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Perchlorate thyroid risk for women found

By Chris Bowman - Bee Staff Writer

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A rocket-fuel chemical pervasive in California's drinking water supplies puts women at much greater risk of thyroid disorders than previous studies have shown, federal scientists said in a major health investigation released Wednesday.

The surprise find by scientists with the Centers for Disease Control and Prevention suggests that the federal government's recommended "safe dose" limit for the chemical perchlorate in drinking water is too high, particularly for woman with lower levels of iodine and those who are pregnant.

"The data show that the federal standard is not anywhere close to being health-protective," said Renee Sharp, an analyst with the nonprofit Environmental Working Group.

Federal Environmental Protection Agency and industry officials said they have not yet examined the study and declined to comment.

Perchlorate, a manufactured and naturally occurring chemical salt, inhibits the thyroid's uptake of iodine, which slows metabolism and causes fatigue, depression and weight gain.

Infants and fetuses are at much higher risk than adults, however, because they consume far more water per pound and because perchlorate can impair their brain development.

The federal scientists' study is scheduled for posting today in the online journal Environmental Health Perspectives.

The study is expected to influence the ongoing debate over the level of protection that federal and California environmental regulators decide upon for millions of people with some level of perchlorate in their drinking water supplies.

The perchlorate threat is especially acute in California because of the large number of past and current military operations and defense contractors, which use perchlorate in solid rocket propellant and explosives.

GenCorp's Aerojet rocket-manufacturing plant in Rancho Cordova is one such site where the chemical has seeped into the soil and contaminated many wells.

Scientists have been struggling to determine the effect, if any, of drinking minute amounts of the chemical over a period of years.

The CDC launched the study in 2000 to help answer that question, drawing upon a large and diverse study group of 2,299 men and women ages 12 and older from across the country.

Researchers found some level of perchlorate in everyone's urine, attesting to the chemical's widespread occurrence in the nation's food and water supply.

The scientists examined the relationship between perchlorate concentrations in urine and concentrations of thyroid hormones in blood, finding the chemical to be a reliable predictor of thyroid hormone levels in

women but not in men.

The study found reductions of thyroid hormones especially pronounced in women with lower iodine in the urine -- less than 100 micrograms per liter. As estimated 44 million women in the United States have iodine levels in that lower range, according to the study.

Those with low iodine levels had decreased hormones correlating to level of perchlorate of 2.9 ppb in their urine. California has proposed a drinking water limit of 6 ppb of perchlorate.

EPA officials currently base the level of groundwater cleanup at military and industrial sites on a perchlorate dose of 24.5 parts per billion, the level recommended in 2005 by a National Academy of Sciences panel.

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