

# Environmental Health in Group Prenatal Care: Lead and Asthma

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## Draft Group Facilitation Guide

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# Lead

**Supplies:** Sugar packets

**Key points to cover:**

- Lead is a significant threat to children's health. Can cause learning and behavioral problems, and can affect the child's health throughout their entire life
- Lead poisoning is preventable
- Lead poisoning cannot be treated (at very high levels –  $\geq 45 \mu\text{g/dL}$  – chelation may be indicated)
- Lead can pass from a pregnant or nursing mother to her baby
- Test kids to screen for lead exposure
- Test homes and renovate them safely to avoid introducing lead hazards

**Discussion Topics: Guide**

Group experience:

Please raise your hand if you know or have heard of a child who has been lead poisoned

- a. What happened?
- b. Did they have symptoms? If so, what?
  - i. Uncommon to have symptoms early on, but sometimes occurs; effects are permanent
  - ii. Low-level, longer term exposure effects include hyperactivity, lowered IQ, difficulty paying attention, and aggression
  - iii. Acute poisoning symptoms (rare) include nausea, vomiting, and loss of motor control
- c. What was done to help them? (not treatable, work on house)
- d. What poisoned them? (Leaded paint and house dust is the most common source of lead for children. Other sources include soil, toys, some inexpensive jewelry, and others)

Activity: How much lead does it take to poison a child?

*How much lead does it take to poison a child?*

- a. There is no safe level of lead exposure
- b. The CDC's "reference dose" for lead is  $5 \mu\text{g/dL}$  (micrograms per deciliter). Children who have a blood lead level  $\geq 5 \mu\text{g/dL}$  are considered "lead poisoned."

*But...what does that look like?*

- a. There are 1,000,000 (1 million) micrograms in a gram.
- b. There is 1 gram of sugar in a sugar packet. Imagine this sugar packet contains 1 million grains of sugar...it would only take a few of these grains to poison a child.
  - i. Optional visual:
    1. Open sugar packet and spread on floor to demonstrate that the amount of lead that can poison a child can't necessarily be seen, **OR**

2. Dip finger in sugar. May have 50 or so grains; visual of how much can poison a child.

If the above activities do not lead the group to touch on all key points, facilitator may use the following discussion guide to address key points:

- 1) If lead is a problem for kids, why talking to pregnant women?
  - a. Lead in pregnant women's bodies can get into their unborn babies (Lead history/bones/occupation) (blood test for women; calcium can help)
  - b. Avoid NEW exposure
    - i. Lead paint banned in 1978. Homes built before then may have lead paint.
    - ii. Fix lead hazards by replacing or painting leaded windows and other parts of home.
    - iii. Hire EPA-certified firm or use lead-safe work practices if doing own work to avoid adding new hazards.
    - iv. Keep pregnant women and young children away during renovations/repairs.
  - c. Protecting baby after birth
    - i. Clean windowsills and floors weekly with soap and water
    - ii. Wash children's hands and toys frequently, especially before eating and after playing outside
- 2) Are the windows in your house made of painted wood?  
Can you guess why I think it is so important to know about pregnant women's windows?
  - a. Hint: I am worried if you answered 'wood' AND your house was built before 1978
    - i. Does anyone know FOR SURE their house was built after 1978
  - b. Lead paint was used on most houses before 1978 (How to find out?)
  - c. Peeling PAINT, and chips, poisonous if ingested
  - d. BUT ALSO: Lead dust can be very dangerous for children; WINDOWS and friction surfaces particularly risky
  - e. ALSO: does anyone have a garden in their yard? Bare soil? SOIL can also have high lead
- 3) So, what can we do to prevent lead poisoning?
  - a. HOUSE: test (rent/own), maintain, clean
  - b. TEST KIDS: one AND two, follow up
  - c. NUTRITION: calcium and iron, can help but not solve
- 4) Questions?
- 5) Recap:
  - a. Lead is a disease kids get from their houses
  - b. It cannot be treated, only prevention
  - c. Prevention starts during pregnancy
- 6) Resources for more info
  - a. ATSDR – information about lead and health effects, including case study and recording of grand rounds presentation for medical providers (good overview, optional CE credit): <http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=22#10>
  - b. CDC – information about preventing lead exposure: <http://www.cdc.gov/nceh/lead/tips.htm>

# Asthma

**Supplies:** Diaper bag with asthma-related items

**Key points to cover:**

- Asthma is a chronic (can't be "cured") disease that affects about 1 in 12 people in the U.S.
- Asthma can sometimes be caused by childhood exposure to environmental hazards like tobacco smoke and cockroaches. For some people with asthma, attacks may be triggered by mold, smoke, chemicals, pets, or other things in the home.
- Asthma triggers in the home can be controlled using simple and inexpensive techniques
- Many of the strategies for controlling asthma in the home help reduce other environmental hazards in the home such as lead and pests

**Discussion Topics: Guide**

Group experience:

Has anyone had experience with asthma?

