New York State
Department of Health &
American College of
Obstetricians and Gynecologists
District II

Lead Poisoning Prevention Guidelines for Prenatal Care Providers

Prenatal Care Provider's Reference Card

(Part I)

Guidelines for the Prevention and Identification of Lead Poisoning in Pregnant and Postpartum Women

Since bloodborne lead crosses the placenta, a pregnant woman with an elevated blood lead level may expose her fetus to the toxic effects of lead.

1. All pregnant women should receive anticipatory guidance on preventing lead poisoning during pregnancy. They should be informed about the major sources of lead in the environment and the means of preventing exposure.
2. At the initial prenatal visit, health care providers should assess a woman's risk for current high dose lead exposure. The questions below are the recommended risk assessment. Those women found to be at risk for current high dose exposure should be tested for blood lead levels and counseled on how to reduce or eliminate current exposure.
3. Women found to have a blood lead level of 10 micrograms per deciliter (µg/dL) or greater, should receive additional risk reduction counseling based on their responses to the risk assessment. There is currently no medical treatment recommended for women with elevated lead levels during pregnancy. Women who may be occupationally exposed should be referred to a state Occupational Health Clinic for individual guidance. (A list of these clinics and their telephone numbers can be found in the management guidelines, see Prenatal Care Providers Reference Card-Part II.)
4. At the postpartum visit, providers should advise all women about the major causes of lead poisoning in infants and the means of preventing exposure.

Risk Assessment Questions For Pregnant Women

The following questions are suggested to determine if a pregnant woman is at risk for current high dose exposure to lead. They are adapted from a risk assessment questionnaire for children developed by the Centers for Disease Control and Prevention (CDC).

- Do you or others in your household have an occupation that involves lead exposure? (See section A.)
- Sometimes, pregnant women have the urge to eat things other than food, such as clay, soil, plaster or paint chips. Do you ever eat paint chips?
- Do you live in an old house with ongoing renovations that generate a lot of dust (e.g., sanding and scraping)?
- To your knowledge, has your home been tested for lead in the water and, if so, were you told that the level was high? (Note: a level over 15 parts per billion [ppb] or micrograms per liter [µg/L] is considered high.)
- Do you use any traditional folk remedies or cosmetics that are not sold in a regular drug store or are homemade, which may contain lead? (See section B.)
- Do you or others in your household have any hobbies or activities likely to cause lead exposure? (See section C.)
- Do you use noncommercially prepared pottery or leaded crystal?

Testing is not recommended for women who are not at risk. If the woman answers "yes" to any of these questions, she is at risk for current high dose lead exposure, and should have a blood lead test. Given the relatively low incidence of elevated lead levels in pregnancy, it is suggested that unless a woman responds "yes" to a risk assessment question, she not be tested unless there is other reason to suspect potential ongoing exposure to lead. A blood lead test during pregnancy is not indicated for a previous history of childhood lead exposure.

A.
Lead Related Occupations & Industries

Lead abatement

Use of lead based paints

Home renovation/restoration

Metal scrap yards and other recycling operations

Manufacturing and installation of plumbing components

Brass/copper foundry

Glass recycling, stained glass and glass manufacturing

Occupations using firearms

Firing range work

Pottery making

Production and use of chemical preparations

Bridge, tunnel and elevated highway construction

Motor vehicle parts and accessories

Automotive repair shops

Manufacturing of industrial machinery and equipment

Battery manufacturing and repair

If a pregnant woman is exposed to lead at work, she has rights to a safe working environment under federal and state laws. To obtain information on employees' workplace rights under OSHA (Occupational Safety and Health Administration) and PESH (Public Employee Safety and Health) call the New York State Department of Health, Center for Environmental Health Information line, at 1-800-458-1158. If a woman is unsure about her lead exposure at work, she may call a state Occupational Health Clinic for further information. (See list Part II.)

B.
Traditional/Folk Remedies or Cosmetics That Have Been Found To Contain Lead

Alkohl (also known as kohl, surma): A black powder used within Middle Eastern, African, and Asian cultures as an eye cosmetic and umbilical stump remedy.

