Elevated Blood Lead Levels among Adults, Georgia, 2018-2024

Lead is a soft, malleable heavy metal that is highly toxic to humans and animals. It can be found in the environment, in homes, and in the workplace. Lead is a neurotoxin and can accumulate in the brain, nerves, organs, and bones. Lead poisoning can cause hypertension, anemia, cognitive dysfunction, nerve damage, adverse effects on kidney function, and infertility in men and women. Adults are primarily exposed to lead by inhaling lead dust and fumes at work or in hobbies involving lead.[1,2]

In the United States, **about 90% of adult lead poisoning is caused by occupational exposures**.[3] The primary exposure pathways of lead are through inhalation and ingestion (eating, drinking, or smoking with contaminated hands or on contaminated surfaces).[1,2] Certain industries are more likely to have lead exposures, such as manufacturers of ceramics, electrical components, plumbing fixtures, lead bullets, and rechargeable batteries. Construction workers, for example, can be exposed to lead during the removal, renovation, or demolition of structures painted with lead-based paint. Lead exposure can occur not only during production, but also during the use (e.g., shooting ranges), repair (e.g., radiator repair), and recycling (e.g., battery recycling) of lead containing materials.[1]

Children of workers in lead-involved industries have a higher risk of having an elevated blood lead level (BLL) due to take-home lead exposure (i.e., when an adult inadvertently brings lead dust home from the worksite on their clothes, shoes, skin, or hair).[2,4] The average BLL in the general U.S. adult population is 0.9 µg/dL. BLLs are considered elevated at 3.5 µg/dL or greater in both adults and children. BLLs of 5 µg/dL or greater are used by the national Adult Blood Lead Epidemiology Surveillance (ABLES) program to indicate an elevated BLL for surveillance purposes.[5] The state of Georgia requires that all BLL screening and follow-up test results be reported to the Department of Public Health (DPH) within seven days.

This report summarizes the burden of elevated BLL among Georgia residents aged 16 years and older during 2018–2024.

- The annual **prevalent number** of Georgia residents aged 16 years and older with a reported elevated BLL of 5 µg/dL or greater decreased from 1,995 in 2018 to 1,426 in 2024.[3]

- The number of **new or incident cases** of elevated BLL among persons aged 16 years and older in Georgia decreased from 1,038 in 2018 to 682 in 2024, a percent decrease of 34% (Table 1).

Table 1. Number of Incident Cases of Elevated BLL among Persons Aged 16 Years or Older, Georgia, 2018 - 2024							
	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
BLL ≥ 5 µg/dL	1,038	941	595	761	878	743	682
BLL ≥ 10 µg/dL	747	570	395	484	566	431	350
BLL ≥ 25 µg/dL	194	130	119	143	159	126	106
BLL ≥ 40 µg/dL	22	28	29	18	18	25	15

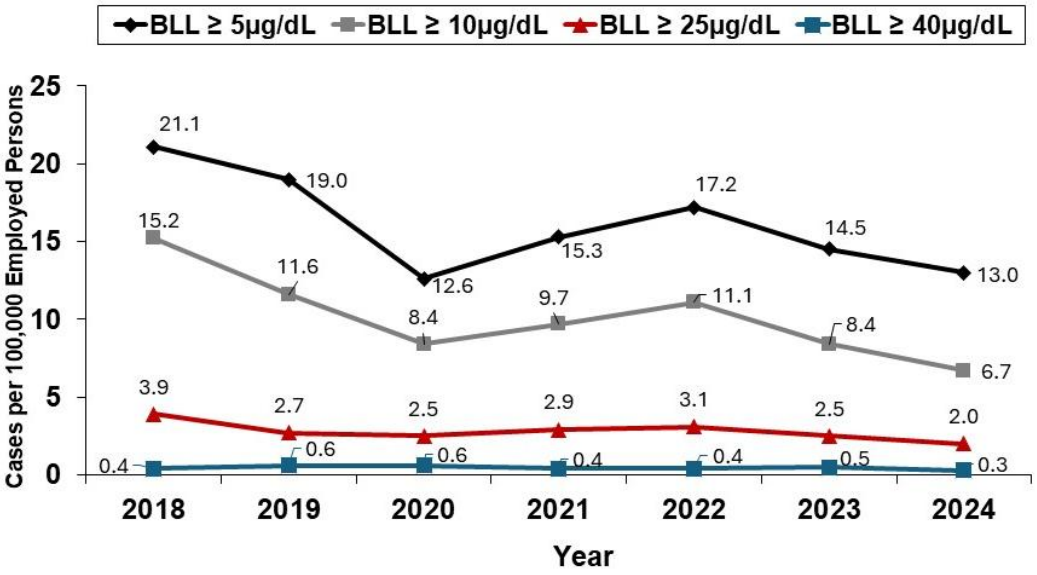
- In 2024, there were 834 prevalent cases reported among persons aged 16 years and older in Georgia with an elevated BLL of **10 µg/dL or greater**. Of these cases, 350 were incident cases (Table 1).
- There were 165 cases reported among persons aged 16 years and older in Georgia during 2024 that had an elevated BLL of **25 µg/dL or greater**. Of these cases, 106 were incident cases (Table 1).
- There were 18 cases reported among persons aged 16 years and older in Georgia during 2024 that had elevated BLL **40 µg/dL or greater**. Of these cases, 15 were incident cases (Table 1).

