its safety. Europe banned these substances from baby products in 1999, San Francisco did the same in 2006, though the city was sued by the American Chemical Council and the California Chamber of Commerce as a result.

…environmentally available levels of BPA — a synthetic chemical known to mimic the behavior of estrogen — can disrupt normal heart muscle function and prompt arrhythmia or irregular heartbeat.

BPA has come under increasing scrutiny by medical researchers for its endocrine-hormone-disrupting potential — effects that include interference with reproductive, egg and fat cell development, as well as with thyroid hormone and neurological functions. The chemical has also been linked to conditions that can prompt obesity and diabetes.

Additional cause for concern is the fact that these adverse effects can occur at very low levels of exposure.

via A Chemical Found in Most Consumer Products May Cause Heart Disease in Women -AlterNet, July 25, 2009.

Scientists have discovered a link between diabetes and remnants of the pesticide DDT, which remains in the blood of most Americans even now, 35 years since it was banned from use. Those with a higher concentration of the chemical are

more likely to develop diabetes, according to this new study from the University of Illinois-Chicago School of Public Health:

The study is among the strongest voices in a chorus of research supporting the link between environmental chemicals and diabetes, according to David O. Carpenter, director of the Institute for Health and the Environment at the State University of New York, Albany. He was not involved in the study.

“Most people have not thought of diabetes as a disease related to environmental exposure,” he said, “and these studies show that it is.

Do Contaminants Play a Role in Diabetes? Evidence is Growing – Organic Consumers Association July 20, 2009.

More pesticide health risks:

The National Research Council (NRC) report Pesticides in the Diets of Infants and Children (NRC 1993) concluded that dietary intake represents the major source of pesticide exposure for infants and children, and this exposure may account for the increased pesticide-related health risks in children compared with adults.

“…we were able to demonstrate that an organic diet provides a dramatic and immediate protective effect against exposures to organophosphorus pesticides that are commonly used in agricultural production. We also concluded that these children were most likely exposed to these organophosphorus pesticides exclusively through their diet.

Not only are fossil-fuel emissions bad for the planet and for your lungs, but they may also harm your baby’s developing brain. A new study published in the journal Pediatrics links mothers’ exposure to high levels of environmental pollutants during pregnancy to a four-point drop in children’s IQ scores by age 5.

via Mothers’ Pollution Exposure Linked with Kids’ Lower IQ – TIME.

Another University of Florida scientist, Dr. Elizabeth Guillette, has been documenting the effect of petrochemicals on IQ and development for decades:

Guillette found that children of farmers who use multiple synthetic chemicals produced less-detailed and less-accurate drawings than those raised by indigenous farmers who use natural, sustainable agricultural practices.

Other deficits in the exposed children included poor memory and problem-solving skills, lack of physical stamina in exercise and play, a three-fold increase in illnesses and allergies, and a tendency to play alone rather than in groups. “There was a lot of failure to look me in the eye,” says Guillette, whose work has been published in the journal Environmental Health Perspectives. “You don’t see the imaginative and creative play that you see up in the foothills.”

Guillette also adds, “It has to be stressed that these kids I worked with are regarded as healthy, normal children. It’s really only with this in-depth evaluating that these deficits show up.”

In 2003, the Environmental Working Group (EWG) found an average of 167 pollutants in the bodies of test subjects, including 56 carcinogens. In 2005, the EWG discovered an average of 200 chemical and pesticide contaminants in the placental cord blood of newborn infants.

“The studies of pesticides and other contaminants that are very common, such as mercury, lead and polychlorinated biphenyls (PCBs), show that all are decreasing IQ levels,” says Guillette.

Dr. Guillette highlights the destructive impact that lowered IQ levels will have on society:

“It’s been projected that if IQ decreases just five points across a community, you lose roughly two-thirds of your geniuses, and increase the number of children who are mentally retarded by two-thirds. This has huge consequences in terms of education, care and medical needs. Also, it’s the children of today who are going to be responsible for our communities, nation and world tomorrow. If we lose them, what are we going to do?” asks Guillette.

Chemical Consequences, Trish Riley, E Magazine, 2006

But there is good news on the horizon:

A study conducted at the University of Washington in 2005 found that switching to an organic diet results in reducing the concentration of some pesticide chemicals in children’s bodies: Organic Diets Significantly Lower Children’s Dietary Exposure to Organophosphorus Pesticides.

Cleaning chemicals out of our environment will not be easy because they contribute huge profits to the industries that manufacture and use them:

There is a great deal of industry resistance to admitting that some chemicals are dangerous. Quite often, cases are closed when the offending company makes a financial settlement with the victim of chemical exposure; the terms of the deal usually include a gag order preventing the victim from disclosing details to the public or the press.

