



Lead

- ◆ Odorless, colorless, tasteless toxic metal found in many households and in industrial items
- ◆ Continues to exist in the environment through contamination of water and soil by contact with old products

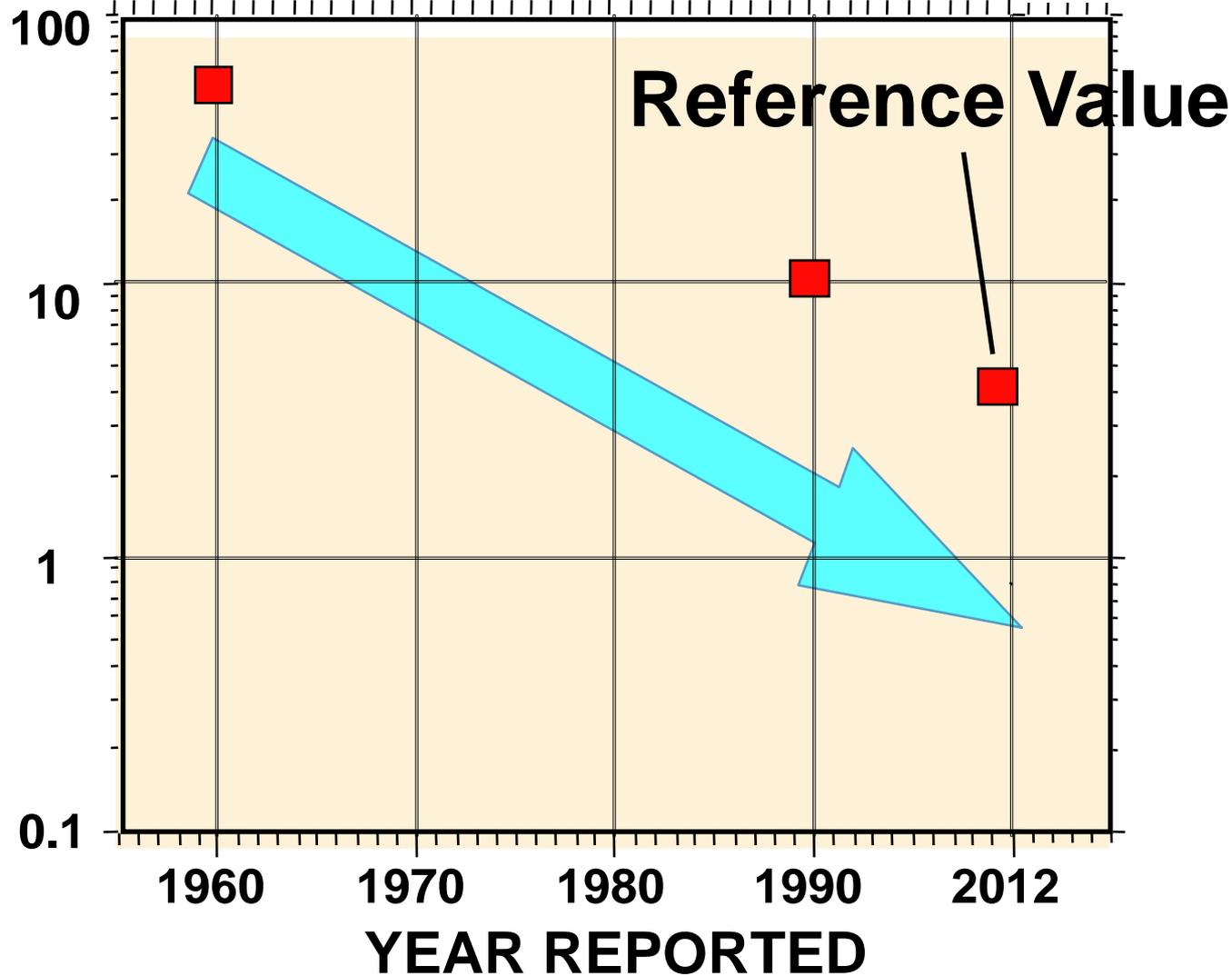


Key sources: paint, soil and water

- Lead-based paint (prohibited in 1978)
- Lead in gasoline (banned in the 1970's)
- Soil (usually from leaded gasoline)
- Old water pipes, current water fixtures
 - Even legally “lead-free” plumbing may contain up to 8% lead.
 - Brass or chrome-plated brass faucets/fixtures can leach significant amounts of lead into the water, especially hot water.



