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Posted on Sun, Jul. 24, 2005

UK chemist tilts at autism's origins

CHALLENGING THE SCIENTIFIC WISDOM, BOYD HALEY TAKES AIM AT MERCURY

By Andy Mead and Jim Warren
 HERALD-LEADER STAFF WRITERS

Some of the protesters making their way through the midsummer heat of Washington last week were parents holding photos of their autistic children. Others carried signs with slogans such as "Autism sucks! Say no to mercury."

A child's sign said "I wish my brother could talk to me." And above a large poster of a sleeping newborn were the words, "Mercury doesn't belong here."

When the 500 marchers from across the country reached the front of the Capitol on Wednesday, they heard from several members of Congress, a 5-year-old child, and Boyd Haley, a 5-foot-6 University of Kentucky chemist who says he is "mad as hell" at the country's medical establishment.

Haley, until recently chairman of UK's chemistry department, is a leader in a nationwide effort to tie the vaccinations that were required for millions of American children to a rapid increase in the number of youngsters being diagnosed with autism. The devastating developmental



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Boyd Haley, a University of Kentucky chemist, addressed the crowd Wednesday at a rally on the steps of the Capitol in Washington, D.C. Haley has sought to ban thimerosal, a mercury-based preservative that was in most children's vaccinations from the mid-1980s until about four years ago. He said he believes the preservative severely affected the brains of

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disorder severely affects verbal communication and social interaction, and is thought to strike at least 25,000 children each year.

some children, causing them to become autistic.

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It's an emotional and intellectual controversy that pits Haley and his allies against most of the mainstream scientific community. The battle rages on the Internet, in Congress and in some state houses, and has become so volatile that some of the scientists involved say they've received death threats. Research into autism continues, but for now no one knows whether Haley ultimately will be judged as a shaman or a savior.

Haley, 64, seems to relish the fight.

Standing in front of half a dozen microphones in Washington, Haley expounded on his often repeated thesis: mercury-based preservative called thimerosal that was in most children's vaccinations from the mid-1980s until about four years ago severely affected the brains of some children, causing them to become autistic. Haley isn't the only scientist pushing the theory, but he is one of the most vocal.

The federal Centers for Disease Control and Prevention and the U.S. Institute of Medicine, among other science and medical groups, have found Haley's evidence wanting. But many parents passionately believe him. The Web site of Moms on a Mission for Autism lists Haley under "Heroes."

Haley says he has no doubt that he is right, and that the CDC, the Institute of Medicine and anyone else who disagrees with him are wrong.

"These people were not concerned that they were injuring children," he said in an interview in his Lexington laboratory the day before the Washington rally. "They were more concerned that it was going to hurt the reputation of the vaccine program or, probably more directly, their own individual reputations."

Undermining faith

This summer, he and his cause are getting plenty of national attention.

An article by Robert F. Kennedy Jr. in the June 30-July 14 issue of Rolling Stone hailed Haley as "one of the world's authorities on mercury toxicity" and charged that the CDC and others have conspired to hide the thimerosal-autism link Ð a idea that Haley buys into.

A new book on the controversy, *Evidence of Harm*, mentions Haley at least 18 times, noting his research and propensity for "colorful southern sound bites."

And a front-page article about the controversy in the June 25 New York Times didn't mention Haley by name, but suggested that the UK chemist's research is suspect by lumping him with another mercury foe, one "who said that God spoke to her through an 87-year-old priest and told her that vaccines caused autism."

Haley believes his side is winning the fight.

In 1999, the American Academy of Pediatrics and the U.S. Public Health Service urged vaccine makers to stop putting thimerosal in their products as a precaution, and by 2001 only a tiny amount remained in most vaccines given to young children. Missouri, California and Iowa have banned thimerosal, and similar laws are pending in more than a dozen states.

(The Kentucky General Assembly this year passed legislation creating a state commission on autistic spectrum disorders charged with developing a comprehensive plan for helping victims of the disease.)

Meanwhile, some medical experts worry that the continuing vaccine-autism debate could undermine public faith in child immunizations, which they say have conquered many childhood illnesses and are one of the foundations of modern public health.

Last Tuesday Ð the day before the Power of Truth Rally in Washington Ð federal health authorities hastily organized a national press briefing on autism, apparently intended to counter any public fears. Representatives from the CDC, the National Institutes of Health, the U.S. Food and Drug Administration, and the American Academy of Pediatrics all declared that childhood vaccinations are safe.

"What we know today is based on many studies ... in many nations around the world, including the United States," said Dr. Julie Gerberding, director of the CDC. "The preponderance of evidence does not reveal an association between thimerosal and autism ... but I can't sit here and tell you with 100 percent certainty there is never going to be an association ... It will be very difficult for science ever to prove a negative."

Proving a negative

Mercury, the material contained in thermometers, is the only metal in nature that is liquid at normal temperatures. It has long been used in many applications, including pharmaceuticals. But the silver-white metal also is toxic to humans Ð a fact that no one disputes. And Boyd Haley has devoted much of his professional career to exploring and describing the toxicity of mercury.

He believes that ethyl mercury, the form of the element that was used in thimerosal, adversely affected brain functions in children who, for some reason, were unable to expel the mercury from their systems. The result, he says, is autism.

Dr. Richard Deth, a researcher at Northeastern University in Boston who agrees with Haley, says the UK chemist's work on mercury toxicity is a cornerstone of the argument that vaccines might cause autism.

