INFORMATION FOR STATE AND LOCAL HEALTH DEPARTMENTS FOR IMPLEMENTING 3.5 µg/dL AS THE UPDATED CDC BLOOD LEAD REFERENCE VALUE

BACKGROUND

Exposure to lead can cause serious harm to a child's health. The amount of lead measured in blood, blood lead level (BLL), is used as an indicator of exposure to lead. However, no safe BLL exists and even small amounts of lead in the blood can result in damage to the brain and nervous system, slowed growth and development, and learning and behavior problems. While lead exposure risks significantly decreased in the U.S. with the removal of lead in gasoline for on-road vehicles and lead containing consumer paint, millions of children in the U.S. continue to be exposed to lead, primarily those who have been socially and economically marginalized.

The primary ways that children are exposed to lead include from deteriorated lead-based paint, lead-contaminated dust from paint and soil, and lead-contaminated drinking water. Children can also be exposed to lead from toys and jewelry; antiques and collectible items; lead-glazed pottery; food, cosmetics, ceremonial powders, and traditional remedies; and occupational or take-home lead exposure from jobs and hobbies.

Disparities in BLLs exist with certain groups of children being at a higher risk for lead exposure, including children from some racial and ethnic minority groups, children living in low-income households, and children who live in housing built before 1978. Children who are immigrants, refugees, or recently adopted from outside of the U.S. are also at a higher risk for lead exposure, as well as children whose parents/caregivers may be exposed to lead through their work or hobbies.

In 2012, CDC adopted a blood lead reference value (BLRV) as a way of identifying the 2.5% of U.S. children ages 1–5 at greatest risk of lead exposure. The BLRV is based on the 97.5th percentile of the BLL distribution among children 1–5 years old in the U.S. from the two most recent cycles of data from the National Health and Nutrition Examination Survey (NHANES). Thus, based on NHANES data from 2015–2018, CDC accepted the Lead Exposure and Prevention Advisory Committee (LEPAC) recommendation to update the BLRV to 3.5 µg/dL.

The BLRV is not a clinical reference value defining an acceptable range of BLLs in children nor is it a health-based toxicity threshold. It is a policy guide to identify children in the upper end of the blood lead distribution in the United States and thereby initiate follow-up actions to reduce the harmful effects of lead and eliminate/control lead exposure risks in the environment. The BLRV can also serve as a standard for evaluating the effectiveness of lead exposure prevention efforts.

KEY MESSAGES

1. CDC updated the BLRV to 3.5 µg/dL.
2. For children with BLLs at or above the BLRV of 3.5 µg/dL, state and local health departments are recommended to follow CDC's recommended child-specific response actions. Children with BLLs below the BLRV of 3.5 µg/dL are recommended to receive the following child-specific response actions: routine assessment of nutritional and developmental milestones, anticipatory guidance about common sources of lead exposure, and follow-up blood lead testing at recommended intervals based on the child's age.

3. Lead exposure is not equally distributed across the U.S., and young children at highest risk for exposure are those living in housing built before 1978, non-Hispanic Black or African American children, children eligible for Medicaid, and children living in areas with higher poverty rates and lower percentages of high school graduates.
4. This policy will drive and support further assessment of BLLs by sociodemographic characteristics (e.g., race, ethnicity, and income), which can assist in the creation of more focused population-based interventions that will help promote health equity and environmental justice.
5. CDC is committed to making new and expanding investments in communities where young children are disproportionately affected by BLLs at or above the BLRV. A BLRV of 3.5 µg/dL will create opportunities for state and local government and the private sector to contribute to health equity and environmental justice by allowing earlier identification of the most highly exposed children so they can be connected to appropriate medical and environmental follow-up services.

CALL TO ACTION

CDC would like state and local health departments to

1. Formally adopt the updated BLRV of 3.5 µg/dL.

2. Publicly promote the BLRV as a way to identify children with BLLs that are higher than most U.S. children's levels.
3. Encourage providers to perform CDC's recommended actions based on the BLL.
4. Have a secondary prevention strategy to identify and follow up children who are exposed to lead.
5. Focus screening efforts on high-risk neighborhoods and children based on age of housing and sociodemographic risk factors.
6. Collaborate with public health and clinical professionals to develop screening plans responsive to local conditions using local data. In the absence of such plans, universal blood lead testing is appropriate, including the Centers for Medicare and Medicaid Services requirement that all Medicaid-enrolled children be tested at ages 12 and 24 months, or at ages 24–72 months if they have not previously been screened.

More information is available on CDC's Blood Lead Reference Value webpage.

INFORMATION RESOURCES

MMWR Policy Note

BLRV Press Release