Here’s a snippet about a man whose death is suspected to be caused by chemical exposure at work. This is part of a larger story about a massive wave of illness at the same plant, which the Chinese government insists is psychosomatic:

His family, which received a compensation package that included a job for his wife and a monthly $200 stipend for his mother and son, declined to talk to reporters.

After Mr. Li's death, the authorities forced Connell to halt production for a month. But in early June, not long after it resumed, Wang Shulin, a 38-year-old technician at the textile mill, went into convulsions while on the job. He was sent to the hospital but died just as doctors were administering a CT scan, according to co-workers. The cause of death was a brain hemorrhage.

via Chinese….Factory officials insist that Mr. Wang's death had nothing to do with chemical exposure – NYTimes, July 30, 2009.

But don't write this attitude off as a foreign atrocity. The same thing happens in the U.S., too:

…on the eighth anniversary of the federal program created to help sick nuclear weapons workers, the man who until recently was the program's top doctor says that… labor continues to incorrectly tell weapons workers with multiple diseases — including cancers of the brain, breast or bones — that radiation and other toxic substances that permeated the bomb factories could not have made them sick.

The doctor, Eugene Schwartz, recently resigned, …said many of the complaints that workers, advocates and lawmakers have leveled at the controversial program are valid.

This story is a **MUST READ: Plan to Pay Sick Nuclear Workers Unfairly Rejects Many, Doctor Says – ProPublica**, July 31, 2009.

And here's the story of a woman who died from exposure to pesticides professionally applied in her home. Her family was paid $4,500 in restitution.

Senator Bill Nelson has asked the Centers for Disease Control and Prevention to investigate a cancer cluster in his district. Many such clusters occur around the world, but efforts to identify the causes are often difficult and rarely conclusive. Problems include population growth, which reduces the significance of the number affected with a common illness, the scientific ability to single out specific causes when people are exposed to a wide variety of chemicals and other potentially dangerous substances daily, and the powerful resistance posed by industries which emit toxic substances into the environment. Profits in some of these industries are so great, they are able to arm themselves with banks of lawyers and lobbyists whose objective is to keep them in business. Money talks. But let's hope that these residents of South Florida will have some luck determining what is causing the brain cancers that seem to be unusually prevalent in their area:

Wellington – Residents worried that a brain cancer cluster has cropped up in The Acreage met with Sen. Bill Nelson this afternoon looking for answers.

via Residents of The Acreage meet with Sen. Bill Nelson to discuss tumors – South Florida Sun-Sentinel.com.

U.S. Sen. Bill Nelson, D-Fla., sent letters Thursday to both the Centers for Disease Control and Prevention and the Environmental Protection Agency asking for an immediate investigation.

Here's a strong piece calling for Congressional action to curb the proliferation of chemicals:

> Just last month, the Endocrine Society — composed of thousands of doctors in the field — issued a powerful warning that endocrine disruptors including phthalates are "a significant concern to public health."
>
> Regulation is so pathetic that there's not even disclosure when products contain phthalates.**If terrorists were putting phthalates in our drinking water, we would be galvanized to defend ourselves and to spend billions of dollars to ensure our safety.** But the risks are just as serious if we're poisoning ourselves, and it's time for the Obama administration and Congress to show leadership in this area.

via Op-Ed Columnist – Chemicals and Our Health – NYTimes.com July 19, 2009.

Send a letter to your Congressmen and Senators requesting that chemicals be reevaluated with safety as a priority:

> Legislation to modernize and update the Toxic Substances Control Act will be introduced soon. I urge you to support this effort to lead us into a new era of safer chemicals and healthy families.

MomsRising.org: Where moms and people who love them go to change the world.

And what can you do at home? Here are some immediate changes you can make to reduce exposure to synthetic chemicals for your family:

* Sort through household cleaning products, lawn chemicals and pesticides. Remove any that bear the *Danger* warning or skull and crossbones symbol. You can find alternative products to most of these supplies. Check the Environmental Working Group to assess safety and find alternatives. Deliver the products you're able to eliminate from your home to your local hazardous waste collection center.

*Clean up your personal care product shelves, too. Shampoos, soaps, deodorants, perfumes and make-up may all contain substances that have known toxicities, including many endocrine disrupters. Check the safety of your favorite products and learn how to read labels at Safe Cosmetics.

*Reduce your chemical exposure through foods by growing and buying organic foods. Reduce your use of plastics, particularly water and food containers, and choose fresh foods instead of canned goods. Buying locally grown foods reduces the fossil fuels burned to transport foods, which reduces green house gases and airborne chemical contaminants.

*Reduce your chance of exposure through your water supply by installing additional home water filters on drinking and shower supplies. Drs. Elizabeth and Lou Guillette use a combination of activated charcoal filters and a reverse osmosis system to remove contaminants common in water supplies.

Agriculture, Animals, Editorials, Featured Articles, Green Tips, Important Issues, Politics & Government, Pollution, The Future, Water