

# USA Case Definition of Adult (including Occupational) & Child Elevated Blood Lead Levels (EBLL)

*This Information was provided by the National Institute for Occupational Safety and Health (NIOSH) Adult Blood Lead Epidemiology and Surveillance (ABLES) program.*

ABLES current case definition for an elevated blood lead level (BLL) is a blood lead concentration  $\geq 10$   $\mu\text{g}/\text{dL}$ . The description below provides more details on the use of this updated case definition and the slide presents it in perspective with other reference blood lead levels.

- 1) In 2007 the **AOEC** published its Medical Management Guidelines for Lead-Exposed Adults ([http://www.aoec.org/documents/positions/MMG\\_FINAL.pdf](http://www.aoec.org/documents/positions/MMG_FINAL.pdf)). In its medical surveillance section, it states that “New employees and those newly assigned to lead work should have a preplacement lead medical examination and BLL test, followed by periodic BLL testing, blood pressure measurement, and health status review. Monthly BLL testing is recommended for the first three months of employment for an initial assessment of the adequacy of exposure control measures. Subsequently, testing frequency can be reduced to every six months as long as BLLs remain below **10  $\mu\text{g}/\text{dL}$**  (0.48  $\mu\text{mol}/\text{L}$ ).” In the **Pregnancy and Breast Feeding Concerns** section “the panel’s recommendation is that the mother’s BLL should be kept below **5  $\mu\text{g}/\text{dL}$**  (0.24  $\mu\text{mol}/\text{L}$ ) from the time of conception through pregnancy.” And in the **conclusions** section “Clinicians are encouraged to advise patients of the risks associated with any elevation of lead level and to advocate strongly for environmental controls that would **maintain BLLs below 10  $\mu\text{g}/\text{dL}$**  (0.48  $\mu\text{mol}/\text{L}$ ) wherever feasible.”
- 2) **NIOSH** case definition for an elevated blood lead level was updated in 2009:  
“ADULT BLOOD LEAD EPIDEMIOLOGY & SURVEILLANCE (ABLES)  
Program Description: ABLES is a state-based surveillance program of laboratory-reported adult blood lead levels. In 2009, the ABLES program updated its case definition for an Elevated Blood Lead Level for surveillance purposes as a blood lead concentration  $\geq 10$   $\mu\text{g}/\text{dL}$ .”  
<http://www.cdc.gov/niosh/topics/ABLES/description.html>
- 3) Also in 2009, **CSTE** issued a position statement on lead: CSTE List of Nationally Notifiable Conditions. June 2009.  
CSTE 2009 Position Statement. Public Health Reporting and National Notification for Elevated Blood Lead Levels <http://www.cste.org/ps2009/09-OH-02.pdf>  
<http://www.cste.org/dnn/LinkClick.aspx?fileticket=7CCxM20JUGg%3d&tabid=36&mid=1496>
- 4) In 2010 **CDC** included, for the first time, elevated blood lead levels as a Nationally Notifiable Non-Infectious Conditions, using the same BLL ( $\geq 10$   $\mu\text{g}/\text{dL}$ ) in the case definition.  
Nationally Notifiable Non-Infectious Conditions. United States 2010. Elevated Blood Lead Levels:  
[http://www.cdc.gov/osels/ph\\_surveillance/nndss/phs/non\\_infdis2010.htm](http://www.cdc.gov/osels/ph_surveillance/nndss/phs/non_infdis2010.htm)  
[http://www.cdc.gov/osels/ph\\_surveillance/nndss/casedef/lead\\_current.htm](http://www.cdc.gov/osels/ph_surveillance/nndss/casedef/lead_current.htm)
- 5) Also in 2010, **DHHS** adopted the HP2020 objective OSH-7 “Reduce the proportion of persons who have elevated blood lead concentrations from work exposures Reduce the proportion of persons who have elevated blood lead concentrations from work exposures”  
(<http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicid=30>)

