People vary widely in ability to eliminate arsenic from the body

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Large variations exist in people's ability to eliminate arsenic (sample shown) from the body, a new study shows. Credit: Wikimedia Commons

Large variations exist in peoples' ability to eliminate arsenic from the body, according to a new study that questions existing standards for evaluating the human health risks from the potentially toxic substance. The study found that some people eliminate more than 90 percent of the arsenic consumed in the diet. Others store arsenic in their bodies, where it can have harmful effects. The research, based on the first application of new methods for studying arsenic, is scheduled for the Sept. 21 issue of ACS's *Chemical Research in Toxicology*.

In the study, Kevin Francesconi and colleagues point out that drinking water in many parts of the world, including some regions of the United States, contain amounts of arsenic that exceed the World Health Organization's maximum acceptable levels. Consumption of seafood, the

article notes, is another major source of arsenic contamination. Health effects from chronic arsenic exposure include skin and internal cancers, cardiovascular disease, and possibly diabetes, it adds.

The scientists describe monitoring arsenic excretion in the urine of human volunteers. They found that ability to eliminate arsenic from the body varied greatly, with some participants excreting up to 95 percent of the ingested arsenic but others eliminating as little as four percent.

"This observed individual variability in handling [arsenic] exposure has considerable implications for the risk assessment of arsenic ingestion," the paper states. It adds that further study is needed to assess potential risks to humans consuming seafood products. "The data presented here suggest that the long held view that seafood arsenic is harmless because it is present mainly as organoarsenic compounds needs to be reassessed."

More information: "Individual Variability in the Human Metabolism of an Arsenic-Containing Carbohydrate, 2',3'-Dihydroxypropyl 5-deoxy-5-dimethylarsinoyl-ß-D-riboside, a Naturally Occurring Arsenical in Seafood," *Chemical Research in Toxicology*

Source: American Chemical Society (news : web)