This Green Life

A Journal of Sorts

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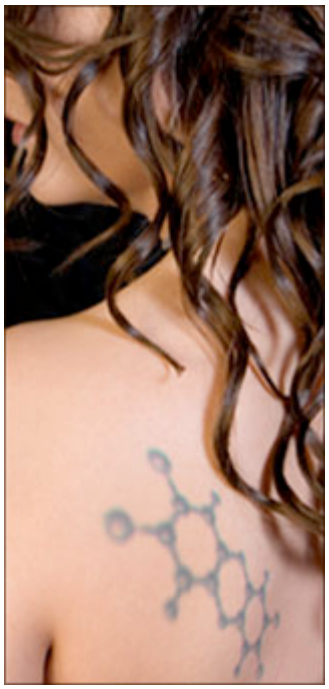
POLLUTION IN PEOPLE



For years, I thought I could keep my body free of dangerous chemicals by taking just a couple of simple precautions -- using natural cleansers and buying organic food. Wrong.

Biomonitoring tests to check for chemicals in people always find them. It doesn't matter whether the people are old, young, newborn or even fetal, nor what their history is. Contamination is always found. It is therefore a virtual certainty that if I were to be tested, I would learn I was contaminated, too. Not to cause panic, but so would you.

This pollution of our bodies is thought by many scientists to be universal today. It goes by the name of body burden.

Where do the chemicals come from? They are used in a seemingly endless array of industrial applications and consumer products, including baby toys, air freshener, laundry detergent, shampoo, nail polish, food containers, rugs and furniture, to name a few.

And how do they get into our bodies? Through our food, tap and bottled water, indoor and outdoor air and many of the things we touch or put on our skin. Babies get them in the womb from their mothers. Hence, the phenomenon of infants starting life with chemicals already in their systems.

Given how ubiquitous chemicals are, the question is not really how they get into us, but whether there is any way to keep them out. I will get back to that.

Let's first talk about whether and how the chemicals might harm us. The chemical industry predictably claims they are safe. In reality, next to nothing is known about the vast majority of them. That's because our laws allow chemicals to go on the market without prior safety testing.

But we do know quite a bit about a few chemicals, and what we know is not reassuring. For instance:

- **Phthalates** have been linked to problems with reproductive system development in baby boys and to insulin resistance and obesity in adult men. They are used in a wide variety of cosmetic products, such as moisturizers, nail polish and baby powder; cleaning products; plastic food wraps; and toys, especially those made with PVC plastic. Other uses include medical equipment and building supplies.
- **Bisphenol A** (also known as BPA) has been linked to breast and prostate cancer, reproductive problems, diabetes and alteration of brain chemistry and behavioral changes. It is used in many household products, including plastic baby bottles, hard plastic sports bottles and metal food cans, which are often lined with plastic to prevent a metallic taste in food.

Sheryl Eisenberg, a long-time advisor to NRDC, posts a new *This Green Life* every month. Sheryl makes her home in Tribeca (NYC), where—along with her children, Sophie and Gabby, and husband, Peter—she tries to put her environmental principles into practice. No fooling. Read more about Sheryl.

ONLINE RESOURCES

CNN
Tests Reveal High Chemical Levels in Kids' Bodies

COMMONWEAL
What Is Body Burden?

THE BREAST CANCER FUND
Myths and Facts about Biomonitoring

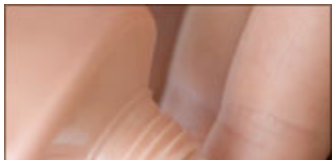
PBS
Trade Secrets

CHEJ
PVC: The Poison Plastic

EWG
Cosmetic Safety

NRDC
Neurotic Mothers or Inattentive Government?

OUR STOLEN FUTURE
Broad Trends in Scientific Findings about Endocrine Disruption



- **PCBs**, which were formerly used as electrical insulators, among other things, have been found to affect the immune, reproductive, nervous and endocrine systems. They are also considered a probable carcinogen. Though their production in the U.S. was banned in 1979, these long-lasting chemicals continue to circulate in the environment and in the food chain. New releases also occur when old equipment made with PCBs is damaged or improperly disposed of.
- **Dioxins**, a byproduct of the manufacture and burning of chlorine products, can affect the cardiovascular, respiratory, immune, reproductive, nervous and endocrine systems and cause cancer.