- a. Can you describe what it's like?
- b. What happens during an asthma attack?
- c. What causes asthma attacks? – Today, we're going to focus on environmental asthma triggers

Activity: How can I control asthma in my home?

- 1) If large group, split up into small groups; if small group, work together
- 2) Hand out activity items (or pass around bag and allow participants to reach in and pick an item. All of these items have two similarities: they are commonly found in homes, and they all relate to asthma somehow.
- 3) Use these items to guide discussion about asthma triggers in the home and how to control them.
  - a. If in groups, give patients a few minutes to talk amongst themselves about how their items might relate to asthma.
  - b. If all together, talk as a group. This is not a quiz, and there are no right answers! Some of the items may lead to discussions not related to asthma. Facilitator may need to ask guiding questions, as some of the items are not immediately obvious in how they relate.

If the above activities do not lead the group to touch on all key points, facilitator may use the following discussion guide to address key points:

- 1) Why am I talking to you (pregnant women) about asthma?
  - a. Preventing asthma – some things cause it; other things protective
- 2) What can you do to prevent/manage asthma in your home?
  - a. Keep smoking out
  - b. Reduce dust (mites)
  - c. Healthy Housekeeping

- d. Keep pests away
- 3) Healthy Housekeeping
- a. Discuss healthy housekeeping techniques:
    - i. Work wet: lightly mist the area when sweeping and dusting to trap dust and keep it out of the air
    - ii. “Two bucket” mopping: one for soapy water, one for rinse water. After mopping floor, rinse mop before returning to soapy water. This removes about 80% more from the floor during mopping. Change rinse water after each room. Note: this also helps save money on cleaner since you don’t have to change the mop water as often.
    - iii. Store and use chemicals safely: follow directions carefully; never mix chemicals; use in well-ventilated room; consider using safe chemical alternatives (many chemical cleaners can trigger asthma in sensitive individuals); store chemicals away from children and pets in clearly labeled containers
    - iv. Reduce clutter to make cleaning easier, reduce dust, and help keep pests away
  - b. If available, hand out alternative cleaner recipes, healthy home booklets, and DVDs.
- 4) Questions and wrap-up
- a. Are there things in your home that could contribute to asthma? If so, how can you change them?
  - b. What are some ways to manage cleaning, pest control, etc. in a safe way once your baby is born?

Resources:

ATSDR – case study for environmental triggers of asthma (good overview, optional CE credit):  
<http://www.atsdr.cdc.gov/csem/csem.asp?csem=18&po=0>

CDC – Information about asthma triggers (summary):  
<http://www.cdc.gov/asthma/faqs.htm#attack2>

# Additional Resources

Matte, TD and DE Jacobs. (2000). Housing and health: Current issues and implications for research and programs. *Journal of Urban Health* 77(1): 7-25. <http://link.springer.com/article/10.1007/BF02350959#>

WXXI Healthy Home Segments (these are included in the Healthy Homes DVDs we provided, but are also accessible on WXXI's YouTube channel): <http://www.youtube.com/watch?v=Vfw-raPTo-0&list=PL67178D6E00A0FADF>

Krieger, J, DE Jacobs, PJ Ashley, A Baeder, GL Chew, D Dearborn, HP Hynes, JD Miller, R Morley, F Rabito, and DC Zeldin. (2010). Housing Interventions and Control of Asthma-Related Indoor Biologic Agents: A Review of the Evidence. *Journal of Public Health Management & Practice* 16(5): S11-S20. [http://journals.lww.com/jphmp/Fulltext/2010/09001/Housing\\_Interventions\\_and\\_Control\\_of.4.pdf](http://journals.lww.com/jphmp/Fulltext/2010/09001/Housing_Interventions_and_Control_of.4.pdf)

EPA – *Help Your Child Gain Control Over Asthma*. Designed for parents; pgs 21-30 are a good overview of environmental triggers and how to address them: [http://www.epa.gov/asthma/pdfs/ll\\_asthma\\_brochure.pdf](http://www.epa.gov/asthma/pdfs/ll_asthma_brochure.pdf)