

Arsenic in domestic well water could affect two million people in the US

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Clean drinking water can be easy to take for granted if your home taps into treated water sources. But more than 44 million people in the U.S. get their water from private domestic wells, which are largely

unregulated. Of those, a new report estimates that about 2 million people could be exposed to high levels of naturally occurring arsenic in their water. The study appears in ACS' *Environmental Science & Technology*.

Long-term exposure to [inorganic arsenic](#), which is found in the earth's crust and is widely distributed in the environment, can potentially cause a variety of health problems including cancers. Also, recent research suggests that for pregnant women, low-level exposure could affect fetal growth and pre-term birth. Municipal water-treatment systems can filter [arsenic](#) out, but monitoring and mitigating contaminants in well water is up to private owners. Determining who might be getting exposed to arsenic from their well water on a national scale hasn't been adequately sussed out. So Joseph D. Ayotte and colleagues at the U.S. Geological Survey and the U.S. Centers for Disease Control and Prevention wanted to fill that gap.

To map well-water arsenic levels, the researchers developed a model incorporating tens of thousands of existing arsenic measurements from wells across the U.S. They also considered factors that affect [arsenic concentrations](#), including regional rainfall, geology and aquifer chemistry. The model identified arsenic hotspots where wells would likely have levels of arsenic higher than 10 micrograms per liter, the threshold concentration set by the Environmental Protection Agency as the maximum contaminant level. Hotspots were largely concentrated in New England, a swath of territory in the upper Midwest, the Southwest and southern Texas. Based on these findings, the study estimated that the affected wells serve about 2.1 million people, many of whom might be unaware of the potential health hazard. The takeaway, researchers say, is that all private well owners should test their wells for arsenic. The information could help officials analyze health risks and possible mitigation strategies.

More information: "Estimating the High-Arsenic Domestic-Well

Population in the Conterminous United States" *Environmental Science & Technology* (2017). pubs.acs.org/doi/abs/10.1021/acs.est.7b02881

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