

The Sacramento Bee

TUESDAY November 30, 2004 **

www.sacbee.com

Final edition 50 cents

Brain research might lead way to reducing crime

Other views

In 20 years covering government and public policy in California, I've run into more than a few people obsessed with changing the world in small or large ways. Most have failed. Red Hodges refuses to be one of them.

I first met this crusty retired oil man in the late 1990s, when he began dropping by my office near the Capitol. His story, in a way, was familiar to me.

Prompted by his experience with a criminally delinquent son, Hodges was on a crusade to change the criminal justice system. Like many people I have met who face traumatic events personally or in their family, he had become a passionate advocate for a related cause.

But Hodges added an intriguing twist. He was convinced that an obscure metal - manganese - was somehow causing attention deficit disorder, and worse, in generations of young people. And he had done years of research gathering published papers and anecdotal evidence worldwide suggesting his theory was more than just a way for a desperate father to soothe his psychic wounds.

If his hunch was right, it had the potential to save California governments billions of dollars - and save countless people unnecessary pain.

One other thing: Hodges had a sense of humor. Despite his serious passion, he realized that what he was saying sounded far-fetched, so he put it mildly, and he was willing to poke fun at himself. He told me that most people upon meeting him and hearing his story thought he was some kind of "kook." I felt better knowing I was not alone.

I thought of all this a couple of weeks ago as I sat in a first-floor hearing room in the Capitol, where Assemblyman Mark Leno, a San Francisco Democrat, had convened the Public Safety Committee to hear from a panel of experts largely assembled by Hodges.

Since I began following his project, Hodges, 72, has grown from gadfly to eccentric expert. With his prodding and financial support, a team of University of California scientists has researched his theory. And what they have found is disturbing: the possibility that the manganese in soy-based infant formula is causing brain damage in infants.

Manganese is an element crucial to

life but can also be toxic if absorbed in large amounts. The ancient Greeks called it the "madness metal," and research into the population living around manganese mines and their workers has shown high levels of mental illness.

According to Dr. Francis Crinella, a clinical professor of pediatrics at UC Irvine, soy-based infant formula contains manganese in concentrations up to 80 times higher than human breast milk. Prompted by studies that showed elevated levels of manganese in the hair of juvenile felons and hyperactive children, Crinella designed a study to isolate the effects of manganese on infant brain development.

The researchers fed a manganese supplement to baby rats to simulate the manganese given to human infants raised on soy formula. The rats fed the supplement did worse than a control group on homing tests in a maze and on a passive avoidance exercise testing their willingness to avoid an electric shock when en-

tering a darkened compartment. Their brains also showed a steep decline in dopamine, a neuro-transmitter crucial to regulating emotions and behavior.

At Hodges' urging and with more of his funding, researchers at UC Davis followed up the rat study with another using baby monkeys. Three groups of the primates were fed cow's milk formula, soy-based formula and a soy formula with extra manganese, and their behavior and interaction was then observed in the lab.

The monkeys fed the soy-based and manganese-fortified formula played less and were more clingy. "They would sort of hug each other and sit together," said Dr. Mari Golub, the Davis professor who designed the project. They were also more impulsive.

The study is ongoing. All of this is still at a very early stage, but Crinella thinks the results are strong enough that the state should warn new mothers away from soy-based formula and advocate breast-feeding whenever possible for at least the baby's first six months. The director of a trade association for the baby formula industry did not return a call for comment.

Manganese, Hodges told me with his

usual dose of certainty, is "the world's first physiological marker for violent, abhorrent behavior."

He is pushing the state to consider nutrition supplements for imprisoned youths who test positive for the metal, to help them overcome any brain damage they might have suffered.

Leno said he was impressed by what he heard and plans to follow up.

"The basic premise here is that we are all made up of complex, chemical equations ourselves, and we know that when they are off balance, our behavior is off balance," he said.

Correction: In Sunday's column, while comparing the risks involved in two kinds of pension plans, I mistakenly referred to both types as defined contribution plans. I should have said that all of the risk in a defined benefit plan is carried by the employer.

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