

Arsenic exposure could increase diabetes risk

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Inorganic arsenic, commonly found in ground water in certain areas, may increase the risk of developing type 2 diabetes, according to a study by researchers at the Johns Hopkins Bloomberg School of Public Health. The study found that individuals with diabetes had higher levels of arsenic in the urine compared to individuals without diabetes. The results are published in the August 20, 2008, issue of *JAMA*.

"Our findings suggest that low levels of exposure to inorganic arsenic may play a role in diabetes," said Ana Navas-Acien, MD, PhD, lead author of the study and assistant professor with the Bloomberg School's Department of Environmental Health Sciences. "While prospective studies are needed to establish whether this association is causal, these findings add to the existing concerns about the long-term health consequences of low and moderate exposure to inorganic arsenic."

Inorganic arsenic is found naturally in rocks and soils. In the U.S., most exposure to inorganic arsenic comes from contaminated drinking water. Foods such as flour and rice can also provide small quantities of inorganic arsenic, particularly if grown or cooked in areas with arsenic contamination in soil or water. Seafood is a source of organic arsenic compounds that have little or no toxicity.

Researchers examined randomly selected urine samples taken from 788 U.S. adults 20 years or older that participated in a 2003—2004 National Health and Nutrition Examination Survey. The results were adjusted for diabetes risk factors, including body mass index and for organic arsenic compounds found in seafood.

In the U.S., approximately 13 million people live in areas where the concentration of inorganic arsenic in the public water supply exceeds standards established by the U.S. Environmental Protection Agency, primarily in the West, Midwest and Northeast regions. Dietary intake of inorganic arsenic in the U.S. ranges from 8.4 to 14 micrograms per day for various age groups.

The authors concluded that given widespread exposure to inorganic arsenic from drinking water worldwide, clarifying the contribution of arsenic to the diabetes epidemic is a public health research priority with potential implications for the prevention and control of diabetes.

Source: Johns Hopkins University Bloomberg School of Public Health

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