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OP-ED COLUMNIST

Chemicals and Our Health

By NICHOLAS D. KRISTOF
Published: July 15, 2009

However careful you are about your health, your body is almost certainly home to troubling chemicals called phthalates. These are ubiquitous in modern life, found in plastic bottles, cosmetics, some toys, hair conditioners, and fragrances — and many scientists have linked them to everything from sexual deformities in babies to obesity and diabetes.



Fred R. Conrad/The New York Times
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The problem is that phthalates suppress male hormones and sometimes mimic female hormones. [As I've written before](#), chemicals called endocrine disruptors are believed to explain the proliferation of “intersex fish” — male fish that produce eggs — as well as sexual deformities in animals and humans. Phthalates (pronounced THAL-ates) are among the most common endocrine disruptors, and among the most difficult to avoid. They're even in tap water, and levels soar in certain plastic water bottles.

They probably are not harmful to us adults, but it is another story for children. In girls, some research suggests that phthalates may cause early onset puberty. Most vulnerable of all, it seems, are male fetuses in the first trimester of pregnancy, just as they are differentiating their sex. At that stage, scholars believe, phthalates may “feminize” these boys.

“Commonly used phthalates may undervirilize humans,” [concluded a study](#) by the University of Rochester. The study, which was small, based its conclusion, in part, on measurements of “anogenital distance” — the distance between the anus and the genitals, which is typically twice as long for males as for females. Some scholars believe that shrinkage of this distance reflects “feminization” of male anatomy.

The researchers found that pregnant women with higher levels of phthalates delivered babies with a shorter anogenital distance. It's possible this won't cause any complications. But baby boys with shorter anogenital distance were more likely to have undescended testicles and less penile volume, and phthalates have been linked in humans to problems with sperm count and sperm quality.

In China, researchers found that female rats given phthalates gave birth to males with a penis deformity called hypospadias (in which the urethra exits the side or base of the

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penis, not the tip). Many other animal studies around the world have found similar results.

Some endocrinologists refer to the “phthalate syndrome,” including hypospadias and undescended testicles.

“Accumulating human epidemiological data point to a relationship between adverse fetal development and phthalate exposure,” concluded an article this spring in the journal *Trends in Endocrinology and Metabolism*. 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.”

One of the conundrums for scientists and journalists alike is how to call prudent attention to murky and uncertain risks, without sensationalizing dangers that may not exist? Increasingly, endocrinologists are concluding that the mounting evidence is enough to raise alarms.

Indeed, there has also been a flurry of scientific articles questioning whether endocrine disruptors are tied to obesity, autism and allergies, although the evidence there is less firm than with genital abnormalities and depressed sperm count.

The [American Chemistry Council](#) argues that [phthalates are not a problem](#), that they do not migrate out of products easily and that they quickly break down in the body. The chemical industry has noted [an apparently reassuring study](#) in the *Journal of Urology* finding that hypospadias does not seem to be increasing in New York State (although different studies showed increases both in the United States and in Denmark).

James Yager, a professor of toxicology at the Johns Hopkins Bloomberg School of Public Health, agrees that there are huge uncertainties but says that pregnant women and children should be cautious. “When my wife was pregnant, we worried about drinking or smoking,” Professor Yager said. Now, he said, he would be more focused on exposure to chemicals such as phthalates in baby bottles.

Dr. Theo Colborn, the founder of [the Endocrine Disruption Exchange](#), goes further. She tells researchers working with her to toss out plastic water bottles and use stainless steel instead. “I don’t have plastic food containers in my house,” she added. “I use glass.”

Certain phthalates have been banned from new toys sold in the United States, but kids continue to be exposed to these chemicals from the moment they are conceived. Dr. Ted Schettler of the Science and Environmental Health Network says that the way regulators examine risks — studying the impact of one chemical at a time — is bankrupt, for we’re exposed to a cocktail of them daily. 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.

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A version of this article appeared in print on July 16, 2009, on page A27 of the New York edition.

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