Azarcon (also known as reuda, liga, coral, alarcon and maria luisa): A bright orange powder used within Hispanic cultures to treat gastrointestinal upset and diarrhea.

Bali goli: A round, flat black bean which is dissolved in "gripe water" and used within Asian Indian cultures for stomach ache.

Ghazard: A brown powder used within Asian Indian cultures to aid digestion.

Greta: A yellow-orange powder used within Hispanic cultures to treat digestive problems.

Pay-loo-ah: An orange red powder used within Southeast Asian cultures to treat rash or fever.

Source: "Lead Poisoning Associated With Use Of Traditional Ethnic Remedies- California 1991-1992," *MMWR* 1993; *42*(27): 521-524.

C.
Hobbies and Activities That May Cause Lead Exposure

The most common household activities associated with lead hazards are *home renovations and repairs.* These include scraping, sanding or burning of lead-based paint on woodwork, walls or other household structures. Also, sanding, stripping or burning of lead-based painted furniture generates a lead hazard. Pregnant women and children are especially sensitive to these hazards and should not be present when this work is done.

The following are other potential sources of exposure:

- making stained glass and painting on stained glass
- copper enameling
- bronze casting
- making pottery and ceramic ware with lead glazes and paints
- casting ammunition, fishing weights or lead figurines
- collecting, painting or playing games with lead figurines
- jewelry making with lead solder
- electronics with lead solder
- glassblowing with leaded glass
- print making and other fine arts (when lead white, flake white and chrome yellow pigments are involved)
- liquor distillation
- hunting and target shooting

D.
Nutritional Information for Pregnant and Lactating Women

1. Eat frequent and regular meals. Environmental lead is more easily absorbed on an empty stomach.
2. Iron or calcium deficits promote lead absorption. A diet rich in iron and calcium reduces the absorption of lead. Calcium supplements made from bone should be avoided as they may contain lead.
3. Breastfeeding is generally safe even if a woman has an elevated blood lead level. However, if a mother with an elevated blood lead level is breastfeeding, the infant's blood lead level should be carefully and frequently monitored. (See Prenatal Care Providers' Reference Card-Part II for details.)

Examples of Sources of Iron and Calcium

Iron

- fortified breads and cereals
- cooked legumes (dried beans and dried peas)
- spinach
- lean red meat

Calcium

- milk
- yogurt
- cheese
- cooked greens
- calcium fortified orange juice

Brochures to assist with prenatal and postpartum risk reduction education are available from the New York State Department of Health, Box 2000, Albany, NY 12220. Request the titles:

"If You're Pregnant, Get Ahead of Lead"
(English #2511, Spanish #2512) **AND**

"If You Have A Baby, Get Ahead of Lead"
(English #2513, Spanish #2514).

E.
Methods To Reduce Lead Exposure in Pregnant Women - Do's and Don'ts

- **Do** discuss with your employer ways to reduce possible lead exposure on the job.
- **Do** damp mop and damp dust rather than sweep and dry dust.
- **Do** avoid drinking acidic liquids from imported ceramic cups, mugs or from leaded crystal.
- **Do** avoid the use of traditional folk remedies or cosmetics which might contain lead.
- **Do** avoid lead-related crafts to avoid exposure to lead**.**
- **Do** wash hands thoroughly before meal preparation.
- **Do** run water from the faucet for at least a minute until it runs cold before collecting for drinking and cooking.
- **Don't** be in the home when renovations that may involve lead-based paint are taking place.
- **Don't** clean-up after renovations involving lead-based paint.
- **Don't** strip paint from antique furniture, such as cribs and rocking chairs.
- **Don't** store food in open imported cans.