**The LEAD Group Inc.** PO Box 161 Summer Hill NSW 2130 Australia  
Ph: (02) 9716 0014, Email [www.lead.org.au/cu.html](http://www.lead.org.au/cu.html) Web: [www.lead.org.au/](http://www.lead.org.au/)

and the operational definition for HP2020 is presented in [http://www.healthindicators.gov/Indicators/Elevated-blood-lead-rates-in-adults\\_1300/National\\_0/Profile](http://www.healthindicators.gov/Indicators/Elevated-blood-lead-rates-in-adults_1300/National_0/Profile)

To get to this page I suggest the following:

1- In the webpage

<http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicid=30>  
click on OSH-7

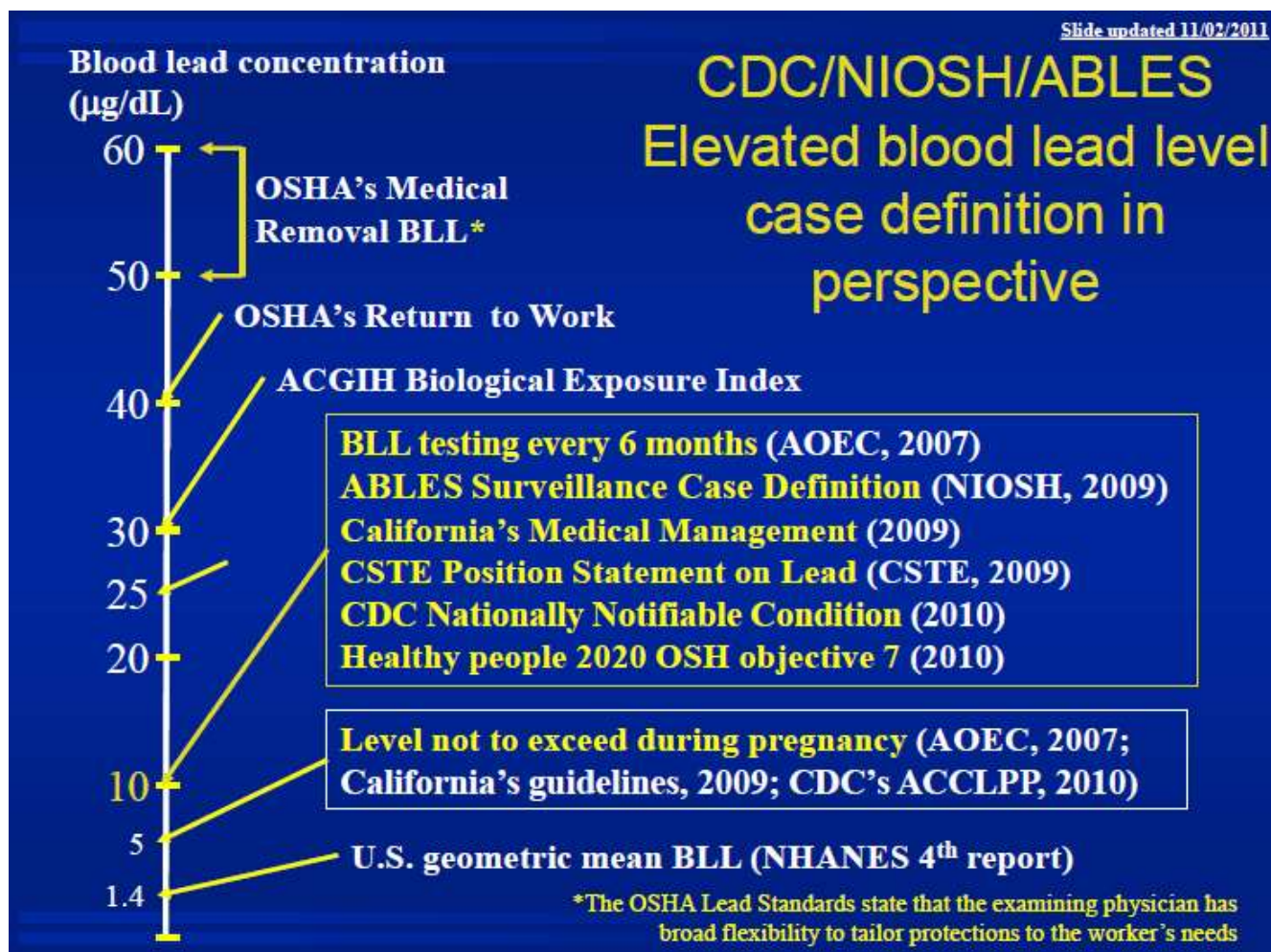
2- When this objective expands, click on the link below

