

Actions on Draft NTP Monograph on Health Effects of Low-Level Lead Peer Review Panel Meeting on November 17-18, 2011

The NTP Monograph Peer-Review Panel (“the Panel”) was convened on November 17-18, 2011, to peer review the draft NTP Monograph on Health Effects of Low-Level Lead (Pb). Summary meeting minutes will be prepared and posted to the NTP website when completed (<http://ntp.niehs.nih.gov/go/36639>). The Panel’s recommendations for the draft monograph are given below and do not necessarily represent the opinion of the NTP. The NTP will consider the Panel’s input in finalizing the NTP Monograph. When completed, the monograph will be published on the NTP website (<http://ntp.niehs.nih.gov/go/evals>).

Immune Effects

The Panel accepted unanimously (8 yes, 0 no, 0 abstentions) the conclusions in *Table 5.4: NTP conclusions on immune effects of low-level Pb*, with one modification. The Panel recommended *limited* evidence for effects of blood Pb <10µg/dl on increased serum IgE in children.

The Panel accepted unanimously (8 yes, 0 no, 0 abstentions) the overall NTP conclusions for immune effects as written, there is *limited* evidence that blood Pb levels <10µg/dL are associated with adverse immune effects in children, and there is *inadequate* evidence in adults.

Cardiovascular Effects

The Panel accepted (7 yes, 1 no, 0 abstentions) the conclusions in *Table 6.8: Conclusions on cardiovascular effects of low-level Pb*, with one modification. The Panel recommended *limited* evidence for effects of blood Pb <10µg/dl on cardiovascular mortality in adults.

The Panel accepted unanimously (8 yes, 0 no, 0 abstentions) the overall NTP conclusions for cardiovascular effects as written, there is *sufficient* evidence that blood Pb levels <10µg/dL in adults are associated with adverse effects on cardiovascular function, and there is *inadequate* evidence to evaluate cardiovascular effects in children.

Reproductive and Developmental Effects

The Panel accepted unanimously (8 yes, 0 no, 0 abstentions) the conclusions in *Table 8.6: NTP conclusions on reproductive and developmental effects of low-level Pb*, with one modification. The Panel recommended the blood Pb level for *sufficient* evidence in women for Reduced Fetal Growth and Lower Birth Weight be <5µg/dL.

The Panel accepted unanimously (8 yes, 0 no, 0 abstentions) the overall NTP conclusions for reproductive and developmental effects as written, there is *sufficient* evidence that blood Pb levels <10µg/dL are associated with adverse health effects on development in children and reproduction in adult women. In addition, the Panel recommended, that there is *sufficient* evidence that blood Pb levels <5µg/dL in women are associated with reduced fetal growth and lower birth weight.

Renal Effects

The Panel accepted unanimously (8 yes, 0 no, 0 abstentions) the conclusions as written in *Table 7.5: NTP conclusions on kidney effects of low-level Pb*.

The Panel accepted unanimously (8 yes, 0 no, 0 abstentions) the overall NTP conclusions as written, there is *sufficient* evidence that blood Pb levels <5µg/dL in adults are associated with adverse effects on kidney function, there is *limited* evidence that blood Pb <5µg/dl are associated with adverse effects on kidney function in children age 12 and older, and there is *inadequate* evidence that blood Pb levels <10µg/dL are associated with impaired kidney function in children below 12 years of age.

Neurological Effects

The Panel accepted unanimously (8 yes, 0 no, 0 abstentions) the conclusions in *Table 4.3: NTP conclusions on neurological effects of low-level Pb*, with several modifications. The Panel recommended *sufficient* evidence for effects of blood Pb levels <5µg/dL on Cognitive Function; IQ in children. The Panel recommended *sufficient* evidence for effects of blood Pb levels <10µg/dL and *limited* evidence for effects

Actions on Monograph - continued

of blood Pb levels $<5\mu\text{g/dL}$ for Neurodegeneration: Essential Tremor in adults. The Panel pointed out that one study was available to support the NTPs conclusion of *inadequate* evidence for prenatal effects on Sensory Function: Visual. The Panel recommended the term "Behavior: ADHD" be changed to "Attention-related Behaviors".

The Panel recommended unanimously (8 yes, 0 no, 0 abstentions) the overall NTP conclusions, there is *sufficient* evidence that blood Pb levels $<5\mu\text{g/dL}$ are associated with adverse neurological effects in children and there is *limited* evidence in adults for blood Pb levels $<10\mu\text{g/dL}$.