Table 2. Percent of Reported Incident Cases of Elevated Blood Lead Levels (≥5 µg/dL) by Demographics, 2023-2024		
Demographic Characteristics	**N**	**Percent**
Age Group (years)		
16-24	216	15%
25-34	339	24%
35-44	280	20%
45-54	239	17%
55-64	201	14%
65+	150	11%
Sex*		
Male	1,232	88%
Female	162	12%
Race*		
White	211	41%
Black	264	51%
Other	42	8%
Ethnicity*		
Hispanic	54	11%
Non-Hispanic	424	89%

*Note: Sex reported for 98% of cases. Race reported for 36% of cases. Ethnicity reported for 34% of cases. Other race includes Asian, American Indian/Alaska Native, Native Hawaiian/Other Pacific Islander. Data by race and ethnicity should be interpreted with caution due to incomplete data reported.

- About 1 in 4 (24%) incident cases of elevated BLL during 2023-2024 were among adults aged 25-34 years (Table 2).
- Almost 9 of 10 (88%) incident cases of elevated BLL during 2023-2024 were among males (Table 2).

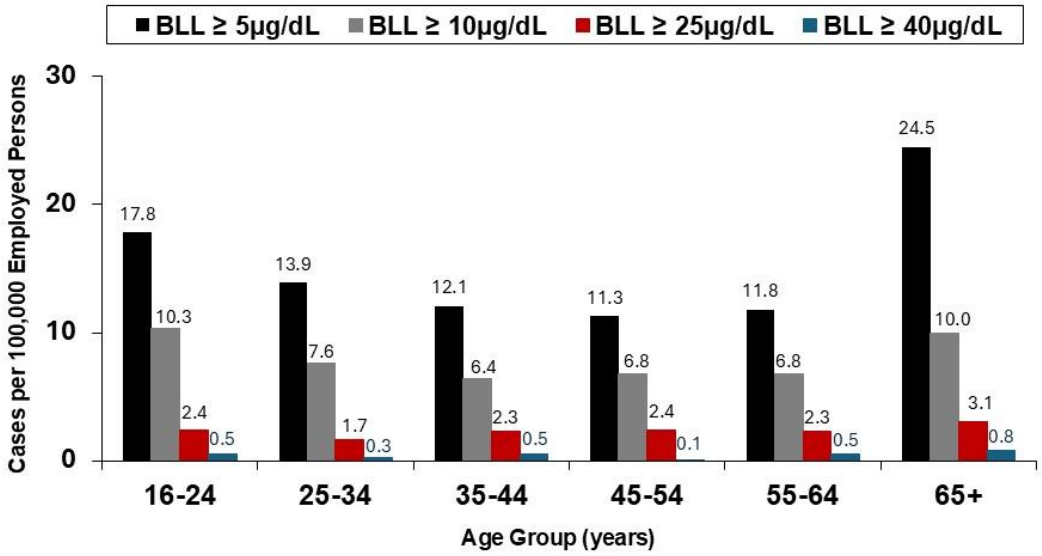
Figure 1. Annual Incidence Rate of Elevated Blood Lead Levels among Persons Aged 16 Years and Older, Georgia, 2018-2024



Source: Georgia Adult Blood Lead Epidemiology Surveillance (ABLES)

- The incidence rate[3,4] per 100,000 employed persons aged 16 years and older with BLL ≥ 5 µg/dL decreased from 21.1 in 2018 to 12.6 in 2020 and then increased to 17.2 in 2022, before decreasing again to 13.0 in 2024 (Figure 1).
- The incidence rate[3,4] of BLL ≥10 µg/dL per 100,000 employed persons aged 16 years and older decreased from 8.4 in 2023 to 6.7 in 2024 (Figure 1).

