

# Strategies to Address Human Health Concerns of Lead-Based Ammunition

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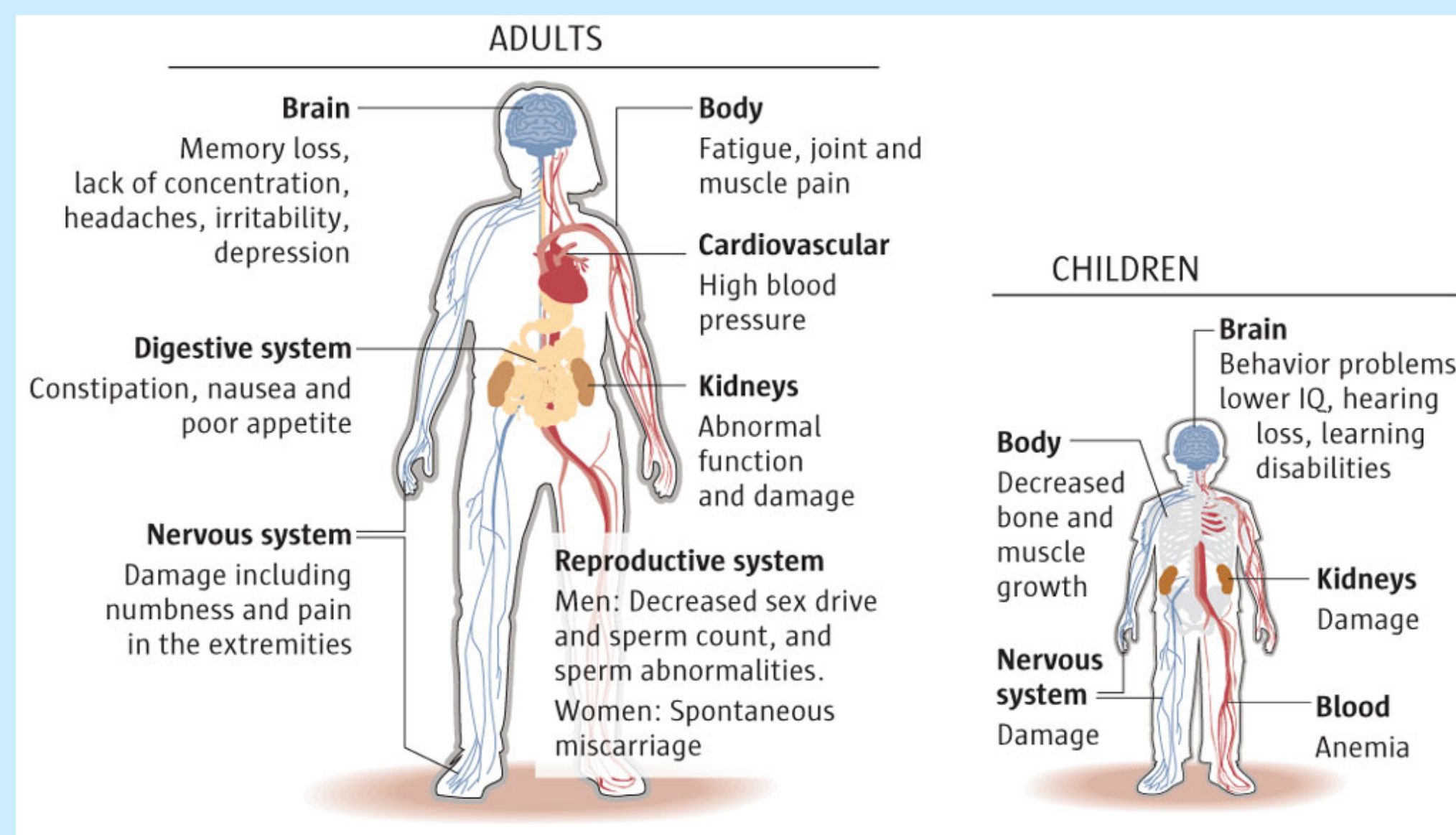
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## Introduction

The US Centers for Disease Control and Prevention (CDC) has declared that there is no safe level of lead exposure, particularly for children. Well-recognized exposure routes include water and paint from homes (built prior to 1978), but exposure may also occur through the use of lead-based ammunition for hunting, target practice, or recreational shooting. Exposure to lead occurs when the gun is fired and particulate or lead-based propellant is vaporized, which can be inhaled or contaminate skin and clothing. Lead toxicity is due, in part, to its propensity to substitute for calcium in the body. Because of their rapid bone growth, children will absorb about 50% of the lead ingested, in contrast to only 10% among adults. Lead causes a wide range of adverse effects, but one of the most serious is a reduction in intellectual development, leading to a lifetime of damage. In the US, there are approximately 20 million shooters using an estimated 20,000 shooting ranges and about 1,700 junior military training groups. Most of these groups use lead-based ammunition, which is particularly concerning for individuals under the age of 21; studies have documented cases of high blood lead levels among adolescents that result from shooting range exposures. One way to protect the health of these most vulnerable individuals is to require the use of only unleaded ammunition for users under the age of 21. We will discuss the strategies and feasibility of protecting the health and wellbeing of young gun users by restricting the sale and use of lead based ammunition for those under 21 years of age. We have an ethical responsibility to protect our children from the health hazards of lead exposure.

