CLINICAL GUIDANCE FOR ADULT BLOOD LEAD LEVELS

These guidelines are for the clinical care of adults exposed lead at home or work. CDPH recommends follow-up for adult blood lead levels (BLL) 3.5 µg/dL and greater. The mean BLL for U.S. adults is < 1 µg/dL; 97.5th percentile for BLL is 3.5 µg/dL (CDC, CSTE 20211). Because chronic adverse health effects can occur even at modestly elevated BLLs, clinicians should monitor patients until BLL is below 3.5 µg/dL.

Blood Lead Level	Action Needed	Timing of Recheck BLL	CLINICAL EVALUATION
3.5–9 µg/dL	Obtain history on lead exposure and minimize contact.	Every 3 months until < 3.5 µg/dL.	Obtain history on potential sources of lead exposure at work and home at all BLLs ≥ 3.5 µg/dL. Minimize lead exposure. Use a venous blood lead sample for diagnosis and monitoring. Testing of hair, urine, or capillary blood and provocation testing are not recommended. Obtain laboratory tests (CBC, BUN/Cr, and urinalysis) within two weeks of a BLL result > 30 µg/dL and urgently if > 80 µg/dL. Consider labs at BLL ≥ 10 µg/dL if no baseline results are available from the past 12 months. Monitor blood pressure at least annually for adults with elevated BLL.
10–19 µg/dL	Check baseline labs if none in past 12 months.	Every 2 months until < 10 µg/dL.	
20–29 µg/dL	Conduct physical exam and labs if not done in past 12 months.	Monthly until < 10 µg/dL.	**IF OCCUPATIONAL EXPOSURE** Remove from work or reassign to job duties that do not involve lead if the last two monthly BLLs are ≥ 20 µg/dL or if the average of all BLLs in the last 6 months is ≥ 20 µg/dL.
30+ µg/dL	Conduct physical exam and labs within 2 weeks of BLL result.	Monthly until < 10 µg/dL.	Remove from work or reassign to job duties that do not involve lead if one BLL is ≥ 30 µg/dL.
80+ µg/dL	Prompt physical exam, labs, and consultation with an occupational medicine specialist or toxicologist.		

In pregnancy, BLL should be as low as possible to protect the fetus. Identify and stop lead exposure, remove from work at BLL ≥ 3.5 µg/dL, and repeat BLL at least every 4 weeks until < 3.5 µg/dL. Refer to the American College of Obstetricians and Gynecologists guidelines and CDC guidelines on lead in pregnancy and lactation for additional recommendations.

Treatment: Source identification and removal from lead exposure is the primary treatment of both symptomatic and asymptomatic BLL elevation. Chelation is reserved for patients with severe symptoms of toxicity, which typically occur at BLL > 80 µg/dL, or in any patient with an extremely high BLL (e.g. > 100 µg/dL). You may wish to consult with a specialist in toxicology, emergency medicine, or hematology for highly symptomatic patients and those requiring chelation.

Occupational exposure: Refer to medical requirements in Cal/OSHA lead standards §1532.1 for construction and §5198 for general industry. Workers removed from work due to lead poisoning may return after two BLLs checked at least 30 days apart are < 15µg/dL. Cal/OSHA job protections apply when a physician performing occupational medical surveillance exams removes an employee from lead work at any BLL due to toxicity, pregnancy, or a comorbidity that increases health risk from lead.

For work-related lead toxicity requiring medical care beyond routine medical surveillance: Submit a Doctor's First Report to the employer's Workers' Compensation insurer within 5 days of evaluation.

FOR MORE INFORMATION

For questions call (510) 620-5714 or e-mail adultlead@cdph.ca.gov

OCCUPATIONAL LEAD POISONING PREVENTION PROGRAM:
www.cdph.ca.gov/olppp

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[1]NHANES 2015-2018 data, weighted percentile per methodology used in children (Ruckart PZ, et al. MMWR 2021;70:1509-1512), adopted by the Council of State and Territorial Epidemiologists Dec. 2021.