Knowledge of Heavy Metal Exposure and Remediation in Urban Gardens

Investigating Atlanta residents' awareness and understanding of soil contamination

Why does this matter?

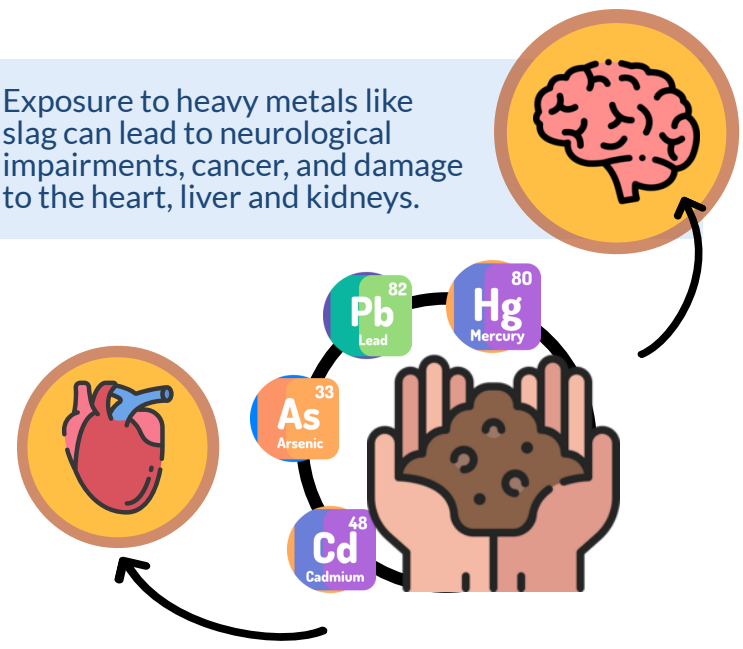


Urban gardening is growing in popularity and has many benefits, including increasing access to fresh foods.

But some urban soils are contaminated with heavy metals.

Slag is a by-product from iron smelting, an industrial process, that has contaminated the soil with heavy metals for some Atlanta residents.

Exposure to heavy metals like slag can lead to neurological impairments, cancer, and damage to the heart, liver and kidneys.



Investigating urban agriculture is crucial for improving food access, fostering community, and ensuring safe gardening by addressing soil contamination.

What did we want to know?

What level of awareness and concern do Atlanta gardeners have about heavy metals in soil (including slag) and soil remediation options?

What did we do?

We partnered with Historic Westside Gardens to develop a survey that asked 51 community and home gardeners in Atlanta about their:

- **knowledge of soil contaminants and their health effects**
- **experiences gardening and perception of soil contamination**
- **access to educational and soil testing resources**

We followed up and conducted interviews with nine participants to gain more insight on the survey responses (selected quotes are included in the results).

What did we find? →

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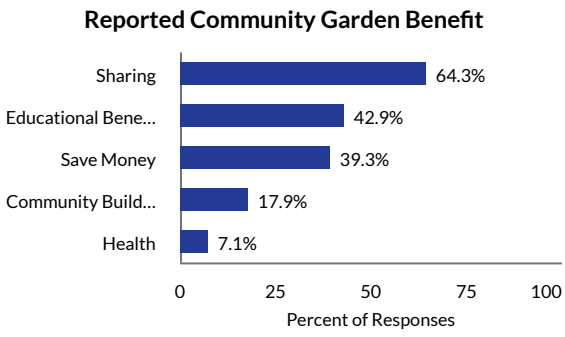
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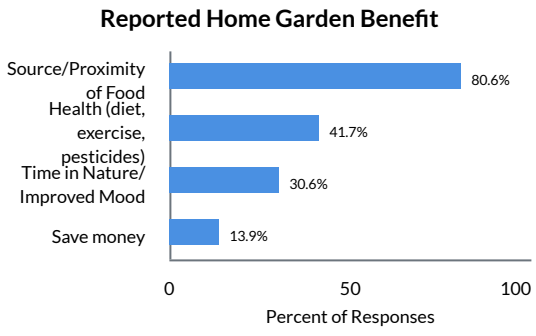
What did we find?

Gardeners' experience and their knowledge and concern about soil contamination

Benefits of gardening

Gardeners reported multiple benefits from gardening. Community gardeners benefit from **sharing and education**. Home gardeners experience **convenience and health benefits**.

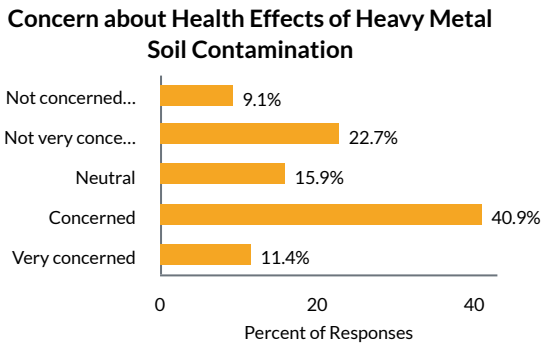


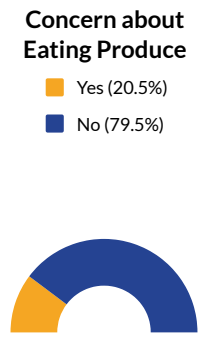


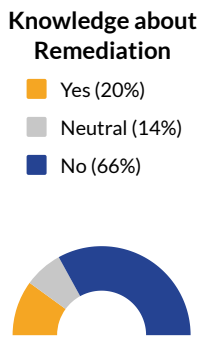
> *But if I found out my soil was contaminated, I would of course want to remove all the contaminants from the soil. But I don't know who I would even go to for that.*

Heavy Metal Contamination Knowledge and Concerns

Most participants were **concerned about the health impacts of contaminated soil**, yet about 80% **weren't concerned about consuming garden produce**, regardless of soil testing, and were **unaware of how to get rid of contaminants**.







Additional Insights

- Most gardeners had not previously tested their soil.
- White participants and home gardeners were most concerned about soil contamination.
- More White participants than Black participants were aware of the health effects and sources of heavy metal soil contamination and could accurately describe slag.

What does this mean for you?

To prevent exposure to heavy metals and slag...



Wash garden fruits and vegetables before eating.

Keep children out of the soil.





Wash hands after gardening.

Remove shoes before entering the house.



I believe the overall benefits of home and community gardening outweigh the possible soil contaminants issue. But I want to learn [to] make better decisions.

Key Takeaways

- Urban gardening has many benefits for both community and home gardeners.
- Most participants, regardless of race, couldn't define slag, underscoring the need for education.
- Community gardeners, especially in black communities, should be prioritized for education on the sources and health effects of soil contamination.
- Educating gardeners on soil contamination risks and affordable remediation options may motivate them to test and treat their soil.

Additional Resources

- Host a soilSHOP with the Saikawa Lab
- Explore ATSDR's Soil, Gardening and your Health
- Read about Soil Contaminants from the Soil Science Society of America (SSSA)
- Get more information about the Westside Lead Superfund Site from the EPA.

This infographic summarizes a community-engaged project conducted by the Saikawa Lab and HERCULES partners: Balotin, L., Distler, S., Williams, A., Peters, S., Hunter, C. M., Theal, C., Frank, G., Alvarado, T., Hernandez, R., Hines, A., & Saikawa, E. (2020). Atlanta Residents' Knowledge Regarding Heavy Metal Exposures and Remediation in Urban Agriculture. *International journal of environmental research and public health*, *17*(6), 2069. https://doi.org/10.3390/ijerph17062069