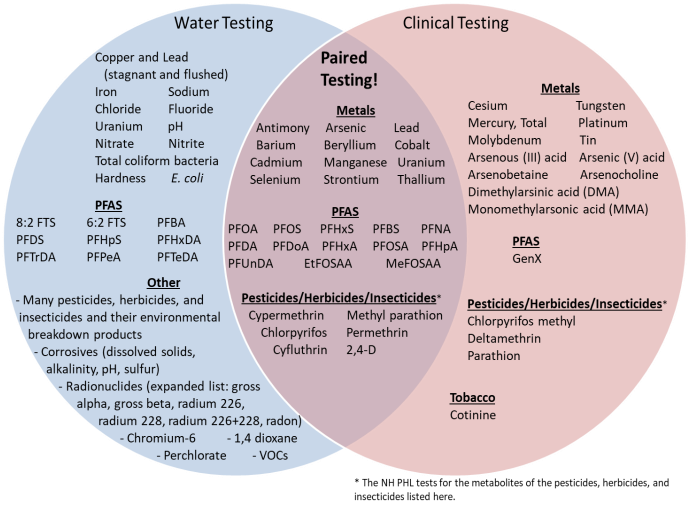
NEW HAMPSHIRE ENVIRONMENTAL PUBLIC HEALTH TRACKING

NH Tracking and Assessment of Chemical Exposures (TrACE) Study

Assessing Chemical Exposure

Biomonitoring is the assessment of chemicals or their breakdown products in human specimens such as urine, blood, or tissue. These chemicals may be naturally occurring such as arsenic and uranium. They may also be from industrial sources such as pesticides.

The 2019 TrACE Study was New Hampshire's (NH) first surveillance biomonitoring study and tested for 50 chemicals in participants blood, serum, and urine. Hundreds of chemicals were also tested for in participants' household drinking water with many of the same chemicals tested for in people. The goal of collecting such a large dataset was to gain a baseline understanding of chemical exposure in NH residents and explore connections between water quality and human exposure.



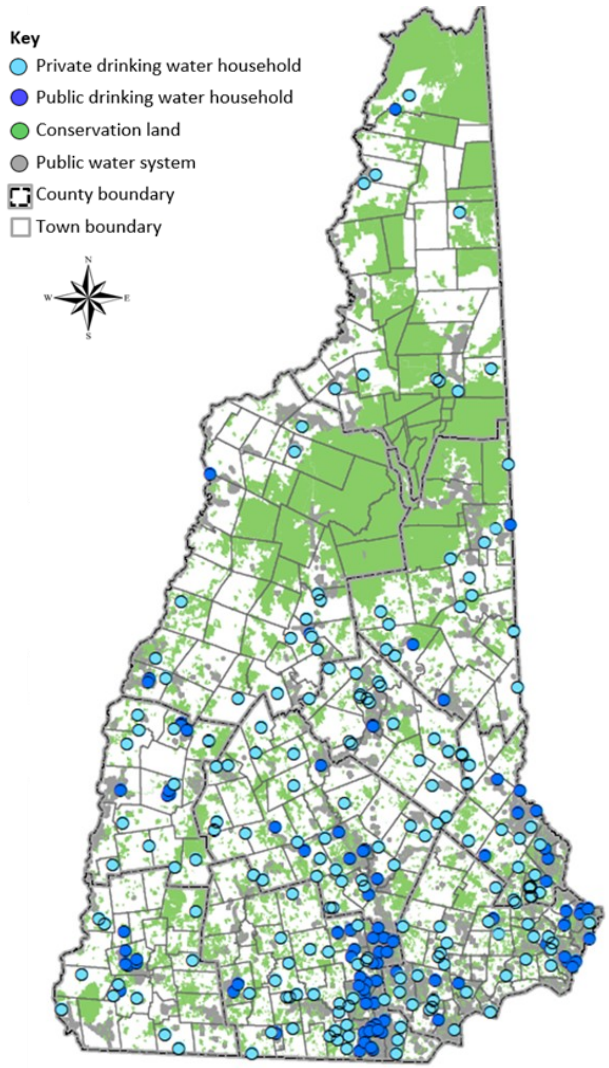
Exploring the Links between Water Quality and Human Health

Public drinking water is subject to state and federal regulations and monitored for contaminants that pose a risk to human health, however in NH private well owners are solely responsible for testing and treating their drinking water.

In NH about 40% of the state's population relies on unregulated private wells for their main source of household drinking water, and many NH wells have high levels of naturally occurring arsenic and other contaminants of concern due to the underlying bedrock. Evaluating water quality along with clinical test results was of particular interest in this study.

