

# 211 Elevated Blood Lead Levels

## Definition/Cut-off Value

Blood lead level of  $\geq 10$   $\mu\text{g}/\text{deciliter}$  within the past 12 months.\*

\*Cut-off value is the current published guidance from the Centers for Disease Control and Prevention.

## Participant Category and Priority Level

Category	Priority
Pregnant Women	I
Breastfeeding Women	I
Non-Breastfeeding Women	III, IV, V, or VI
Infants	I
Children	III

## Justification

Venous blood measurement levels at or above the level identified in CDC published guidelines are associated with harmful effects on health, nutritional status, learning or behavior for everyone. Because published guidelines are currently available only for children, similar thresholds should be used for other participant categories until category-specific guidelines are available from CDC.

Lead poisoning is a persistent, but entirely preventable public health problem in the United States. It is most common in children, but can occur in other groups as well. Blood lead levels have been declining in the U.S. population as a whole in recent years, but children remain at risk. Children absorb lead more readily than adults and children's developing nervous systems are particularly vulnerable to lead's effects.

In pregnant women lead crosses the placenta and can have a detrimental impact on a developing fetus. Adequate intake of calories, calcium, magnesium, iron, zinc, and various vitamins (e.g. thiamin, ascorbic acid, and vitamin E) decreases the absorption of lead in adults and the susceptibility of children to the toxic effects of lead.

Individuals exposed to lead who participate in WIC may benefit from referrals to lead treatment programs, guidance on how to reduce exposure to lead, supplemental food, and the importance of diet in minimizing absorption.

Measurement, of blood lead levels, replaces the Erythrocyte Protoporphyrin (EP) test as the recommended screening tool because EP is not sensitive enough at blood lead levels below 25  $\mu\text{g}/\text{dl}$ . Venous blood samples are preferable, but capillary samples may be more feasible at some sites. Elevated blood lead levels obtained using capillary samples should be confirmed using venous blood. If EP is used, elevated results should be followed by a blood lead test using a venous blood sample. Iron deficiency can also cause elevated EP concentrations. Iron deficiency and lead poisoning often coexist.

Although follow-up screening within less than 12 months is recommended for children with an elevated blood lead level (BLL), CDC recommends blood lead screening for potentially at-risk children at 1 and 2 years of age and between 36 and 72 months of age. The WIC Program can refer children to a health care provider if they had an elevated BLL 12 months ago and no interim follow-up BLL screening.

### References

1. Centers for Disease Control and Prevention. Update: blood lead levels-United States, 1991-1994. MMWR 1997;46: RR-7.
2. Institute of Medicine. WIC nutrition risk criteria a scientific assessment. National Academy Press, Washington, D.C.; 1996.
3. National Center for Environmental Health. Screening young children for lead poisoning guidance for state and local public health officials. Atlanta, Ga.: Centers for Disease Control and Prevention, National Center for Environmental Health, U.S. Dept. of Health and Human Services, Public Health Service, 1997.