GenX Information

What is GenX?

GenX is the trade name for a chemical that is a member of a large group of man-made chemicals known as per- and polyfluoroalkyl substances (PFAS). PFAS have been used in commercial products such as food packaging, nonstick coatings, and firefighting foam. GenX is manufactured as a replacement for another PFAS and can also be produced as a byproduct of certain manufacturing processes.

How can I be exposed to GenX?

Based on current information, most exposure to GenX occurs through drinking contaminated water. Groundwater (including well water) and surface water (including water from rivers, lakes and streams) may contain elevated levels of GenX and other PFAS.

There is limited information about exposure to GenX from sources other than drinking water. People can be exposed to other types of PFAS in multiple ways, including through food, indoor dust, consumer products, and workplaces such as manufacturing facilities where PFAS are used.

How can GenX affect my health?

The health effects of contact with any hazardous substance depend on how much, for how long and the way in which you are exposed. The effects also depend on personal factors such as family history, overall health, and lifestyle.

There is limited information about the health effects of GenX. Laboratory studies of animals show effects on the liver at GenX exposure levels lower than levels where other effects are seen, indicating that the liver may be sensitive to GenX. Other negative effects seen in animal studies at higher levels include effects on the kidney and immune system, and developmental effects as well as liver, pancreatic, and testicular cancer. Animal toxicity studies are a helpful starting point for understanding the potential health effects of GenX, but the relevance to human health cannot be fully understood without more human research studies.

Scientists are actively studying the health effects of GenX and other compounds to learn more. NCDHHS continues to work with various federal and state partners to review all new health and toxicity information about these compounds and shares new information with communities, as it becomes available.

What guidelines have been set for human health?

There are no federal health guidelines for GenX.

In 2017, NCDHHS used available toxicity information to set a provisional health goal for GenX in drinking water at 140 nanograms per liter (ng/L) or parts per trillion (ppt). This level was calculated using the available toxicity studies and to protect the most vulnerable populations (i.e. bottle-fed infants). As new information becomes available the provisional health goal may change.

The provisional drinking water health goal is not a regulatory level and is not a boundary line between a "safe" or "dangerous" level of GenX but can be used to provide information to affected communities and residents about potential health risks. The provisional drinking water health goal is for drinking water only and should not be compared to GenX levels in fish, rainwater, or air.

Where can I find more information?

- NCDHHS GenX Webpage: https://epi.dph.ncdhhs.gov/oee/a_z/genx.html
- NCDHHS PFASWebpage: https://epi.dph.ncdhhs.gov/oee/a_z/pfas.html
- NC Department of Environmental Quality (NC DEQ) GenX Investigation: https://deq.nc.gov/news/hot-topics/genx-investigation
- Federal resources on Per- and Polyfluoroalkyl Substances (PFAS)
  - ATSDR: www.atsdr.cdc.gov/pfas/index.html
  - EPA: www.epa.gov/pfas
  - FDA: www.fda.gov/food/chemicals/and-polyfluoroalkyl-substances-pfas

If you have concerns about health effects related to GenX or other chemicals, contact NCDHHS at 919-707-5900.