NH TrACE Study Samples by Water Source Type

The map below displays TrACE participants across NH and their drinking water source, private wells in light blue and public water systems in darker blue.



Comparing Across Drinking Water Source

The NH TrACE study evaluated participants clinical (blood and urine) and drinking water quality results based on their home drinking water source, either unregulated private wells or regulated public water. This drinking water source comparison adds to our understanding of the possible differences in exposure to contaminants and health risks based on drinking water type.

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Taking Action

- **Talk with your healthcare provider and explore your potential for health effects from chemicals.** TrACE Study participants are encouraged to share their clinical and water results with their healthcare providers to determine if they should take steps to reduce their exposure to chemicals.
- **Continue to test your water quality regularly as conditions and contaminants can change over time. Install a treatment system and maintain it (if indicated by testing).** For more information about water testing and water treatment options, please contact:

  Testing: NH Public Health Laboratory at (603) 271-3445 or waterlab@dhhs.nh.gov or visit this list of accredited drinking water testing labs.

  Treatment: NHDES at (603)-271-2513 DWGBinfo@des.nh.gov
- **Test your home for indoor radon gas and install a mitigation system (if indicated).** Radon can enter your home from cracks in the foundation or seams along the walls or from well water. Exposure to radon in air is the 2nd leading cause of lung cancer deaths in the US. Radon in well water is also a concern if air levels are elevated.

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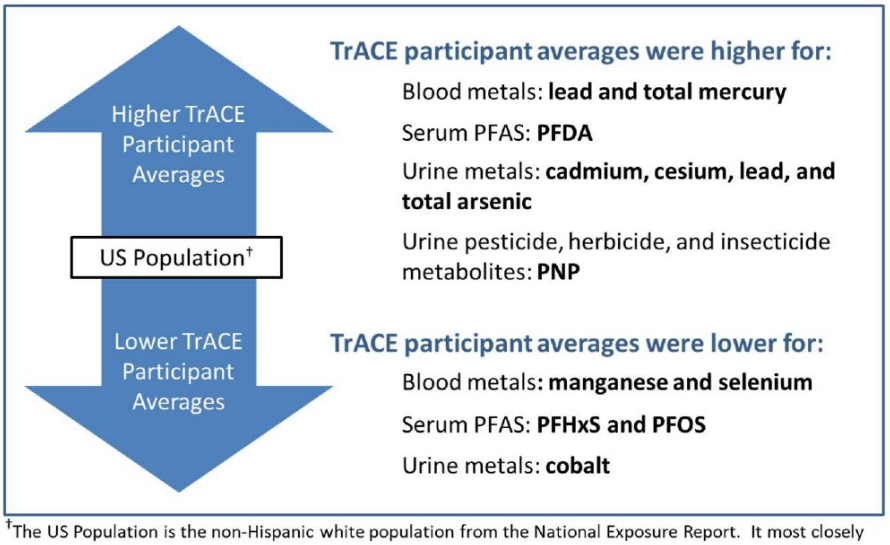
Comparing NH TrACE Participants and US Populations

The purpose of the 2019 NH TrACE Study was to see if NH residents had more, less, or similar amounts of chemicals in their bodies (on average) compared to the representative US population from the CDC National Exposure Report (http://cdc.gov/exposurereport).

Major findings are listed in the figure below. NH TrACE participants had higher average lead and mercury blood levels than the US average. Arsenic, cadmium, cesium, and lead in urine was also higher in NH TrACE participants when compared to US average levels. More details about possible sources of exposure of these contaminants can be found in the full TrACE Summary Report.



†The US Population is the non-Hispanic white population from the National Exposure Report. It most closely matches the demographics of NH.

This fact sheet is a summary of the 2019 TrACE Study. Not all findings in the Summary Report are included here. Several considerations should be taken into account when reviewing and interpreting these results, please see full report for methods and limitations.

How Can Biomonitoring Help You?

Biomonitoring can help you become more aware of what chemicals are in your body. These chemicals may be coming from the air; the dust around your house; your water, soil, or food; or even the products you use daily (such as skin creams or insect repellants). Often, very small amounts of chemicals over a short period of time are not harmful, but it's important to know what chemicals you come in contact with, so you can make informed healthy choices and reduce chemical exposure over the course of your lifetime.

Contact BiomonitoringNH

Email: BiomonitoringNH@dhhs.nh.gov
Phone: (603) 271-4611

Biomonitoring New Hampshire