F.
Education for Postpartum Women to Prevent Lead Poisoning In Infants

- Breastmilk usually is best for babies, even if your blood lead level is elevated. (See detailed information in Part II.)
- If baby formula is used, take care when preparing it. Use cold tap water - not hot - to make infant formula. Let the cold water run for at least a minute, to flush any lead picked up from the pipes. Purchase bottled water if the home's drinking water exceeds the U.S. Environmental Protection Agency's action level of 15 ppb (µg/L).
- Feed your baby foods that get ahead of lead. Iron fortified formula and cereals can lower your baby's lead risk. Serving foods that are high in iron and calcium can help lower the family's lead risk.
- Obtain a pacifier that can be attached to your baby's shirt so it won't fall on the floor. Wash the pacifier often. This will help remove any lead dust.
- Wash your baby's hands and toys often. Babies suck their fingers and put things in their mouths - things that might have lead dust on them. Washing helps lower the lead risk.
- Take your baby for regular health care visits and follow the health provider's lead test advice. All children should be tested by their first birthday, and again when they are two years of age.

Prenatal Care Provider's Reference Card

(Part II)

Guidelines for Management of Lead Poisoning in Pregnant Women and Postpartum Women

All women should receive:

1. At the initial prenatal visit:

   • Risk assessment* (for current high dose lead exposure);

   • Anticipatory guidance (on avoiding lead exposure):

2. At the postpartum visit:

   • Anticipatory guidance for prevention of lead poisoning in infants.

*If the pregnant woman is at risk for current high dose lead exposure, a blood lead test should be performed.

Blood Lead Level	Actions (Management during Pregnancy)
0-9 (µg/dL)	• Provide information on sources of lead, how to avoid exposure and nutrition information. (See Part I, section A, B, C, D and E.)
10-19 (µg/dL) (mildly elevated)	• Retest blood lead level to determine if the level is increasing. If there is a significant rise in the blood lead level (to 20 (µg/dL or higher), seek consultation from an information center for further risk reduction and patient management information. (See attached list of Regional Resource Centers.) If there is no upward trend, repeat blood lead level during third trimester close to term to assess need for newborn evaluation. • Provide counseling on possible sources of lead and information on how to reduce or eliminate exposure. (See Part I, section A, B, C

	and risk reduction practices, section E.) • Provide nutrition counseling to reduce absorption of ingested lead. (See Part I, section D.)
20-44 (µg/dL) (moderately elevated)	• Retest blood lead level to determine if the level is increasing. If repeat blood level is between 10-19, repeat elevated blood lead test during third trimester close to term to assess need for newborn evaluation. If blood lead level remains above 20 µg/dL, seek consultation from an information center for further risk reduction and patient management information. (See attached list of Regional Resource Centers.) • Provide counseling on possible sources of lead and information on how to reduce exposure. (See Part I, section A, B and C, and risk reduction practices section E.) • Provide nutrition counseling to reduce absorption of ingested lead. (See Part I, section D.) • Refer woman to an Occupational Health Clinic if occupational exposure is suspected. (See attached list of clinics.) • Refer woman to the local public health agency for an environmental investigation if occupational exposure, hobbies and folk remedies have been ruled out as a source of lead exposure. • For advice about patient counseling concerning teratogenic effects, consult a teratogen information service. (See attached centers.)
45 µg/dL or greater (severely elevated)	• Consult with a Regional Lead Poisoning Prevention Resource Center or other professional with expertise in clinical management of lead poisoning in adults. (See attached list of centers.) Early symptoms of lead poisoning may include: fatigue, irritability and depression, difficulty sleeping

and concentrating, stomach cramps, constipation, weakness in the arms and legs and problems with coordination. Very high levels may cause convulsions, coma and even death. Consider hospitalization. Immediate removal from the contaminated environment may be indicated.

- Provide counseling on possible sources of lead and provide information on how to eliminate or reduce exposure. (See Part I, section A, B, C, and risk reduction practices section E.)
- Provide nutrition counseling to reduce absorption of ingested lead. (See section D.)
- Refer woman to an Occupational Health Clinic if occupational exposure is suspected. (See attached list of centers.)
- Refer woman to the local health agency for environmental investigation if occupational exposure, hobbies and folk remedies have been ruled out as a source of lead exposure.
- For advice about patient counseling concerning teratogenic effects, consult a teratogen information service. (See attached list of centers.)

Management at time of delivery

If a baby is born to a mother with an elevated blood lead level (10 µg/dL or greater), umbilical cord blood should be tested to determine the newborn's blood lead level. The infant's pediatrician should be informed so that appropriate follow-up can take place, including early follow-up testing of the baby.

