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ADHD study hints of soy link

Health • Findings raise further doubt about baby formula.

BY MAYRAV SAAR
The Orange County Register

Parents and some researchers have long suspected a link between soy-based infant formula and attention deficit/hyperactivity disorder.

Now UCI researchers say they have discovered that a mineral found in soy may be linked to the disorder in rats.

Two studies to be published today in the journal *NeuroToxicology* suggest that the mineral manganese lowers the level of the neurotransmitter dopamine in rats, perhaps causing behavioral problems if consumed in large amounts.

Rats that received the higher doses of manganese were more impulsive and had a harder time completing tasks than rats fed lower doses.

"I hope it means nothing," said Dr. Francis Crinella, professor of pediatrics

and lead author of the study. "This is one time when the investigator is hoping that it's a red herring.

Otherwise, we would have a public-health catastrophe because there are a lot of kids who get soy-based infant formula," Crinella said.

Soy-based formula contains about 80 times the level of manganese found in human breast milk, and infants absorb the mineral at a much higher rate than children who have had their first birthday, according to previous studies by researchers at the University of California, Davis, who contributed to the UCI study.

Humans need manganese to survive, but over-absorption can be harmful, the researchers say.

To find out how harmful, the UCI and UC Davis teams are collaborating on a

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three-year rhesus monkey trial tracking the behavior of primates fed soy formula.

UCI researchers already have found elevated levels of manganese in the hair of children diagnosed with ADHD. The American Psychiatric

Association estimates that 3 percent to 7 percent of U.S. children have the disorder.

In the most recent experiments, Crinella's team found a direct link between the amount of manganese absorbed by baby rats and the suppression of dopamine. Dopamine plays a key role

that human infants are at risk of manganese overexposure from soy formula, researchers said, soy products are safe for children older than 1.

After babies' first birthdays, their pancreases can properly secrete the antioxidant mineral, Crinella said.

"There is no indication that

anyone past the age of 1-year-old is going to suffer from over-absorption of manganese," he said.

"The number one advice I would give is to breast-feed your kids."

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