

DRAFT

KENTUCKY LEAD REPORT

FOCUS AREA – PUBLIC HEALTH & LEAD

BACKGROUND INFORMATION:

Throughout history, lead (Pb) and lead products have had influential roles as society developed. Significant lead production began in about 3000 BC with large mines in Spain and Greece. In early history, it was used in the production of makeup, paints, spermicide, condiments, wine additives, and, most importantly, in lead piping for the vast network that supplied the Roman Empire with water. Romans were aware that lead could cause serious health problems, but chose to minimize those hazards in favor of its diverse uses.¹ Many historians have advanced a theory that lead poisoning actually contributed to the fall of the Roman Empire.

By the 20th century, the United States was the world's leading producer and consumer of refined lead. Most of the lead was used as an additive in gasoline and as the primary pigment in house paint. Smaller amounts were used as solder in plumbing and in other household uses.² According to the 1980 National Academy of Sciences report, the United States was using 1.3 million tons of lead each year; ten times more than used by the citizens of ancient Rome. (Source)

In the past 30 years, lead exposure levels have decreased dramatically due to its reduction or removal from paint, gasoline, industrial emissions, food canning, and other sources. Public health and housing initiatives have also worked to raise awareness to the harm lead may cause during early childhood development.³ Currently in Kentucky, as in the rest of the United States, most cases of childhood lead poisoning can be traced to deteriorating paint in the form of dust and chips in older homes and buildings.

HEALTH EFFECTS:

Exposure to lead, even at low levels can cause damage over time. In children, the greatest risk is to brain development, where irreversible damage may occur. Higher levels of lead exposure can damage the kidneys and nervous system in both children and adults. Very high levels of lead exposure can cause seizures, unconsciousness and possibly death.⁴

Symptoms of lead poisoning may vary between children and adults. In children the signs and symptoms of lead poisoning may mimic other common childhood illnesses and include:

- Developmental delay
- Learning difficulties
- Irritability
- Loss of appetite
- Weight loss
- Sluggishness and fatigue
- Abdominal pain
- Vomiting
- Constipation
- Hearing loss
- Slowed growth

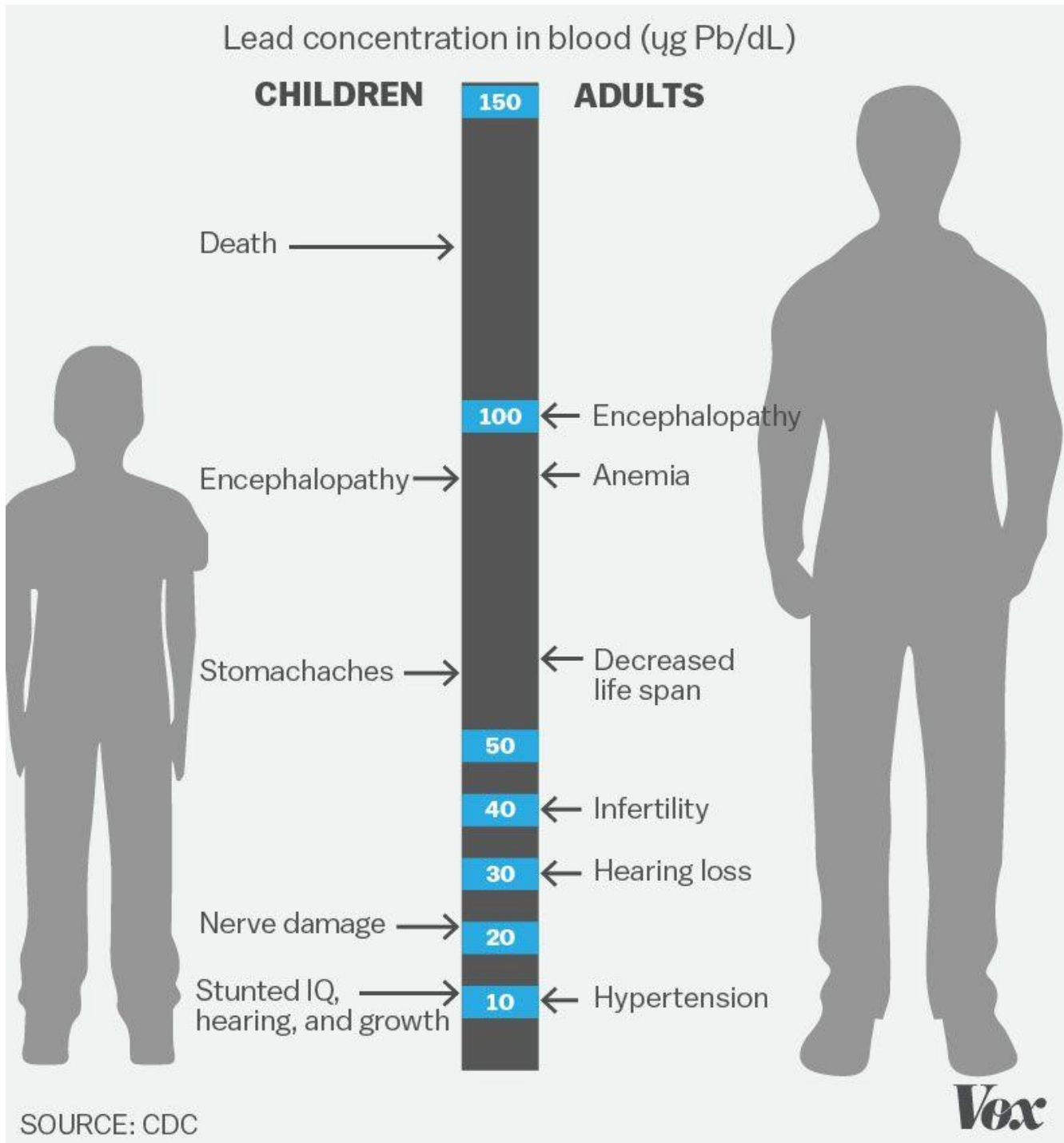
Although children are primarily at risk, lead poisoning is also dangerous for adults. Signs and symptoms of lead poisoning in adults may include:

