

Discussion with the Faculty Council

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7 October 2022

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- Carol Remmer Angle Distinguished Professor
- Associate Chair, Department of Environmental Sciences and Engineering
- **Other roles:** Institute for Environmental Health Solutions (Director), UNC Superfund Research Program (Director), Center for Environmental Health and Susceptibility (Associate Director, Translational Research)
- **Research:** understanding the health effects and biological mechanisms associated with exposure to toxic metals exposure and health effects
- **Involvement:** Scientific advisor, overseeing student volunteer recruitment training for water sampling

- Key points:

- I am partnering with the school, serving as a scientific advisor, and recruiting an environmental science-focused student work force for the rapid response
- There is no safe level of lead
- There are differences in the harms of lead exposure in children and adults
- The health effects are tied to timing of exposure (age), dose (concentration) and duration
- Risk is individualized
- There are several resources to turn to for more information
- The school is providing blood testing to anyone who works in or lives in, the affected buildings

THE TOXIC EFFECTS OF LEAD



BRAIN & NERVE DAMAGE



DECREASED MENTAL ABILITY & LEARNING DIFFICULTIES



SPEECH, LANGUAGE & BEHAVIOUR PROBLEMS



HEARING PROBLEMS



ANAEMIA



HIGH BLOOD PRESSURE



REDUCED GROWTH



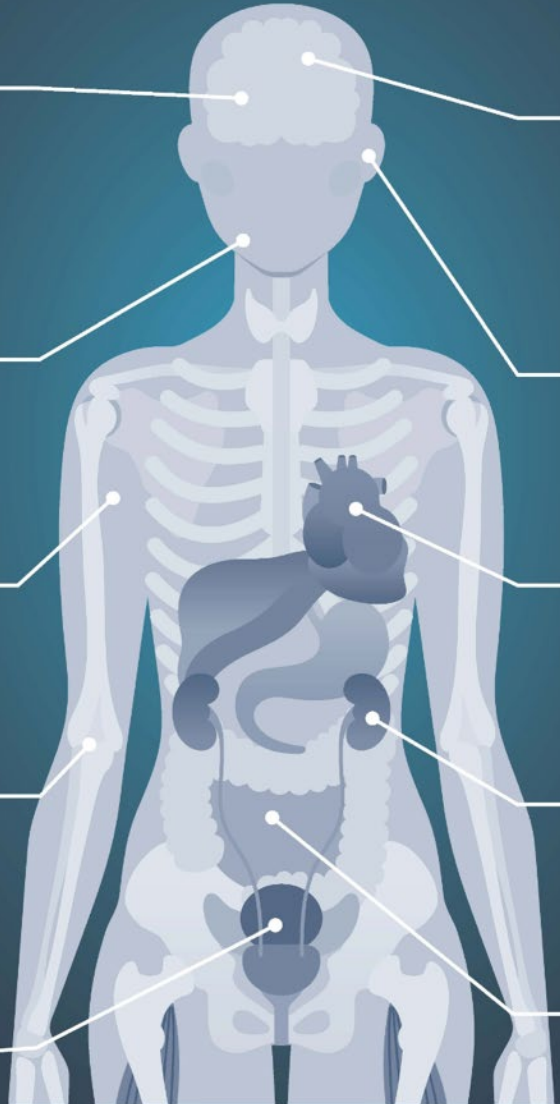
KIDNEY DAMAGE



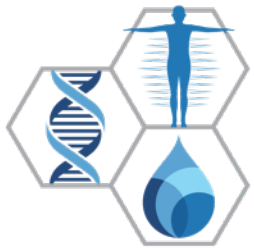
REPRODUCTIVE PROBLEMS (ADULTS)



DIGESTIVE PROBLEMS



- ❖ Lead is a well-recognized toxicant that has wide-ranging health impacts.
- ❖ Lead can cause damage to neurological, cardiovascular, gastrointestinal and hematological systems.
- ❖ Young children are particularly vulnerable because they have higher exposures than adults and because lead affects the developing brain, potentially resulting in reduced intellectual ability.