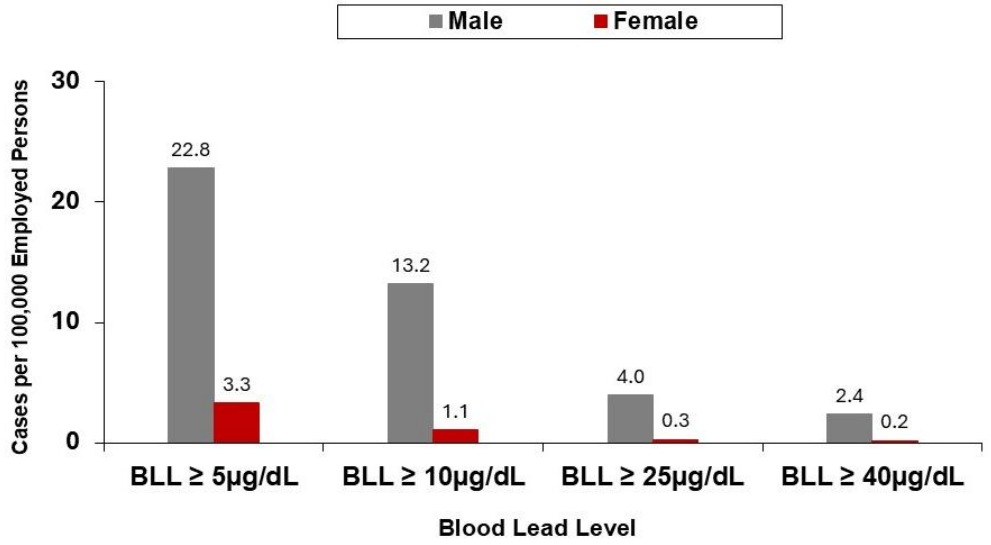
Figure 2. Age-specific Incidence Rates of Elevated Blood Lead Levels among Persons Aged 16 Years and Older, Georgia, 2023-2024



Source: Georgia Adult Blood Lead Epidemiology Surveillance (ABLES)

- During 2023-2024, the incidence rate[3,5] of elevated BLL ≥5 µg/dL per 100,000 employed persons was highest among persons aged 65 years and older at 24.5, followed by persons aged 16-24 years at 17.8 (Figure 2).
- The incidence rate[3,4] of BLL ≥5 µg/dL was higher among males (22.8 per 100,000 employed persons) than females (3.3 per 100,000 employed persons) (Figure 3).
- The DeKalb (n=198), East Central (n=188), and East Metro (n=123) Public Health Districts had the highest number of incident cases of elevated BLL ≥ 5 µg/dL during 2023-2024 (Table 3).
- During 2023 – 2024, incidence rates[3,6] of BLL ≥5 µg/dL were significantly higher than the state rate (13.7 per 100,000 employed persons) in the DeKalb, North Central, and East Central Public Health Districts (Table 3; Map 1).

Figure 3. Sex-specific Incidence Rates of Elevated Blood Lead Levels among Persons Aged 16 years and Older, Georgia, 2023-2024



Source: Georgia Adult Blood Lead Epidemiology Surveillance (ABLES)

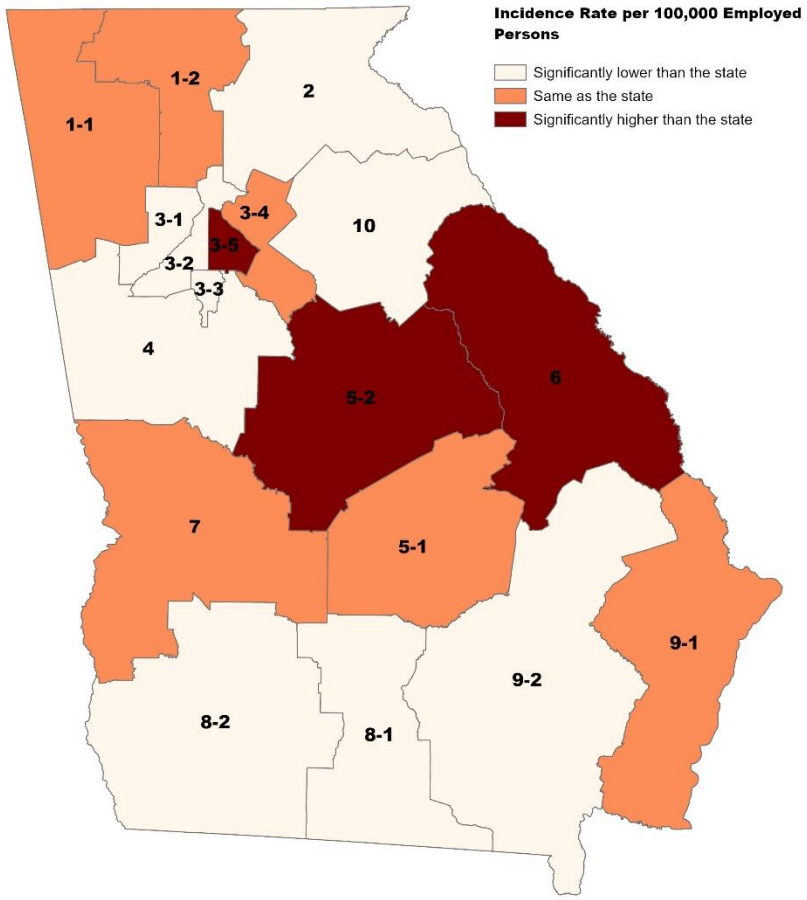
Table 3. Number and Rate of Reported Incident Cases of Elevated Blood Lead Levels (≥5 µg/dL) by Public Health District, 2023-2024 (N = 1,177)