## Health Effects of Lead Exposure

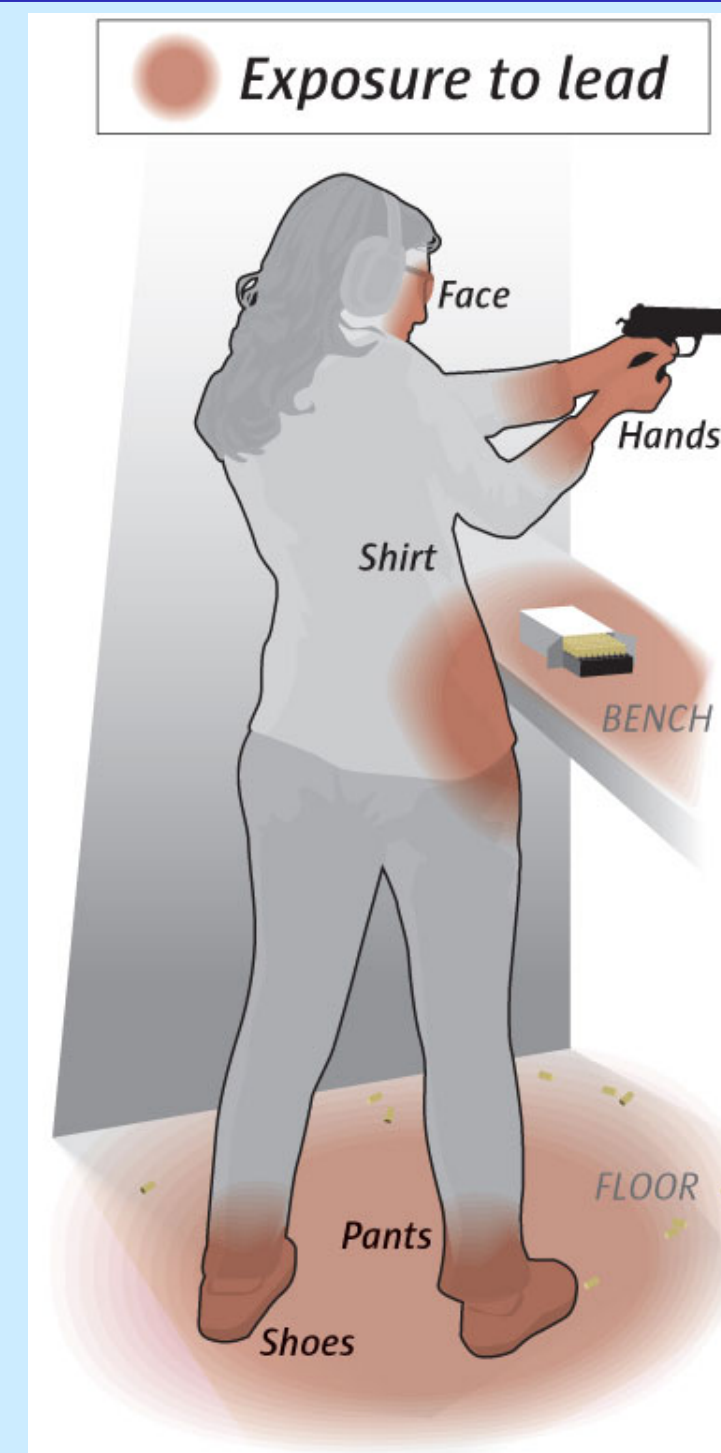


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- Children are not just “little adults;” they are particularly vulnerable to the effects of lead. They will absorb about 50% of the lead ingested, in contrast to only 10% among adults. Lead substitutes for calcium and can lead to lifelong neurological impairment.

## Exposure Concerns from Lead-Ammunition

- Lead-based ammunition continues to be used in shooting ranges, despite available alternatives
- When gun is fired, small amounts of lead are emitted from lead-based ammunition
- Potential exposures to:
  - Shooter
  - Clean-up crew
  - Range masters or trainers
  - Take-home (family, children)
  - Environmental surroundings
- Over 20 million people in the US use 20,000 recreational shooting ranges
  - Additional use for law enforcement and military
    - 1700 junior military training groups
- MMWR paper example: 7 members of shooting team, aged 15-17 years, with mean BLL 24.3 µg/dL (range: 21-31 µg/dL).



