Toxins found in pregnant U.S. women in UCSF study

Victoria Colliver, Chronicle Staff Writer

Friday, January 14, 2011

, furniture, processed foods and beauty products, were found in the blood and urine of pregnant U.S. women, according to a UCSF study being released today.

The study, published in the journal Environmental Health Perspectives, marks the first time that the number of chemicals to which pregnant women are exposed has been counted, the authors said.

Of the 163 chemicals studied, 43 of them were found in virtually all 268 pregnant women in the study. They included polychlorinated biphenyls or PCBs, a prohibited chemical linked to cancer and other health problems; organochlorine pesticides; polybrominated diphenyl ethers, banned compounds used as flame retardants; and phthalates, which are shown to cause hormone disruption.

Some of these chemicals were banned before many of the women were even born.

The presence of the chemicals in the women, who ranged in age from 15 to 44, shows the ability of these substances to endure in the environment and in human bodies as well, said lead author Tracey Woodruff, director of the UCSF Program on Reproductive Health and the Environment.

A call for action

Woodruff said people have the ability to reduce but, as the findings show, not eliminate their exposure to chemicals. "We want to show people this is an issue we want the government to pay attention to and address," she said.

The study focused on pregnant women because of the potential for exposure to multiple chemicals to hurt their unborn fetuses, but also looked at the data for nonpregnant women. The research did not follow the subjects to determine whether actual harm occurred.

Researchers noted that the levels of certain chemicals were actually higher in the nonpregnant women, suggesting that behavioral changes made during pregnancy such as not smoking, for the health of their unborn fetuses, or physiological factors might play a role.

The study, which was funded by the Pew Charitable Trusts and a grant from the Passport Science Innovation Fund, analyzed data from the pregnant women provided by the 2003-04 National Health and Nutritional Examination Survey, a nationally representative sample of the U.S. population.

The chemicals found in 99 percent to 100 percent of the women included certain PCBs, organochlorine pesticides, perfluorinated compounds, phenols, PBDEs, phthalates, polycyclic aromatic hydrocarbons and perchlorate.

Persistent chemicals

Bisphenol A, a chemical used in cans and other food packaging that has been linked to health problems including brain development, was found in 96 percent of the women. A broken-down form of DDT, a pesticide banned in the United States in 1972, was found in virtually all the women.

Arlene Blum, founder of the Green Science Policy Institute in Berkeley and a visiting scholar with UC Berkeley's department of chemistry, was not surprised by the results. She was not involved in the study.

"Certain classes of chemicals we know go into people's bodies and stay there for very long periods of time," she said, explaining that these classes of chemicals have stable bonds, meaning they don't break down easily.

Although some flame retardants were banned from clothing in the 1970s, Blum said, similar retardants were used in other consumer goods such as the foam in furniture, the plastic around television sets and even baby products. She blamed much of the ubiquitousness of the chemicals on California's strict flammability laws, which are often modeled by other states.

The American Chemistry Council responded to the study with a statement that said biomonitoring research conducted by the U.S. Centers for Disease Control and Prevention has found the mere presence of a chemical in the body does not mean that it will cause negative health effects.

The group also said bodies naturally absorb organic and man-made chemicals, but technological advances now allow researchers to measure exceedingly minute traces of these substances.

Multiple exposure

Dr. Sarah Janssen, senior scientist at the Natural Resources Defense Council in San Francisco, said the levels of exposure shown in the study were low, but she was concerned about fetal harm that could be caused by the mother's exposure to multiple chemicals acting together.

"The study's results show that unborn babies are exposed to a soup of chemicals - and furthermore, because the women in the study were tested for exposure to only a fraction of chemicals on the market - the study also suggests that pregnant women

are likely carrying and passing onto their fetuses many more chemicals than have been reported here," she said.

Reducing exposure

While it is impossible to completely avoid exposure, here are some suggestions from health experts on reducing exposure to some harmful chemicals:

Eating: Eat a well-balanced diet, wash hands often and do not smoke. This will help maintain overall health and reduce some of the effects of harmful chemicals.

Microwaving: Avoid microwaving food in plastic. Use ceramic or glass instead.

Cleaning: Keep a clean home. Toxic chemicals are present in household dust and dirt.

Shopping: Choose products wisely - everything from paints, cleaning supplies to cookware and beauty products. Select safer, nontoxic products.

Source: UCSF Program on Reproductive Health and the Environment

E-mail Victoria Colliver at vcolliver@sfchronicle.com.

This article appeared on page **A - 1** of the San Francisco Chronicle