

# Health Effects of Arsenic, Copper, & Lead

Office of Environmental Health

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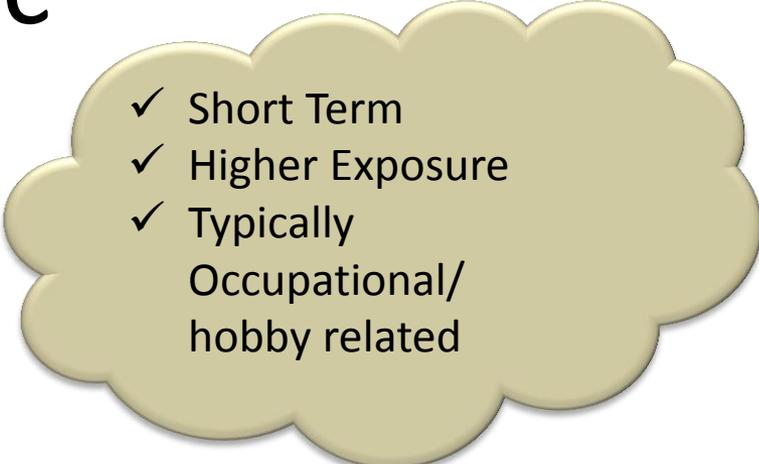
*Health and Wellness for all Arizonans*

# Dose & Exposure Route

- Health effects depend in part on
  - The amount that gets into the body &
  - How it gets into the body
    - E.g., lead, arsenic, and copper in soil don't get through the skin easily, and may cause different symptoms if inhaled than if ingested

# Arsenic

- Sore throat
- Irritated lungs
- Vomiting
- Decreased production of red and white blood cells
- Abnormal heart rhythm
- Damage to blood vessels
- Sensation of “pins and needles” in hands and feet

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- ✓ Short Term
  - ✓ Higher Exposure
  - ✓ Typically Occupational/  
hobby related

# Arsenic

- Skin changes
  - Darkening
  - Discoloration
  - Skin bumps (similar to warts/corns)
- Kidney function may be affected
- Some cancers
  - Bladder
  - Liver
  - Lung
  - Skin



✓ Long Term  
✓ Lower Levels

# Copper

- In the right amount, copper is essential for good health
- FDA: 340 µg/day – 900 µg/day based on age
- Found in
  - Leafy green vegetables
  - Beans
  - Whole grains
  - Dark chocolate
  - Fruit
  - Nuts
  - Poultry

# Copper

- Kidney & Liver Damage
- Decreased fetal growth

- ✓ Short Term
- ✓ Higher Exposure
- ✓ Typically intentional ingestion

# Copper

- ✓ Long Term
- ✓ Lower Exposure

- Irritation of the nose, mouth, & eyes
- Headaches & dizziness
- Nausea, stomach cramps, & diarrhea

# Imported Goods



## Lead-glazed pottery

- Brightly decorated
- Consuming food or liquids cooked or stored in pots



## Toys and Jewelry



- Hand-me-downs
- Brought from another country, purchased at discount stores/swap meets
- Costume or play jewelry



## Spices and Foods

- Turmeric
- Candies
  - Ingredients: chili powder and tamarindo; Ink on some candy wrappers



## Home remedies

- Greta and Azarcon
- Used to treat stomach aches
- Powders can contain up to 95% lead
- Mixed with olive oil and given by mouth



# Take-home Sources



## Bringing lead home with you:

Items you store at home and dust on your clothes, shoes, skins

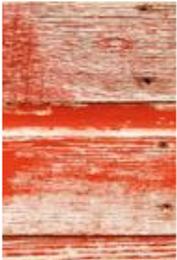
### Occupations:

- Car & radiator repair workshops
- Battery manufacturing
- Construction
- Mining
- Scrap yards
- Plumbing
- Painter

### Hobbies:

- Making ceramics, stained glass
- Hunting-*lead bullets*
- Reloading bullets ★
- Indoor shooting ranges
- Fishing- *lead fishing weights*
- Refinishing furniture

# Lead Sources



## Peeling or chipping paint

- Lead-based paint in pre-1978 homes
- Remodeling pre-1978 homes



## Soil

- Naturally occurring in the soil
- Paint chips from external paint

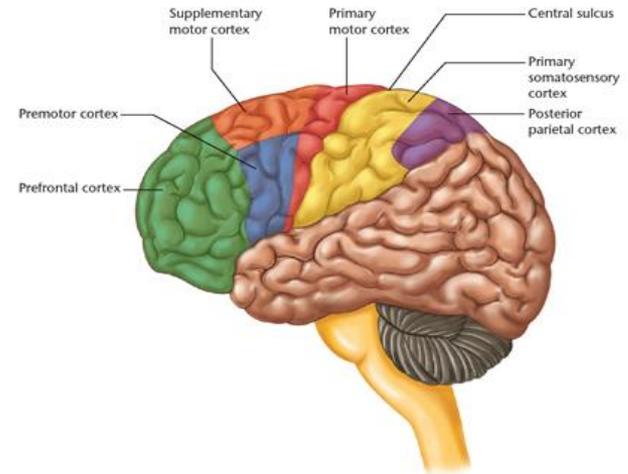


## Dust

- Peeling, chipping, flaking paint
- Take-home
- Remodeling

# Health Effects

- Most children will not have any symptoms; the only way to detect lead poisoning is through a blood test.
  - Slowed development
  - Interferes with growth
  - Lower intelligence
  - Learning difficulties
  - Behavior problems
    - More irritable and/or lack of concentration
  - Damage to the brain, liver, kidney



# Greatest Risk for Lead Poisoning

- Children less than six years of age
  - Their bodies absorb lead more easily than adults
  - Natural tendency to put everything into their mouth
- An unborn baby
  - A pregnant woman can pass lead to her baby
    - Premature birth & reduced birth weight
    - Small head circumference
    - Brain & nervous system damage