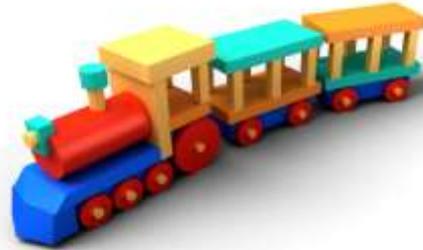
DECLINING THRESHOLD OF HARM - LEAD



Note: Exposures expressed in micrograms/deciliter (blood lead)

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Where's the Lead?



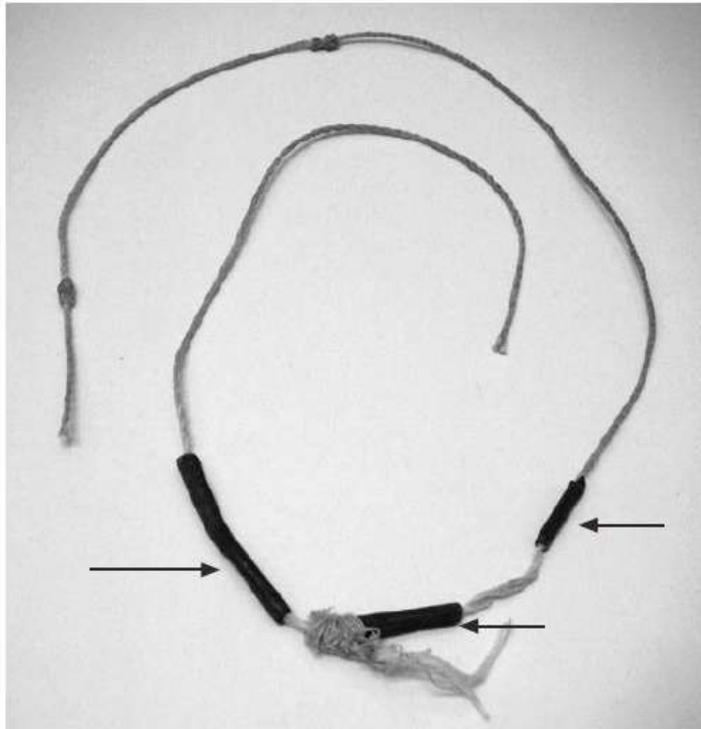


Sources of Lead Continued...

- Vinyl products (including miniblinds, PVC piping)
- Industry (auto repair, batteries, smelters, radiators)
- Also
 - Household dust
 - Cans
 - Christmas Lights
 - Ceramics (old, handmade, imported)
 - Jewelry - cheap
 - Toys – PVC dolls, balls
 - Crystal



Sources of Lead



oCambodian amulet

- at age 6 months, BLL of 1 $\mu\text{g}/\text{dL}$
- at age 1 year, BLL of 10 $\mu\text{g}/\text{dL}$.
- At 15 months, the child's BLL increased to 20 $\mu\text{g}/\text{dL}$

oBeads were 45% lead

Children at Risk



- Higher gastrointestinal absorption rate
- Mother can pass lead through the placenta to her baby
- Hand to mouth behavior
- Symptoms can be easily overlooked: prevention and testing is necessary

Lead: Health Effects



- Elevated lead levels contribute to:
 - Decreased IQ, height, nerve connection
 - Brain disease, seizures, coma
 - Increased learning disabilities and Attention Deficit Hyperactivity Disorder (ADHD)
 - Aggressive Behavior
 - Delayed onset of puberty
 - Deaths from cardiovascular disease
- High levels can be fatal

Lead: What You Can Do, part I

- Get screened or have blood levels tested:
www.cdc.gov/nceh/lead
- Test facilities for contamination
 - Paint inspection and risk assessment
 - Water: no lead level higher than 15 ppb
 - If contaminated, get assistance from EPA or CDC
- Maintain paint to prevent flaking/peeling (window and door frames)
- Use cold water for drinking, cooking and making baby formula.