- ❖ The age during which lead exposure occurs is an important consideration when thinking about health consequences.
- ❖ For children, the Centers for Disease Control and Prevention (CDC) uses a blood lead reference value (BLRV) of **3.5** ($\mu\text{g}/\text{dL}$) or more.
- ❖ For adults, this level is **5** ($\mu\text{g}/\text{dL}$).

FACT: LEAD IS TOXIC

It is harmful to everyone and
DAMAGES:



BRAIN



KIDNEYS



LIVER



BLOOD



REPRODUCTIVE SYSTEM

Young children

are most vulnerable. Their nervous systems are still developing and they absorb **4-5 times more than adults**, which can cause:

- intellectual disability
- underperforming at school
- behavioural issues



In adults

lead exposure increases the risk of:

- ischaemic heart disease
- stroke



In pregnant women

lead exposure damages many organs but also affects:

- the developing foetus



There is no safe level of lead exposure



- Training students across campus with a focus on our strong environmental programs



Celeste Carberry



Anastasia Freedman



Katelyn Huff



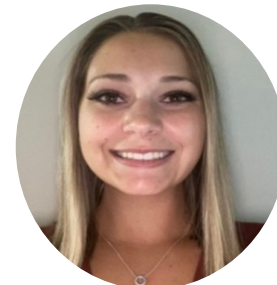
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Stormwater

Lead in Campus Drinking Water

Lead FAQs

General Information

Water Sa

We understand that the news about lead in some drinking water sources at UNC-Chapel Hill is concerning. The Environment, Health and Safety (EHS) at UNC-Chapel Hill is actively working to determine the extent of the problem and to develop solutions. The University is also coordinating with OWASA on these efforts.

Drinking water contaminated with lead can be harmful to health, especially for small children and pregnant women. This information is designed to provide resources on the health impacts from lead exposure, information on lead testing at UNC-Chapel Hill, and steps for addressing lead in drinking water.

Q: How do I know if there is lead in my drinking water?

A: According to the United States Environmental Protection Agency (US-EPA), testing drinking water is the only way to confirm whether lead is present. According to Centers for Disease Control and Prevention (CDC), the best way to know if there is lead in drinking water is to identify potential sources and test the water. You cannot see, taste, or smell lead in drinking water.

Q: How does lead get into drinking water?

A: According to the CDC, lead can enter drinking water when a chemical reaction occurs in plumbing materials that contain lead. This is known as corrosion - dissolving or wearing away of metal from the pipes and fixtures. Lead in water can come from lead components and lead service lines that connect buildings to the main water line. Orange Water And Sewer Authority's (OWASA) water distribution system has no known lead pipes. OWASA looked

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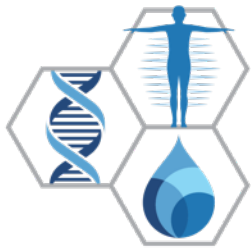
Topics

Campus Drinking Water

Chemical Storage and Inventory

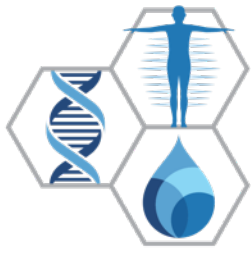
Campus Drinking Water

The main UNC-Chapel Hill campus receives its tap water from the [Orange Water and Sewer Authority \(OWASA\)](#). OWASA's water supply originates as rainfall within the Cane Creek and University Lake watersheds.



Resources:

- ❖ <https://ehs.unc.edu/topics/campus-drinking-water/>
- ❖ <https://ie.unc.edu/lead-in-water-resources/>
- ❖ <https://www.cdc.gov/nceh/lead/prevention/health-effects.htm>
- ❖ <https://www.who.int/campaigns/international-lead-poisoning-prevention-week/2021/about>



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Thank you!



Audrey
Bousquet



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Brennan



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