

Our Body Burden

Our bodies are truly amazing. The fact that you are alive today means you have inherited an unbroken chain of being that stretches right back to the first single-celled organisms, 4,000 million years ago — that's 4 billion years.

Your body contains between 50 and 75 trillion cells, and each cellular nucleus contains up to 25,000 genes. You breathe in and out 23,000 times a day from the same air that was breathed by the dinosaurs, and your body is 60% water, from the same ever-recycling water that is shared by every being in the world.¹

When you consider this amazing complexity, it is remarkable how healthy most of us are. When your body receives the nutrients it needs, breathes clean air, drinks pure water and gets the exercise needed to keep your oxygen pumping and your muscles fit, it should last a hundred years.

If ever we had proof that our nation's pollution laws aren't working, it's reading the list of industrial chemicals in the bodies of babies who have not yet lived outside the womb.

— Congresswoman Louise Slaughter

It is very disturbing, therefore, to learn that our bodies are being contaminated with a burden of toxic chemicals. In 2003 the Mount Sinai School of Medicine in New York conducted a study with the Environmental Working Group (EWG) in which nine healthy volunteers, none of whom worked with chemicals, had their blood and urine tested.² They found 167 industrial chemicals, including:

- 76 chemicals linked to cancer in humans or animals (average 53 per person)
- 94 chemicals that are toxic to the brain and nervous system (average 62)
- 86 chemicals that interfere with the hormone system (average 58)
- 79 chemicals associated with birth defects or abnormal development (average 55)
- 77 chemicals that are toxic to the reproductive system (average 55)
- 77 chemicals that are toxic to the immune system (average 53)

The chemicals came from everyday things such as adhesives, pesticides, food additives, fire-retardants, hair sprays, perfumes, lubricants, brake fluid, varnishes, paints, dyes and cleaning products. A Canadian study came up with similar results,³ as did a European study including 47 Members of the EU Parliament from 17 nations.⁴

When the EWG examined the breast milk of 20 nursing mothers, it found levels of brominated fire-retardants (PDBEs) from furniture foam, computers and televisions that were 75 times higher than the average found in recent



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European studies. The PDBEs accumulate in the food chain and human tissues and adversely affect brain development and the thyroid.⁵

In 2004 when they looked at the umbilical cord blood of ten newborn babies, they found that 287 chemicals had passed through their mothers' placentas, averaging 230 contaminants.⁶

The US Centers for Disease Control is also monitoring environmental chemicals in our bodies. In 2005, as well as finding similar results to the other studies, they found that children had higher levels than adults for residues from second-hand smoke, for some pesticides and for chemicals such as phthalates that leach from plastics.

The good news is that they observed a steep decline in lead in the children's blood, following regulations to remove it from gasoline and paint, and in second-hand smoke residues, following smoking bans. The bad news is that these studies do not include the effects of ionizing radiation, a known carcinogen that is adding to our body burden.

When the chemicals are not removed, however, they often contribute to cancer. In 2003 a Belgian study found that women with breast cancer were 5 times more likely than healthy women to have residues of the pesticide DDT in their blood.⁷ In 2006 a US study found that men whose bodies were contaminated with PCB 153 were 30 times more likely to have prostate cancer than those who were not contaminated.⁸

Why is this being allowed? A lack of regulatory oversight and constant pressure from

- Body Burden: The Pollution in Newborns: www.ewg.org/reports/bodyburden2
- California's Body Burden Campaign: www.calbbc.org
- CDC National Report on Human Exposure to Environmental Chemicals: www.cdc.gov/exposurereport
- Chemical Body Burden: www.chemicalbodyburden.org
- Environmental Defence Canada: www.ToxicNation.ca
- Environmental Working Group: www.ewg.org
- WWF: www.worldwildlife.org/toxics

industry not to interfere have combined to allow over 100,000 novel chemicals to be used, most of which have never been examined for their health impacts (see p. 30). When chemicals *are* studied, they are almost never studied in combination with other chemicals, and rarely at the minute levels of contamination that can undermine the body's exquisitely sensitive hormonal systems.

We should be outraged that this is being allowed. Hazardous substances linked to cancer and other health problems are being found in the tissue of almost every living creature on Earth, and it is up to us to do something to stop this toxic trespass.

For too long, policy-makers have retrospectively pleaded, "if only we had known earlier what we know now." I believe that what we do know now must guide us in our review and approval processes, and should become the basis of a bold new precautionary approach that puts the burden of evidence on safety first.

— Dr. Roberto Bertollini,
World Health Organization