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THE NATION

Rocket-Fuel Chemical Found in Breast Milk

Perchlorate is found in almost all samples tested, a study finds, raising concerns about the substance's effect on the thyroid and brain.

By Marla Cone
Times Staff Writer

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Scientists on Tuesday reported that perchlorate, a toxic component of rocket fuel, was contaminating virtually all samples of women's breast milk and its levels were found to be, on average, five times greater than in cow's milk.

The contaminant, which originates mostly at defense industry plants, previously had been detected in various food and water supplies around the country. But the study by Texas Tech University's Institute of Environmental and Human Health was the first to investigate breast milk.

The findings concern health experts because infants and fetuses are the most vulnerable to the thyroid-impairing effects of the chemical.

Breast milk from 36 women in 18 states, including California, was sampled, and all contained traces of perchlorate.

Perchlorate blocks the nutrient iodide and inhibits thyroid hormones, which are necessary for brain development and cellular growth of a fetus or infant. A baby with impaired thyroid development may have neurological defects that result in lower IQ or learning disabilities.

The researchers recommended that pregnant and nursing women block the effects of perchlorate by taking iodine supplements as a precaution.

At the levels they found in breast milk, the scientists reported that 1-month-old infants would take in enough perchlorate to exceed a safe level, called a reference dose, that was established last month by a panel of the National Academy of Sciences.

"It is obvious that the NAS safe dose ... will be exceeded for the majority of infants," the report published in the journal *Environmental Science and Technology* says. Some infants would ingest so much that they would exceed levels that altered the brain structure of animals in laboratory tests.

The findings come as the U.S. Environmental Protection Agency is developing an enforceable limit on the amount of perchlorate in drinking water based on the recommendations of the National Academy of Sciences panel. Currently there is no national standard.

"This is not just another study," said Renee Sharp, a senior analyst at the Environmental Working Group, which advocated a strict national standard. "It ends the questions about whether women are passing along perchlorate to their kids through breast milk, and the sky-high levels the scientists found put more than half the kids over the safe levels the NAS now recommends."

Environmentalists have urged the EPA to set its standard based on the body weight and perchlorate intake of an infant rather than an adult. Toxicologists said that would probably mean a standard of a few parts per billion. Pentagon officials have said that would shut down many water systems across the country and cost the military and its contractors billions of dollars in cleanup costs. They have instead lobbied for a standard of about 200 parts per billion based on thyroid studies of adults.

The new findings "will practically force EPA officials to write a drinking water standard that protects infants — not just healthy adults," Sharp said.

California has set its own public health goal of 6 parts per billion but it is not an enforceable limit.

The Texas Tech researchers, led by Andrea Kirk, reported that the perchlorate in breast milk was not linked to the water the mothers drank. Instead, the main source was probably food, which apparently was tainted by irrigation water.

The finding that perchlorate is pervasive in breast milk and reaches high levels is somewhat of a surprise to toxicologists, because, unlike many other industrial chemicals, it does not build up in tissues over time.

Instead, it appears that the amount passed on to the infant in breast milk is determined by what the mother has just eaten.

Perchlorate levels are particularly high in the lower Colorado River, which supplies irrigation water to almost 2 million acres of cropland. The river, government officials believe, has been tainted by leaks from a Kerr-McGee plant near Lake Mead.

The highest perchlorate levels, one reaching 92 parts per billion, were found in the breast milk of two women from New Jersey. The average was 10.5 parts per billion, compared to 2 parts per billion in cow's milk. Forty-six of 47 samples of dairy milk purchased in 11 states, including California, contained perchlorate.

Sujatha Jahagirdar, clean-water advocate at Environment California, an advocacy group, said it was "absolutely appalling" that a component of rocket fuel was found in mother's milk.

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