

INFORMATION FOR HEALTH CARE PROVIDERS ON ADULT LEAD POISONING

HEALTH CARE PROVIDERS SHOULD:

- Test blood lead levels of adults at risk for lead exposure.
- Recognize the signs and symptoms of lead poisoning.
- Report adult blood lead levels $\geq 10\mu\text{g/dL}$ to the NYC Department of Health and Mental Hygiene (DOHMH) by calling 212-788-4290 and faxing test results to 212-788-4299.

Risk Factors for Lead Exposure in NYC

- Engaging in occupations or hobbies involving lead dust or fumes.
In NYC, the majority of adult lead poisoning cases are related to re-painting and repairing steel bridges and other steel structures containing lead paint. Other jobs and hobbies with potential lead exposure include: construction and demolition, painting, automotive and electronics repair, home repair, furniture refinishing, and working with jewelry, pottery, glass, metal and firearms.
- Use of imported products containing lead such as foods, spices, pottery or cosmetics.
- Ingesting imported health remedies.
For more information, visit <http://www.nyc.gov/html/doh/downloads/pdf/lead/lead-herbalmed.pdf>.
- Having a previous history of lead poisoning.
- Times of bone turnover in a previously lead exposed individual.
Endogenous bone lead stores accumulated from past exposures can be released during times of bone turnover, such as, prolonged immobilization post long-bone fracture, hyperthyroidism, menopause, pregnancy, and lactation.
- Eating non-nutritive substances.
This behavior has been noted in individuals with mental disabilities and pregnant women. Eating clay, crushed pottery, or soil has been recognized in certain cultures.
- Having retained metal fragments such as bullets in the body.

Some Signs and Symptoms

- The majority of adults with elevated lead levels are asymptomatic.
- Vague nonspecific symptoms may include myalgias, arthralgias, fatigue, irritability, insomnia, anorexia, constipation, decreased libido, impaired short-term memory, difficulty concentrating, and headaches.
- At higher blood lead levels, more specific signs and symptoms may include abdominal pain ("lead colic"), metallic taste, infertility, increased blood pressure, nephropathy, microcytic anemia, basophilic stippling in erythrocytes, peripheral motor neuropathy (extensor weakness or "wrist or ankle drop"), gout ("saturnine gout"), and encephalopathy.

Diagnostic Tests

- The standard test for diagnosing lead exposure is a venous blood lead level (BLL).
- Erythrocyte protoporphyrin (EP) levels, including zinc protoporphyrin (ZPP) and free erythrocyte protoporphyrin (FEP), are useful in differentiating between acute and chronic exposure. EP levels are elevated in patients with chronic exposure to lead and may also be elevated in patients with iron deficiency anemia. They are not a reliable method for screening patients for lead exposure.

Management

- Recommend ways to reduce or remove sources of lead exposure.
See below "Discuss Ways to Reduce Lead Exposure with Patients."
- Provide follow-up testing and education to any person with a BLL $\geq 5\mu\text{g/dL}$.
- Consider monthly blood lead testing for adults at risk for continued exposure to lead.
- Report BLLs $\geq 10\mu\text{g/dL}$ to DOHMH within 24 hours as required by NYC Health Code (24 RCNY §11.03).
DOHMH will interview adult patients with a BLL $\geq 25\mu\text{g/dL}$ and pregnant women with a BLL $\geq 15\mu\text{g/dL}$.
- Consider referring patients with a BLL $\geq 10\mu\text{g/dL}$ to a medical toxicologist or, if occupationally exposed, to an occupational medicine physician.
- For more information on managing lead exposure in pregnant women, see <http://www.nyc.gov/html/doh/downloads/pdf/chi/chi26-4.pdf>.
- Consult with DOHMH and a medical toxicologist to consider chelation in non-pregnant patients who are symptomatic or have BLLs $\geq 50\mu\text{g/dL}$. If the patient is occupationally exposed, consult with an occupational medicine physician.
The decision to chelate is based upon the presence and duration of lead-related symptoms, current BLL, and duration of exposure. Before chelation therapy is administered, the patient must be removed from lead exposure since continuing exposure may result in enhanced absorption of lead and worsening of toxicity.
- Consider referring patients persistently eating non-nutritive substances to psychiatrists for behavior modification therapy.

Discuss Ways to Reduce Lead Exposure with Patients

- Ask patients about potential lead exposure on the job and in the home.
- If patient works with lead on the job, review appropriate use of personal protective equipment and workplace hygiene to keep exposure as low as possible and prevent take-home exposures for other household members. Advise the patient to:
 - Wear a respirator and keep it clean.
 - Use wet cleaning methods and HEPA vacuums to clean work areas. Never dry sweep or use compressed air.
 - Wash hands and face before eating, drinking and smoking. Never eat, drink or smoke in the work area.
 - When possible, wash or shower and change your clothes and boots before leaving work. Keep all work items away from family areas and wash and dry work clothes separately from other laundry.
- Advise against the use of imported products that may contain lead such as some health remedies, spices, foods, pottery and cosmetics.
- Caution patients about using imported glazed ceramic products. Pottery which is chipped or cracked, or used to prepare hot or acidic foods and drinks are more likely to leach lead.
- Warn patients about the health risks from eating non-food items such as clay, soil, pottery, or paint chips.

Information Resources

- To report adult BLLs $\geq 10\mu\text{g/dL}$ to NYC DOHMH, call 212-788-4290 and fax test results to 212-788-4299.
- Call NYC DOHMH at 212-788-4290 during regular business hours to:
 - Receive more information on adult lead poisoning
 - Obtain a referral to a medical toxicologist or an occupational medicine physician
 - Discuss a product your patient is using that may contain lead
- Call Poison Control at 1-800-222-1222 for urgent consultations on the diagnosis or treatment of lead poisoning.
- To refer a patient to a NYS Occupational Health Clinic visit www.health.state.ny.us/environmental/workplace/clinic_network.htm.
- Consult the Occupational Safety and Health Administration (OSHA) standards for construction workers and other employees in certain lead-related industries at www.osha.gov/SLTC/lead.
- To find a NYS laboratory certified to analyze blood for lead, call 518-485-5378 or visit www.wadsworth.org/labcert/lep/CategoryPermitLinks/CategoryListing.htm.
- To find an OSHA laboratory approved to analyze blood drawn as part of an occupational lead program, visit www.osha.gov/SLTC/bloodlead/index.html.
- Find more information on lead poisoning at www.nyc.gov/lead.