Other classes of chemicals shown to be toxic include PBDEs (used as flame retardants) and PFCs (used to repel water, stains and grease).

All the chemicals listed above are endocrine disruptors, meaning that they interfere with the workings of the endocrine -- or hormone -- system. Hormones are our bodies' chemical messengers. They tell cells to start or stop carrying out key functions at the proper time. While key to basic body functioning throughout our lives, they are particularly important to fetal development. During the nine months in which a baby takes shape, an exquisitely timed orchestra of these chemical signals ensures that the baby's body develops as it should. Any tampering with the type or timing of the signals can have tragic consequences, from cancers that emerge later in life to missing body parts. They can also affect the brain and behavior.

The years directly leading up to puberty, when hormones again play a major role in body development, may be another time when people are particularly sensitive to endocrine-disrupting chemicals.

So, how can you protect yourself, your children and your children-to-be?

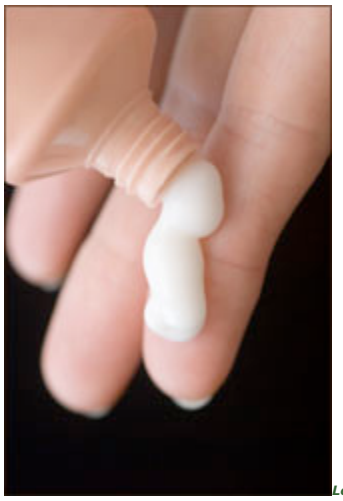
Unfortunately, moving somewhere remote is not, in itself, an answer. Many chemicals are highly mobile and resistant to breakdown. Over the last few decades, they have spread on wind and water currents to every corner of the globe, including the most pristine places.

However, your personal practices can make a difference in your LEVEL of exposure, not just to endocrine disruptors but to other toxins that humans are spewing out into the environment. These steps, in particular, can help:

- Buy organic food as much as possible. If cost is an issue, focus on the produce that will make the most difference, along with milk if you have young children.
- Eat less meat and meat products, especially fatty meats and butter, as many toxic chemicals are picked up by animals and stored in their fat (and ours).
- When choosing fish, follow safety guidelines for avoiding mercury contamination.
- Reduce your use of cosmetics and fragrances and buy less toxic brands.
- Use unscented laundry detergent and cleaning products -- or use natural cleansers.
- Do not use chemical pesticides around your house, on your pets or on your lawn.

At the same time as you take these steps in your own life, keep in mind that the real solutions to body burden, like other forms of pollution, are societal not individual. Without government regulation, safety from chemicals is a losing battle.

—Sheryl Eisenberg



Look for personal care products without the word "fragrance" in the ingredient list to cut down on your exposure to chemicals. This catchall term can mask the presence of a slew of toxins. Don't trust product claims of being unscented, warns the Environmental Working Group, as fragrances may be used to create the unscented effect. You actually have to scan the ingredients to confirm that the word "fragrance" does not appear.

The old view was that the "placental barrier" protected the fetus from contaminants in the mother's body. Recent research has shown this to be false. For instance, ten of ten newborns whose umbilical cord blood was tested on their day of birth as part of the Human Toxome Project were found to be contaminated with scores of chemicals, including many "linked to brain and nervous system toxicity, cancer, and birth defects and developmental delays."

(The drawing, by the way, is an "old view" by Leonardo da Vinci.)

Unsafe at any level. Toxicologists are fond of saying, "the dose makes the poison," meaning that toxic substances are only toxic above a certain level. This explains their method of safety testing, which is to begin at the high end of the dose spectrum and work their way down until they find a dose that seems safe. But such thresholds may not exist with endocrine disruptors, which can have effects at unimaginably small doses, while sometimes having different or no effects at higher levels. Environmental health scientists are therefore looking for new testing methodologies that take these different patterns into account.

Sheryl Eisenberg is a web developer and writer. With her firm, Mixit Productions (http://www.mixitproductions.com), she brought NRDC online in 1996, designed NRDC's first websites, and continues to develop special web features for NRDC. She created and, for several years, wrote the Union of Concerned Scientists' green living column, *Greentips,* and has designed and contributed content to many nonprofit sites.