

FAQs: Below are questions asked by Donala customers and answers were provided CDPHE

Radium-226 and -228 Health Questions from Donala WSD Consumers

How much water at this level would a human have to consume to experience negative results? Many years of exposure to radiation and toxic chemicals can lead to increased risk for adverse health effects, like kidney toxicity and cancer. Not everyone who drinks water with radium at these levels will experience health impacts. At the maximum contaminant level (MCL) of 5 pCi/L for radium, the excess cancer risk is 1 in 10,000, which means that if 10,000 people drink water with this level of radium for a lifetime one of those 10,000 people would be expected to develop cancer related to the radium.

Radium at the levels typically found in drinking water in Colorado do not represent an acute or immediate health risk. People who have been drinking water containing these metals **over many years**, people with liver or urinary tract conditions and people who have been exposed to radiation through sources other than drinking water are at the greatest risk for developing health effects from long-term exposure to uranium or radium in their drinking water.

Do water filters or reverse osmosis remove Radium?

Several treatment processes can remove radium from drinking water, including ion exchange, reverse osmosis, nanofiltration and co-precipitation. The selection of a given treatment is based on the type and level of contaminants present, the volume of water needed to be treated and the cost of the treatment.

Do you know if humans absorb radium from granite countertops?

Per EPA: While granite and other decorative stone can contain some trace natural radioactivity, granite countertops are not considered to be a key contributor to radiation in the average home. Source: <https://www.epa.gov/radiation/are-granite-countertops-radioactive-are-levels-dangerous>

The greatest cancer risk from radium is from its breakdown product, radon. Radon is a gas that has been shown to cause lung cancer. We recommend radon testing for anyone that has not already had their home tested for radon (within the last 2-5 years).

Are upset stomachs in children a side effect of radium?

We encourage consumers to consult a doctor with any health concerns. EPA's Integrated Risk Information System indicates no information is available on the acute (short-term) noncancer effects of the radionuclides in humans. Cancer is the major effect of concern from the radionuclides. Radium at the levels typically found in drinking water in Colorado does not represent an acute or immediate health risk. People who have been drinking water containing these metals **over many years**, people with liver or urinary tract conditions and people who have been exposed to radiation through sources other than drinking water are at the greatest risk for developing health effects from **long-term exposure** to radium in their drinking water. Not everyone who drinks water with these levels of radium will experience adverse health effects.

The pCi limit for water is 5, is it the same for food?

Natural Radioactivity in Food: <https://www.epa.gov/radtown/natural-radioactivity-food>
Federal Standards for Radioactivity in Food: <https://www.epa.gov/radiation/what-federal-standards-address-radioactivity-food>

The U.S. Food and Drug Administration (FDA) sets standards for radioactivity in food. FDA sets derived intervention levels (DILs) - concentrations of radioactivity in food - which are used to determine whether domestic food in interstate commerce or imported food presents a safety concern. FDA determines whether protective actions are necessary on a case-by-case basis. There is not a Derived intervention level (DIL) set for radium in food in domestic commerce and food offered for import.

Is bottled water truly a better alternative? Is bottled water even regulated?

FDA regulates bottled drinking water. FDA has set Current Good Manufacturing Practices (CGMPs) specifically for bottled water. They require bottled water producers to:

- Process, bottle, hold and transport bottled water under sanitary conditions;
- Protect water sources from bacteria, chemicals and other contaminants;
- Use quality control processes to ensure the bacteriological and chemical safety of the water;
- Sample and test both source water and the final product for contaminants.

Is it safe to use the elevated water in a vaporizer?

You may wish to use bottled water or water from a home treatment system (i.e., reverse osmosis or ion exchange) in your vaporizer if you have health concerns

Why was Donala given 30 days to notify customers about the violation?

Donala WSD has met public notice distribution and reporting requirements thus far. The Colorado Primary Drinking Water Regulations (Regulation 11) require that Tier 2 public notice be provided to consumers within 30 days following notification of a combined radium MCL violation. Donala was notified of the violation by CDPHE on 7/23/2021 and had until 8/22/2021 to distribute public notice. The public notice was distributed to consumers within the allowable time frame on 8/20/2021. Public notice will be required to be redistributed every quarter that the system exceeds the MCL.

We understand it can be alarming for people to hear about contaminants in their drinking water. We would emphasize that the levels of radium we are talking about can increase people's risk of health impacts over many years or a lifetime of exposure. From that perspective, 30 days of additional exposure do not significantly increase the risks of potential health impacts.

Additional Information and Resources:

- Good resource on sources of radiation. Link from EPA's website:
<https://www.radiationanswers.org/radiation-sources-uses.html>
- Radium found in drinking water does not emit high amounts of gamma radiation, so bathing and showering do **not** pose significant risk.
- Radioactive metals, such as radium-226 and radium-228 occur naturally in Colorado's mineral-rich rock, and can dissolve into the groundwater wells used for drinking water supplies.

Concerned about how substances in your environment affect your health? Contact the Colorado Department of Public Health & Environment ToxCall line at 303-692-2606 or cdphe_toxcall@state.co.us