"He's a very important part of this debate," Deth said. "Boyd is very vocal, and he doesn't shy away from an issue, especially an issue like this that involves national health and child welfare."

A string of trout

Haley was born in southern Indiana and served as an Army medic during the mid-1960s.

"I'm a patriot," he said. "But the thing I find very discouraging about our government is that we're more interested in protecting the income of professions and the pharmaceutical industry than in protecting the American people."

After the Army, Haley enrolled in the University of Idaho. He told an interviewer in 2003 that he chose the school because the cover of the brochure "featured a beautiful woman holding a string of trout in front of this canoe by a lake with a gorgeous mountain behind it."

He later received a doctorate in chemistry from Washington State University, and did postdoctoral work at Ya University.

He taught for a decade at the University of Wyoming, and came to UK in 1985.

Haley is no stranger to controversy, or to disagreeing with his colleagues.

In the 1990s, he was one of a number of scientists who produced research suggesting that mercury given off by amalgam dental fillings could be a cause of Alzheimer's disease. Haley stuck to that theory, even as UK's Sanders-Brown Center of Aging was producing a study in 1999 that concluded there was no connection between dental fillings and Alzheimer's.

Dr. William Markesbery, director of the Sanders-Brown Center and an internationally recognized Alzheimer's expert, says that some of UK's early studies did show elevated mercury levels in the brains of some Alzheimer's victims. But when UK conducted the larger 1999 study Ð comparing mercury levels in victims' brains with the number of dental fillings they had Ð no correlation was found, he said.

"Boyd feels differently," Markesbery said. "I wouldn't necessarily put him in the minority, but I think most people in the field now don't believe mercury is causative."

"Boyd is a good scientist and a friend. Just because we had a little different data, we never really had any major conflicts over it."

But Haley said last week that the real story behind the Markesbery study, which he called "a crap paper," was an attempt by the American Dental Association to neutralize earlier Markesbery studies suggesting a mercury Alzheimer's link.

"They had to get rid of his research because it was too much to the point," Haley said.

Markesbery replied that the study was done under the highest scientific standards, and that, although it was published in the Journal of the American Dental Association, the results were no in way influenced by the dental group.

"The ADA had nothing to do with it," he said.

Del Collins, UK's associate vice president for research, also insisted that no one swayed Markesbery's research.

"Boyd proselytizes mercury as the cause of many bad diseases," Collins said. "The problem with mercury as cause of autism is that there has not been any study to my knowledge that shows there is a significant difference in the amount of mercury in autistic children versus normal children."

Haley's work with mercury and autism grew out of his suspicion that the many vaccinations a soldier receives before going overseas could be linked to Gulf War syndrome.

Soon, groups of parents with autistic children found him.

Mercury in hair

Lyn Redwood of Atlanta, who is president of a group called SafeMinds and the mother of Will, an 11-year-old autistic child, said Haley has conducted tests for her group, traveled to speaking engagements and helped with testimony before Congress — all without pay.

"He understands the toxicology of mercury, he understands the levels of exposure that our infants received," Redwood said. "That's why Dr. Haley is such a wonderful advocate for us. He reads the science and understands it."

Haley has twice testified before the Institute of Medicine, an arm of the National Academy of Sciences, which formed a committee of experts in 2001 to review the alleged thimerosal-autism link. The panel has issued two reports, in 2001 and in 2004, discounting a link.

Testifying before the committee last year, Haley presented a study, based on an analysis of hair clippings from the first haircuts that young children received, that he said demonstrated that autistic children can't get rid of mercury in their bodies. He also testified about research into the numbers of dental fillings in the mouths of women who gave birth to autistic children.

Dr. Marie McCormick, a professor of maternal and child health in the Harvard School of Public Health, chaired the IOM committee on autism. She said in an interview that there were problems with the control groups and research methods in Haley's studies.

"In general, we did not find his work to be persuasive," she said.

Asked about McCormick last week, Haley said this: "I think there's a special place in hell for her."

He also poked fun at the studies that the IOM committee cited which showed no thimerosal-autism link, including one that showed that autism rates in Denmark rose, rather than fell, when mercury was removed from the country's only vaccine that contained mercury.

Haley said the study has several statistical problems, and was conducted in the wrong place, because the

autism rate in Denmark is very low.

"It's like doing a study on the effect of mosquitoes on the spread of malaria and doing it in Minnesota instead of Panama," he said. "It's flagrant cheating."

'Mad child disease'

Not all parents of autistic children agree with Haley, and hundreds signed a petition against him when it was reported that, in a speech last year at a meeting of Doctors for Disaster Preparedness, he referred to autism as "mad child disease."

Haley's explanation: The speaker before him, a veterinarian, had gotten everyone's attention with a report on the one cow that had been diagnosed with mad cow disease. Haley said he wondered how much attention would be paid, and money spent on research for, a condition called "Mercury Afflicted Disease of children."

Melanie Tyner-Wilson of Lexington, the immediate past president of the Autism Society of the Bluegrass, said her group heard from Haley a few years ago, then heard from pediatricians who talked about the importance of vaccinating children.

Tyner-Wilson, who has a 12-year-old son with autism, has followed the national mercury-autism fight closely, but doesn't know who is right.

"It's been this kind of interesting dance," she said. "What's sad is that one group is trying to make the other group look like lunatics. My hope is there will be more research."

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