- High blood pressure
- Abdominal pain
- Constipation
- Joint pains
- Muscle pains
- Declines in mental functioning
- Pain, numbness, or tingling of the extremities
- Headache
- Memory loss
- Mood disorders
- Reduced sperm count, abnormal sperm
- Miscarriage or premature birth in pregnant women

Early detection of lead poisoning is essential to prevent adverse health effects associated with prolonged exposure. Because of the rapid speed of brain and neurological development in early childhood, public health institutions focus their lead awareness and detection efforts on children less than six years of age. As an initial screening, the potential for lead poisoning can be based on a verbal assessment. The American Academy of Pediatrics recommends that a lead screening verbal assessment be performed at six months, nine months, 12 months, 18 months, 24 months, and at 3, 4, 5 and 6 years of age. If the assessment is positive, a blood lead level test will be performed.⁵

Lead levels in the bloodstream are measured and assessed based on micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention (CDC) considers a reference value of 5 $\mu\text{g}/\text{dL}$, although there is no safe level of lead in the blood. In Kentucky, blood lead levels between 5 and 14.9 $\mu\text{g}/\text{dL}$ will trigger a home visit from the local health department and recommendations on how to minimize the child's lead hazard exposure. Per Kentucky Revised Statute 211.905, levels at 15 $\mu\text{g}/\text{dL}$ and above require a lead hazard risk assessment and possible abatement of the home.

Currently, State and Federal regulations require all children enrolled in Medicaid to receive blood lead level test at 12 and 24 months of age. Children between 24 months and 72 months enrolled in Medicaid who do not have records of previous testing, should also receive a screening blood lead test.⁶ There are no State or Federal regulations requiring lead level screening or testing for children of any age not enrolled in Medicare.



RESOURCE NEEDS:

The serious health and societal effects of lead poisoning in both children and adults are very well documented. While the number of cases has declined in recent years, the adverse effects of lead toxicity needs to be kept in the spotlight. Legislators must be made aware of the negative consequences of lead toxicity so that education, testing and abatement resources are available.

RECOMMENDATIONS:

The Kentucky Lead Workgroup provides the following recommendations:

- Notification of the local health department when local water utilities detect lead in the water at schools and daycares;
- Funding for Lead abatement (including water service lines, in low income households.
- Legislation for requiring blood lead level testing for all children at 12 months and 24 months old

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RESOURCES:

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