Associated Press

Trace arsenic in water may be linked with diabetes

By CARLA K. JOHNSON – 1 day ago

CHICAGO (AP) — A new analysis of government data is the first to link low-level arsenic exposure, possibly from drinking water, with Type 2 diabetes, researchers say.

The study's limitations make more research necessary. And public water systems were on their way to meeting tougher U.S. arsenic standards as the data were collected.

Still, the analysis of 788 adults' medical tests found a nearly fourfold increase in the risk of diabetes in people with low arsenic concentrations in their urine compared to people with even lower levels.

Previous research outside the United States has linked high levels of arsenic in drinking water with diabetes. It's the link at low levels that's new. The findings appear in Wednesday's Journal of the American Medical Association.

"The good news is, this is preventable," said lead author Dr. Ana Navas-Acien of Johns Hopkins Bloomberg School of Public Health in Baltimore.

New safe drinking water standards may be needed if the findings are duplicated in future studies, Navas-Acien said. She said they've begun a new study of 4,000 people.

Arsenic can get into drinking water naturally when minerals dissolve. It is also an industrial pollutant from coal burning and copper smelting. Utilities use filtration systems to get it out of drinking water.

Seafood also contains nontoxic organic arsenic. The researchers adjusted their analysis for signs of seafood intake and found that people with Type 2 diabetes had 26 percent higher inorganic arsenic levels than people without Type 2 diabetes.

How arsenic could contribute to diabetes is unknown, but prior studies have found impaired insulin secretion in pancreas cells treated with an arsenic compound.

The policy implications of the new findings are unclear, said Molly Kile, an environmental health research scientist at the Harvard School of Public Health. Kile wrote an accompanying editorial in the journal.

"Urinary arsenic reflects exposures from all routes — air, water and food — which makes it difficult to track the actual source of arsenic exposure let alone use the results from this study to establish drinking water standards," Kile said.

Also, the findings raise a chicken-and-egg problem, she said, since it's unknown whether diabetes changes the way people metabolize arsenic. It's possible that people with diabetes excrete more arsenic.

The United States lowered arsenic standards for public water systems to 10 parts per billion in 2001 because of known cancer risks. Compliance was required by 2006, years after the study data were collected in 2003 and 2004.

On the Net:

- JAMA: http://jama.ama-assn.org
- Arsenic Map: http://water.usgs.gov/nawqa/trace/arsenic/
- EPA: http://www.epa.gov/safewater/arsenic/index.html