

Washington State Adult Blood Lead Registry Update
Safety & Health Assessment & Research for Prevention (SHARP)
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The Washington State Blood Lead Registry was established in 1993. The results of all blood lead level (BLL) tests performed in Washington State are reported to the Washington State Department of Health (DOH) and the Safety & Health Assessment & Research for Prevention (SHARP) program at the Department of Labor and Industries (L&I).

The Registry’s goal is to prevent lead overexposure and poisoning. SHARP strives to inform and educate workers and employers about the hazards of lead exposure. The Registry provides follow-up for individuals. The type and extent of follow-up depends on the actual BLL. Individuals with BLLs ≥ 25 $\mu\text{g}/\text{dl}$ are sent information on the potential health effects of lead, ways to reduce their exposure, and are contacted for an interview. We also offer SHARP’s industrial hygiene expertise to help reduce lead exposure at specific work sites and medical consultation to ensure proper case evaluation and treatment.

Concerning Adults

An elevated BLL is defined as a BLL ≥ 5 $\mu\text{g}/\text{dL}$. The U.S. Department of Health and Human Services recommends that BLLs among all adults be reduced to < 10 $\mu\text{g}/\text{dL}$. Current research has found decreased renal function associated with BLLs ≤ 5 $\mu\text{g}/\text{dL}$, and increased risk of hypertension and essential tremor at BLLs < 10 $\mu\text{g}/\text{dL}$.

Between 1993 and 2016, SHARP received a total of 181,135 BLL reports. Approximately 7% of these reports were for individuals with BLLs (≥ 10 $\mu\text{g}/\text{dl}$). For cases where a home address could be obtained, the largest number of elevated blood lead reports was for King County residents (42%), followed by residents of Pierce (15%) and Snohomish (11%) Counties.

During 2016, there were 1046 (8%) reports to the Registry for individuals who had BLLs ≥ 5 $\mu\text{g}/\text{dl}$. Of the 50 reports in the Registry with BLLs ≥ 25 $\mu\text{g}/\text{dl}$ for which gender information was available, 48 (96%) were for males. Of particular note in 2016 was a patient with an initial BLL of 68 $\mu\text{g}/\text{dl}$. The source of lead exposure for this non-occupational adult case was a traditional Ayurvedic medication.

Table 1. Adult blood lead levels—2016 reports and cumulative reports.

Blood Lead Level, ($\mu\text{g}/\text{dl}$)	2016	1993-2016 (%)
< 5	12,716 (92%)	157,840 (87%)
5-9	650 (4.7%)	10,131 (5.6%)
10-24	346 (2.5%)	8,631 (4.8%)
25-59	49 (0.4%)	4,447 (2.5%)
≥ 60	1 (0.01%)	86 (0.05%)
TOTAL	13,762	181,135

In order to determine how workers are being exposed in the State of Washington, we actively try to collect employer and occupation information for individuals with BLLs ≥ 10 $\mu\text{g}/\text{dl}$. Blood testing of lead-exposed workers is frequently required by workplace health regulations, and provides valuable information to guide workplace and medical decisions related to lead. If elevated blood lead levels occur, workplace exposures to lead should be reduced.

Of the 396 BLL reports ≥ 10 $\mu\text{g}/\text{dl}$ received in 2016, 148 (37%) reports were from workers where the employer and industry of exposure was known. Eighteen reports were associated with recreational exposure to lead. The remaining 230 (58%) reports lacked exposure information. It is likely that lead poisoning is a much greater problem than these numbers indicate, because many workers who are exposed to lead likely do not have their blood tested.

Industries from which more than two BLL reports ≥ 10 $\mu\text{g}/\text{dl}$ were received in 2016 are shown by industry description in Table 2. Since employers that do not test their workers for lead are not included in the Registry and some workers do not provide the name of their employer, it is possible that some industries are not seen here, or that some industries are over-represented.

Table 2. Industries with more than two BLL reports (≥ 10 $\mu\text{g}/\text{dl}$), 2016

Industry Description ¹	10-24 $\mu\text{g}/\text{dl}$	25-49 $\mu\text{g}/\text{dl}$	Total Reports ≥ 10 $\mu\text{g}/\text{dl}$
STORAGE BATTERY MANUFACTURING	25	5	30
PAINT AND WALL COVERING CONTRACTORS	20	8	28
SUPPORT ACTIVITIES FOR METAL MINING	21	0	21
ALL OTHER AMUSEMENT AND RECREATION INDUSTRIES ²	20	1	21
NAVIGATIONAL SERVICES TO SHIPPING	10	1	11
METAL SERVICE CENTERS AND OTHER METAL MERCHANT WHOLESALE	8	1	9
SPORTING GOODS STORES ²	7	0	7

1. North American Industrial Classification System (NAICS)

2. All reports from SPORTING GOODS STORES and ALL OTHER AMUSEMENT AND RECREATION INDUSTRIES (Total = 28) were for workers at indoor firing ranges.

The information on individual workers and employers contained within the Registry is maintained in the strictest confidence. Individual BLL results are protected from public disclosure in any form that would identify the person tested. Information on individual employers is used only to identify worksites and industries where exposure reduction interventions can be targeted. In certain situations of lead exposure, SHARP reserves the right to share information on employers with DOSH, the state Occupational Safety and Health (OSHA) plan.

For more information on the lead registry and its activities or on ways to prevent lead overexposure, please contact SHARP at (360) 902-5669 or at 1-888-66-SHARP (toll free).