3- Which will take you to the HHS Health Indicators Warehouse

([http://www.healthindicators.gov/Indicators/Elevatedbloodleadratesinadults\\_1300/Profile/D ata](http://www.healthindicators.gov/Indicators/Elevatedbloodleadratesinadults_1300/Profile/D ata)). In this page click on the "Overview" tab that will take you to the operational definition: [http://www.healthindicators.gov/Indicators/Elevated-blood-lead-rates-in-adults\\_1300/National\\_0/Profile](http://www.healthindicators.gov/Indicators/Elevated-blood-lead-rates-in-adults_1300/National_0/Profile)

"Starting in 2009, the ABLES case definition for elevated blood lead levels was changed from 25 µg to 10 µg/dL which is consistent with guidance from the Association of Occupational and Environmental Clinics and the Council of State and Territorial Epidemiologists. CDC has also included in 2010, for the first time, elevated blood lead levels (defined as BLL =>10 µg/dL) in the list of national notifiable conditions. Therefore, this measure uses the updated case definition of 10 µg/dL or greater"

This slide presents the ABLES case definition for an elevated blood level in perspective with other reference levels:



Thank you,

*Walter A. Alarcon, MD MSc*

Adult Blood Lead Epidemiology and Surveillance (ABLES) Program Project Officer  
Surveillance Branch / Division of Surveillance, Hazard Evaluations and Field Studies  
National Institute for Occupational Safety and Health  
Centers for Disease Control and Prevention  
4676 Columbia Parkway, R-17  
Cincinnati, OH, 45226  
Phone: 513-841-4451  
Fax: 513-841-4489

**NIOSH is a Federal agency responsible for conducting research and making recommendations for the prevention of work-related illnesses and injuries:**

<http://www.cdc.gov/niosh/about.html>

**NIOSH Safety and Health Topic: Adult Blood Lead Epidemiology and Surveillance (ABLES)**

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

#### **Additional Links**

**California. Workplace hazard alert. New Health Dangers from Lead.**

<http://www.cdph.ca.gov/programs/olppp/Documents/LeadHazAlert.pdf>

#### **Health Effects of Low-level Lead Evaluation**

**NTP Monograph on Health Effects of Low-level Lead (June 2012)**

<http://ntp.niehs.nih.gov/?objectid=4F04B8EA-B187-9EF2-9F9413C68E76458E>

- [NTP Monograph on Health Effects of Low-level Lead](#) (2.1 MB) (without appendices)
- [Appendices A – E: Human Studies Considered in Developing Conclusions](#) (4 MB) (single file with all appendices)
- Individual Appendix files
  - [Appendix A: Human Studies of Neurological Effects of Lead Considered in Developing Conclusions](#) (1.5 MB)
  - [Appendix B: Human Studies of Immune Effects of Lead Considered in Developing Conclusions](#) (618KB)
  - [Appendix C: Human Studies of Cardiovascular Effects of Lead Considered in Developing Conclusions](#) (824 KB)
  - [Appendix D: Human Studies of Renal Effects of Lead Considered in Developing Conclusions](#) (408 KB)
  - [Appendix E: Human Studies of Reproductive and Developmental Effects of Lead Considered in Developing Conclusions](#) (1.5 MB)
- [Peer Review of Draft NTP Monograph on Health Effects of Low-level Lead \(November 17-18, 2011\)](#)