

BACKGROUND

Beginning in 2014, lower Norwood Borough residents contacted the Environmental Protection Agency (EPA), Agency for Toxic Substances and Disease Registry (ATSDR) and Pennsylvania Department of Health (PADOH) to express concerns and inquire whether historic landfill contamination was the source of cancer and multiple sclerosis (MS) cases in their community. From 1950 to 1963, wooded areas adjacent to the community were used as a landfill and town dump.

The PADOH evaluated EPA 2017-2018 sampling data collected from residential and non-residential surface soil (21 and 17 samples, respectively), and Darby and Muckinipattis Creek sediment and surface water (8 samples each) to determine whether chemical concentrations at these sampling locations could harm human health. PADOH evaluated incidental ingestion (eating/drinking/swallowing small amounts of contaminated soil, water, or sediment) and dermal exposures (skin contact with contaminated particles), as well as exposures from child soil-pica behavior (which is uncommon and involves eating soil). Additionally, PADOH reviewed the state's cancer registry for four time periods between 1985-2019 to compare cancer incidence rates at Norwood and surrounding boroughs (Folcroft and Prospect Park) to Delaware County and state rates. PADOH's Health Consultation report on this evaluation is available [online](#).

WHAT WERE THE MAIN FINDINGS BASED ON THE CHEMICALS DETECTED?

Non-Cancer Health Effects: Incidental ingestion and dermal exposures to chemicals at the sampling locations were unlikely to cause adverse non-cancer health effects in children or adults. Lead was detected and there is no presumed safe exposure level to lead, particularly for children. Lead can be found throughout our environment from fossil fuels, including past use of leaded gasoline and lead-based paint in homes, and from some types of industrial facilities.

Lifetime Cancer Risk: As a health protective approach, PADOH considered each residential soil sample as independent from one another. Accordingly, the highest estimated lifetime excess cancer risk was 3 in 10,000 for children and 2 in 100,000 for adults based on the highest benzo[a]pyrene-equivalent polycyclic aromatic hydrocarbon (BaP-PAH) sample. This risk is based on a single residential soil sample with BaP-PAH concentrations >3 times above all others, and assumes daily exposure to this concentration from birth up to age 21 for children, and for 33 consecutive years for adults.

WHAT WERE THE CANCER DATA RESULTS?

Except for lung cancer, age-adjusted cancer data analysis did not show consistent patterns for the 22 cancer types analyzed. Lung cancer incidence rates were mostly statistically higher among Norwood-area men and women for all four time-periods assessed (1985-1994, 1995-2004, 2005-2014, and 2015-2019; note: 2019 is the latest year of data at time of this report). However, the cancer registry only collects information on age and sex and not other significant known cancer risk factors, such as smoking, family history, residential or occupational history, or past environmental exposures.

IS THE COMMUNITY AT RISK FOR MULTIPLE SCLEROSIS (MS)?

Since there is no known cause or registry for MS, PADOH could not assess MS. Chemical exposures were below levels known to induce neurological or immune system effects in scientific studies.

WHAT ARE PADOH'S RECOMMENDATIONS AND NEXT STEPS?

As a general precaution, to prevent possible exposures to lead from soil, residents should ensure that soil is not tracked inside the home and that young children avoid playing on bare soil. Crop uptake of chemicals from soil is generally low, but as further precaution, residents can use garden beds and pots with clean soil, mix additional compost into in-ground gardens, and wash and peel root crops and outer leaves of vegetables before eating. PADOH will assess EPA's expanded 2020 sampling data for this site, which EPA released in 2021, as an addendum to this Health Consultation.

**If you have any questions,
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