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## Proposed Actions for Lead Ammunition in WA State

### HB 1346: Healthy Ammunition Failed to get out of committee

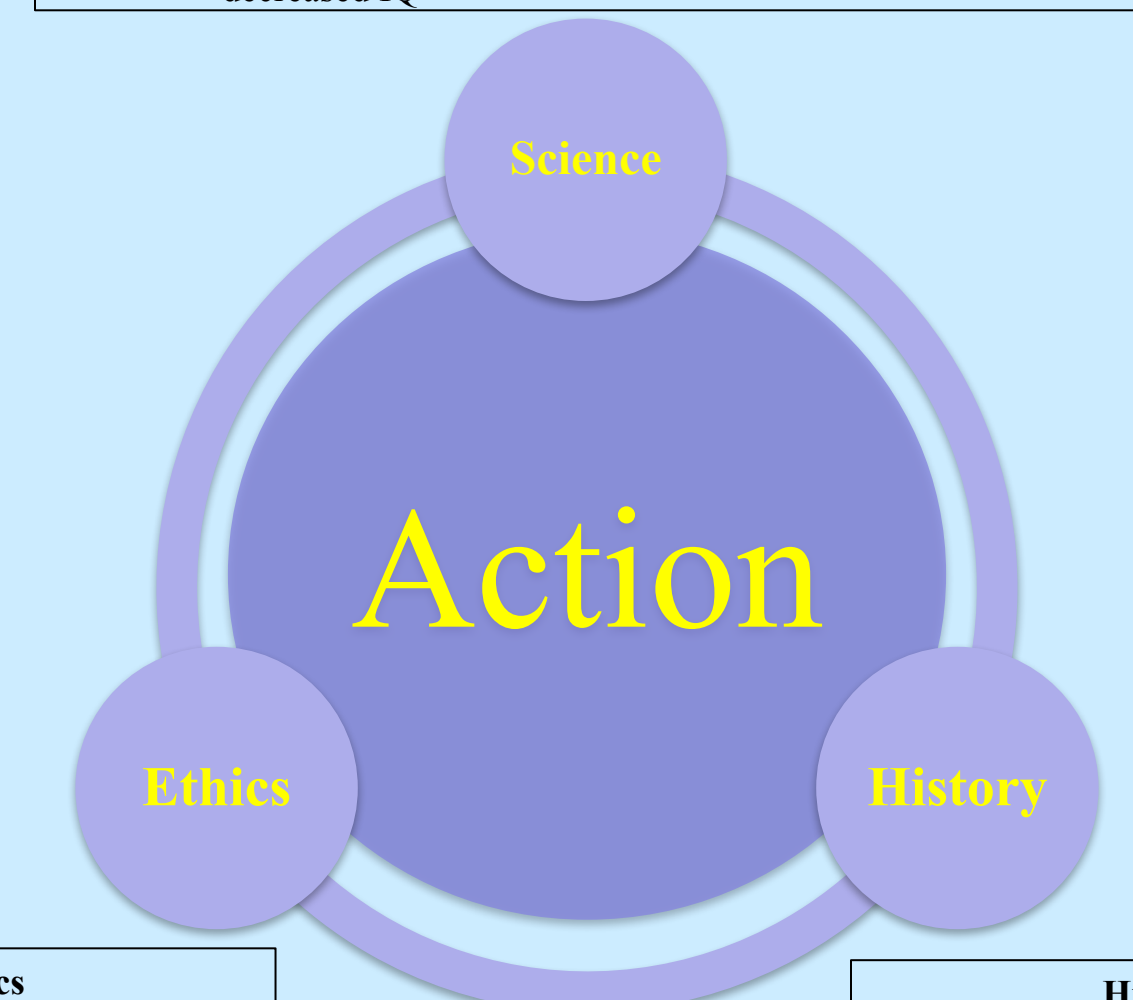
- Prohibits selling, transferring, or otherwise making available any ammunition other than unleaded ammunition to persons under the age of twenty-one.



- Requires the Department of Health to develop and make available a handout and a warning sign regarding the adverse health risks from exposure to lead for persons under the age of twenty-one and the risk for lead exposure arising from the use of leaded ammunition while engaged in sport shooting activities for distribution to and use by firearms and ammunition dealers and firearms ranges.

## Connecting the Dots

- Science**
- Exposure:
    - 20 million recreational firearm shooters, plus law enforcement and military
    - 16,000-18,000 firing ranges across the US
    - Shooters could take lead home & expose family members, particularly children
  - Health
    - CDC – “NO safe level of lead exposure”
    - Many health effects, including nervous system harm & decreased IQ



- Ethics**
- Shooters have a right to safe, health, and lead-free environment

- History**
- Handheld guns that used lead projectiles were developed in the 15<sup>th</sup> century
  - Ammunition uses lead containing primers

## Conclusions & Recommendations

- CDC acknowledges that there is no safe level of lead.** We have an ethical responsibility to protect the entire population from this hazardous metal
- Lead based ammunition should not be available for purchase or use by individuals less than 21 years of age**

### References

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