

Local manganese study expands to children

About 200 local 7- and 8-year-olds will be needed for the next step of a University of Cincinnati air pollution study examining the health effects of manganese on children in the Marietta area.

The Mid-Ohio Valley Air Pollution Study (M.A.P.S.) began in 2006 when hair and blood samples were collected from 142 residents, then tested for levels of manganese and lead.

Now, with \$2.6 million in federal funding secured this month, the study will expand to look at area youth.

“Kids are one of the most susceptible populations, and we wanted to look at early life experiences,” said Erin Haynes, an environmental health researcher with the University of Cincinnati. “And in this age range, once they’re 7 or 8, we can do many cognitive tests that we couldn’t do on a 5-year-old.”

Haynes said she will work with local schools and the Community Advisory Board already established, sending fliers out to let families know about the testing. Children must have lived in the area their entire lives and their mothers must have experienced their pregnancy in the area as well.

Testing should begin in the fall and will be a three-year process, said Haynes.

“It will be about two-and-a-half-hour tests for the kids, with lots of breaks,” she said. “We’ll test their motor function and their learning behavior... some children will have personal air monitors.”

Researchers will also do environmental tests, including collecting home dust and examining air and water.

There has been little research completed on the health effects of manganese, which is required at a low level in human bodies. Some studies have linked high levels to tremors or movement disorders in children.

Manganese is emitted into local air by Eramet, on Ohio 7 outside Marietta, the only manganese refinery in the U.S. and Canada.

The preliminary M.A.P.S. study found elevated levels of manganese in Marietta residents, compared to those who live in other cities, but health effects couldn’t be determined conclusively.

This time around, Haynes will partner with Marietta College to complete the study into the possible effects of manganese on neurological and cognitive development in children.

Researchers at the college's Center for Families and Children will assist in the data collection, gathering hair and blood samples along with shed teeth.

Psychology professor Mary Barnas and graduate students Allison Paytosh and Philip Lemaster will be the primary data collectors, while biology professor David Brown and his students will research manganese distribution.

"There will be two to three years worth of data collection and the remaining two or more years (of the funding) will be spent analyzing what's been collected," Barnas said.

The graduate students, who will be trained at the University of Cincinnati this summer, will help with cognitive testing and family interviews.

"I think this is a unique opportunity for us to be able to work on this," said Lemaster. "It's a job that we'll have the whole time we're attending graduate school at Marietta."