



## **Iowa Adult Blood Lead Reference Level Update – April 2016**

### **NIOSH Updates the Adult Lead Reference Level**

<http://www.cdc.gov/niosh/topics/ables/description.html>

Occupational lead exposure is an important health problem in the United States and in Iowa. Lead exposure causes acute and chronic adverse effects in multiple organ systems ranging from subclinical changes in function to symptomatic life-threatening intoxication. Moreover, evidence indicates that lead exposure at low doses can lead to adverse cardiovascular and kidney effects, cognitive dysfunction, and adverse reproductive outcomes. Current research has found decreased renal function associated with BLLs at 5 µg/dL and lower, and increased risk of hypertension and essential tremor at BLLs below 10 µg/dL.

In 2015, the Centers for Disease Control and Prevention (CDC) National Institute for Occupational Safety and Health (NIOSH) designated 5 µg/dL (five micrograms per deciliter) of whole blood, in a venous blood sample, as the reference blood lead level (BLL) for adults. An elevated BLL is defined as a BLL ≥5 µg/dL. Previously (i.e. from 2009 until November 2015), the case definition for an elevated BLL was a BLL ≥10 µg/dL. The CDC/NIOSH updated case definition has been adopted by the Iowa Adult Blood Lead Epidemiology and Surveillance (ABLES) program.

The U.S. Department of Health and Human Services recommends that BLLs among all adults be reduced to <10 µg/dL. The U.S. Occupational Safety and Health Administration (OSHA) Lead Standards require workers to be removed from lead exposure when BLLs are equal or greater than 50 µg/dL (construction industry) or 60 µg/dL (general industry) and allow workers to return to work when the BLL is below 40 µg/dL. Data from the National Health and Nutrition Examination Survey (NHANES) show that the average BLL (geometric mean) of all adults in the United States in 2009–2010 was 1.2 µg/dL. An updated graphic document displaying the various agency and organization references, action levels, and national resource links can be found at [www.cdc.gov/niosh/topics/ables/pdfs/Reference%20Blood%20Levels%20for%20Adults-2015-12-18\\_508.pdf](http://www.cdc.gov/niosh/topics/ables/pdfs/Reference%20Blood%20Levels%20for%20Adults-2015-12-18_508.pdf).

Medical providers should also be aware that OSHA Lead Standards give the examining physician broad flexibility to tailor special protective procedures to the needs of individual employees. Therefore, the most current guidelines for management of lead-exposed adults should be implemented by the medical community at the current CDC/NIOSH reference BLL of 5 µg/dL. Recommendations for medical management are available on the NIOSH website, through information posted on the IDPH ABLES program webpage [idph.iowa.gov/lpp/surveillance](http://idph.iowa.gov/lpp/surveillance) or by calling IDPH for referral to medical toxicologists in Iowa familiar with adult lead poisoning.

IDPH ABLES Contact:

Kathy Leinenkugel

IDPH ABLES Project Manager

[Kathy.leinenkugel@idph.iowa.gov](mailto:Kathy.leinenkugel@idph.iowa.gov)

515-281-4930

800-972-2026