Public Health District	N	Rate per 100,000˜ (95% CI)
1-1 Northwest (Rome)	56	13.8 (10.2 – 17.4)
1-2 North Georgia (Dalton)	34	10.4 (6.9 – 13.9)
2 North (Gainesville)	50	9.0 (6.5 – 11.5)
3-1 Cobb-Douglas	82	9.4 (7.4 – 11.5)
3-2 Fulton	88	4.7 (3.7 – 5.6)
3-3 Clayton (Jonesboro)	15	5.7 (2.8 – 8.6)
3-4 East Metro (Lawrenceville)	123	13.8 (11.3 – 16.2)
3-5 DeKalb*	198	31.8 (27.4 – 36.3)
4 LaGrange	65	10.4 (7.8 – 12.9)
5-1 South Central (Dublin)	8	10.3 (3.2 – 17.5)
5-2 North Central (Macon)*	91	22.2 (17.6 – 26.7)
6 East Central (Augusta)*	188	51.8 (44.4 – 59.2)
7 West Central (Columbus)	33	12.4 (8.2 – 16. 6)
8-1 South (Valdosta)	7	3.7 (1.0 – 6.4)
8-2 Southwest (Albany)	7	2.8 (0.7 – 4.8)
9-1 Coastal (Savannah)	70	12.7 (9.8 – 15.7)
9-2 Southeast (Waycross)	21	8.4 (4.8 – 12.0)
10 Northeast (Athens)	41	9.7 (6.7 – 12.6)

˜Note: Rate per 100,000 employed persons

*Public health district rate significantly higher than the 2023-2024 state rate of 13.7 (13.0 – 14.4)

Map 1. Incidence Rate of Reported Elevated Blood Lead Levels (≥5 µg/dl) by Public Health District, 2023-2024



References:

1. Occupational Safety and Health Administration (OSHA). (n.d.). *Lead*. https://www.osha.gov/lead
2. Centers for Disease Control and Prevention (CDC) (2024, April 11). *About lead in the workplace*. https://www.cdc.gov/niosh/lead/about/index.html
3. Alarcon, WA. (2016, October 14). Elevated blood lead levels among employed adults – United States, 1994-2013. *MMWR Morbidity Mortality Weekly Report*, 63: 59-65. DOI: http://dx.doi.org/10.15585/mmwr.mm6355a5
4. Oliveri AN, Fagerstrom LA, Wang L, Rosenman KD (2022). A county-level program for the evaluation of the potential for take-home lead exposures among children in Michigan. *Public Health Reports*. 137(6):1153-1161. doi: 10.1177/00333549211061327.
5. Centers for Disease Control and Prevention (CDC). (2024, April 11). *Blood lead level guidance*. National Institute for Occupational Safety and Health (NIOSH). https://www.cdc.gov/niosh/lead/bll-reference/?CDC_AAref_Val=https://www.cdc.gov/niosh/topics/lead/referencebloodlevelsforadults.html
6. Georgia Department of Public Health (DPH). (n.d). *Disease reporting*. https://dph.georgia.gov/epidemiology/disease-reporting

Data Sources:

1. Georgia DPH Adult Blood Lead Epidemiology Surveillance (ABLES) Data, 2018 – 2024.
2. Bureaus of Labor Statistics (BLS). Geographic Profile of Employment and Unemployment, 2018 – 2024. https://www.bls.gov/opub/geographic-profile/archive.htm
3. BLS Local Area Unemployment Statistics (LAUS), 2023-2024. https://www.bls.gov/lau/ex14tables.htm
4. BLS Quarterly Census of Employment and Wages (QCEW), 2023 – 2024. https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables