

# Lead Poisoning

## What can lead poisoning lead to?

- Permanent Brain Damage
- Intellectual Disability
- Loss of speech and language disability
- Irritability
- Lethargy
- Convulsions
- Gastrointestinal problems
- Emotional Regression
- Reduced motor ability

## Early Detection

Early detection leads to early intervention. This results in improved outcomes by limiting additional lead exposure and treating the results of damage due to lead exposure.

- Center for Disease Control Screening Plan recommends testing for:
  - Siblings of children with high blood levels
  - Recent immigrants or refugees
  - Children whose caregivers are exposed to lead
  - Children whose families use folk remedies and imported candles and spices

## Risk Factors and Points of Contamination:

- Low socio-economic status
- Caregivers who work with lead
- Immigrants and refugees
- Mines and factories
- Older homes
- Mexican candy
- Imported spices
- Contaminated soil
- Food raised in contaminated areas
- Folk remedies
- Imported toys
- Imported or old dishes
- Old bathtubs
- Water from lead soldered pipes
- Diets deficient in vitamins and minerals
- Pica activity such as eating soil or paint

## Prevalence

535,000 children in the United States between the ages of 1 and 5 have lead levels dangerous to their health.



UA SCIENCE

Speech, Language,  
& Hearing Sciences

**For more information, visit:**

<http://www.cdc.gov/nceh/lead/>

<https://www.azdhs.gov/phs/oeh/children/lead/>

# Lead Poisoning

## Effects of Lead Poisoning on Language

- The physiological and anatomical results of exposure to lead negatively impact a person's ability to use language to communicate. Verbal intelligence quotients (IQ) decline as levels of lead increase. Verbal abilities decrease as cognition or intelligence decreases.
- Children who experience high levels of lead exposure suffer severe impacts on language and cognition. Many people in this range are diagnosed as intellectually disabled. Motor function impairment resulting from lead poisoning can also negatively affect a person's ability to use written language as loss of fine motor control limits a person's ability to write.
- Low blood lead levels impede a child's capacity to communicate through language. These children demonstrate decreased language processing capacity, especially on complex tasks. fMRI has revealed diminished brain activity in areas of the brain responsible for semantics or word meanings. The negative impact from even low levels of lead in the blood has led some public health experts to conclude that no level of lead is safe.

## Information for SLPs

Children who have an intellectual disability secondary to lead poisoning will likely have similar issues as other children with intellectual disabilities. They may have difficulty generalizing what they have learned to other environments. Clinicians must provide services in a variety of naturalistic environments to ensure language skills acquired during intervention are used in a variety of appropriate settings. Some children will have difficulty initiating communication and will therefore require direct instruction. These children may also benefit from facilitative techniques such as using the proximity of a communication partner to promote conversation. Many of these children benefit from milieu teaching procedures such as giving a child ample time to answer a question, using environmental arrangement to promote language, providing good language models, repetition of the child's statement with additional words, and describing what is happening in everyday scenarios.



UA SCIENCE

Speech, Language,  
& Hearing Sciences

**For more information, visit:**

<http://www.cdc.gov/nceh/lead/>

<https://www.azdhs.gov/phs/oeh/children/lead/>