Lead: What You Can Do, part 2

- Lay out a rough mat for wiping feet.
- Go Shoe-free inside!
- Avoid imported, old or handmade pottery for food.
- Test toys for lead-based paint.
- Avoid children's cheap metal jewelry.
- Test vinyl products for lead (PVC-toys, raincoat, lunch boxes, bath books, bibs).
- Beware of artificial turf & traditional remedies
- Rich diet of iron and calcium to prevent absorption
- Teach children to wash their hands with soap often

www.healthytoys.org



Plastics and Plastic Toys

Beginning and end of life cycle

- Manufacturing creates air and water pollution
- Waste disposal burden - do not degrade easily
- Avoid toys made of soft plastic vinyl.
- Look for “PVC-free” and “BPA-free” labels.
- Do not use plastics or plastic wrap in the microwave (food & beverages).
- Wash all toys before using them.
- Avoid plastic containers with recycling codes #7, #6 and #3.
 - “7” “other” (polycarbonate)
 - “6” “PS” (Polystyrene)
 - “3” or “v” (PVC)



#3, PVC or Vinyl



Polyvinyl chloride. Used in cling wrap, toys, vinyl lunch boxes, shower curtains, plastic squeeze bottles, cooking oil jars, and detergent and window cleaner bottles. Leaches phthalates (toxic additive and stabilizer).

- Exposure through food, water, and consumer products.
- Can cause: low sperm counts, undescended testes, premature onset of puberty, as well as negative effecting the liver, kidney, spleen, and bone formation. A potential carcinogen affecting the liver.



Update on Phthalates

- 3 phthalates permanently banned
 - DEHP, DBP, and BBP
- children's toys
 - products intended for children 12 years of age or younger for use when playing
- child care articles
 - products that children 3 and younger would use for sleeping, feeding, sucking or teething

#7 Bisphenol A (BPA)



Leaches from polycarbonate plastics (hard, clear). Found in baby bottles, water bottles, metal can food liners, sippy cups and thermal register receipts. BPA – toxic additive and stabilizer.

- An estrogen mimicker
- Human exposure is widespread. A CDC study found BPA in 93% of adults.
- Linked with prostate cancer, breast cancer, miscarriages, birth defects, early onset of puberty, decreased sperm production, hyperactivity and aggressiveness.

BPA Continued...



- Discard all food containers with scratches, especially baby bottles and infant feeding cups.
- **TEMPERATURE MATTERS**
 - Do not put boiling or very hot water, infant formula, or other liquids into BPA-containing bottles
 - Warm ready-to-feed liquid formula by running warm water over the outside of the bottle.
 - Do not heat baby bottles of any kind in the microwave

www.hhs.gov/safety/bpa/

Decreasing Exposure



After 3 days of:

- eliminating canned and packaged foods from the diet
 - using only glass or stainless steel food storage containers
-
- BPA body burden ↓66%
 - Phthalates body burden ↓53-56%



Children's
Environmental
Health Network



Mission:

To protect the developing child from environmental health hazards and promote a healthier environment.

Goals:

- 1) Promote sound **policies**
- 2) Promote **research**
- 3) **Educate**



**Eco-Healthy
Child Care®**



Eco-Healthy Child Care®



EHCC helps early childhood learning environments to be as healthy, safe and green as possible by reducing children's exposure to toxic chemicals.

- A national program that partners with child care professionals to eliminate or reduce environmental health hazards found in child care facilities, thus improving the environmental health of children.
- Offers realistic strategies for change; focuses on free to low-cost solutions.
- Provides training, TA, an endorsement, free resources and support to providers seeking Eco-Healthy endorsement.

Eco-Healthy Child Care® (EHCC)



National Recognition Awards:

- Children's Environmental Health Award, EPA (2006)
- Childcare and School IPM Recognition Award (2009-2010)

Key Aspects of EHCC:

- National Advisory Committee
- Train the Trainer Program
- Trainer Network
- Resources: EHCC checklist and 16 fact sheets
- EHCC Endorsement

EHCC[®] Endorsement:



To receive endorsement:

- Download or request checklist by mail
- Fill out checklist, meeting 24 of 30 requirements (3 are mandatory)
- Certify answers (2 validation signatures)
- Agree to “quality control” walk through
- Send in form and \$25 fee
- If meet requirements, receive 2-year EHCC endorsement
- If not, we try to help

To Date:

- More than 1,600 facilities have been endorsed
- Keeping over 62,000 children safe; in 48 states
- GSA and CCLC: 100+ centers endorsed; Bright Horizons

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What facilities get for EHCC[®] Endorsement:



- Certificate
- Poster
- Posting on CEHN website
 - parents can locate EHCC facilities
- Marketing benefits through EHCC website and media stories
- Eco-Healthy tips by e-mail
- Additional educational materials
- ***Reduced toxics within your facility!***

Thank you for your time!

Websites:

www.cehn.org/ehcc

www.ecohealthychildcare.org