Breastfeeding recommendations for women with an elevated blood lead level

Breastfeeding is generally safe for women with elevated blood lead levels. However, if a mother with an elevated blood lead level is breastfeeding, the infant's blood lead level should be carefully and frequently monitored, within two weeks of baseline measurement and then at least monthly. If the infant's blood lead level is 10 µg/dL or greater and rising, and no remediable environmental source of lead can be detected, breastfeeding should be discouraged.

Information Centers

Occupational Health Centers

Western New York Region (West Seneca)
Union Occupational Health Center
716-668-8800

Finger Lakes Region (Rochester)
Finger Lakes Occupational Health Services affiliated with the University of Rochester
585-244-4771
800-925-8615
www2.envmed.rochester.edu/envmed/occmed/fingerlakeswelcome.html

Central New York Region (Syracuse)
Central New York Occupational Health Clinical Center affiliated with SUNY Upstate Medical University
315-432-8899
www.upstate.edu/fmed/uhfmed/cnyohcc

Southern Tier Region (Binghamton)
Central New York Occupational Health Clinical Center affiliated with SUNY Upstate Medical University
315-432-8899
www.upstate.edu/fmed/uhfmed/cnyohcc

Adirondack Region (Canton)
Central New York Occupational Health Clinical Center affiliated with SUNY Upstate Medical University
315-432-8899
www.upstate.edu/fmed/uhfmed/cnyohcc

Mid-Hudson / Eastern New York Region (Albany)
Occupational and Environmental Health Center of Eastern New York affiliated with GHI
518-690-4420
800-419-1230
www.occmedgroup.com

Lower Hudson Valley Region (Yonkers)

Mt. Sinai-IJ Selikoff Center for Occupational and Environmental Medicine affiliated with Mt. Sinai School of Medicine
914-964-4737 - Hudson Valley/Yonkers Clinical Center
www.mssm.edu/cpm/selikoff_clinical_center/

New York City (Manhattan)

Mt. Sinai-IJ Selikoff Center for Occupational and Environmental Medicine affiliated with Mt. Sinai School of Medicine
212-241-5555 - Manhattan Clinical Center
www.mssm.edu/cpm/selikoff_clinical_center/

Bellevue/NYU Occupational and Environmental Medicine Clinic affiliated with Health and Hospitals Corporation
212-562-4572
http://www.med.nyu.edu/environmental/outreach/bnoemc.html

Long Island Region (Stony Brook)

Long Island Occupational and Environmental Health Center affiliated with SUNY Stony Brook
631-444-6250
www.uhmc.sunysb.edu/prevmed/lioehc/mission.html

Specialty Agricultural Clinic (Cooperstown)

New York Center for Agricultural Medicine and Health affiliated with Bassett Hospital
607-547-6023
800-343-7527
www.nycamh.com

Regional Lead Poisoning Prevention Resource Centers

METROPOLITAN/HUDSON VALLEY REGION:

MONTEFIORE MEDICAL CENTER
Environmental Sciences Lead Program
111 East 210th Street, Bronx, New York 10467

Medical Director: John F. Rosen, MD
(718) 547-2789/ext. 217 Fax: (718) 547-2881/8251
Jrosen5@ix.netcom.com

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Geographic Area: Nassau, Suffolk, Queens, Bronx, Richmond, Kings, New York, Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

CENTRAL/EASTERN REGION:

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WESTERN REGION:

KALEIDA HEALTH/WOMEN & CHILDREN'S HOSPITAL OF BUFFALO
Judge Joseph S Mattina Community Health Center
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Teratogen Information Services

PEDECS:
Perinatal Environmental and Drug Exposure Consultation Service (Teratogen Information Service)

University of Rochester Medical Center
Department of Obstetrics and Gynecology
601 Elmwood Avenue
Rochester, NY 14642-8668
Director: Dr Richard Miller
(585) 275-3638 Fax: (585) 244- 2209

New York State Pregnancy Risk Network
Ferre Institute
124 Front Street
Binghamton, NY 13905
Director: Luba Djurdjinovic, MS
(800) 724-2454

State of New York
Department of Health