Key Messages

- Test blood lead levels (BLLs) of adults at risk for lead exposure.
- Recognize the signs and symptoms of lead poisoning.
- Report adult blood lead levels (BLLs) ≥10 μg/dL to the NYC Health Department by faxing test results to 646-632-6105.

Risk Factors for Lead Exposure in NYC

- Engaging in occupations or hobbies involving lead dust or fumes.
  > In NYC, most adult lead poisoning cases are related to repainting 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.
- Using imported products that contain lead, such as foods, spices, pottery, or cosmetics.
- Ingesting imported health remedies.
  > For more information, visit www.nyc.gov/hazardousproducts.
- Having a previous history of lead poisoning.
- Bone turnover in a previously lead-exposed individual.
  > Endogenous bone lead that has 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 nonfood items such as soil, paint chips, clay, or crushed pottery.
  > This behavior has been observed in individuals with cognitive disabilities and pregnant women from certain cultures.
- Having retained metal fragments, such as bullets, in the body.

Signs and Symptoms

- Most 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 BLLs, 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 (“sartorine gout”), and encephalopathy.

Diagnostic Tests

- The standard test for diagnosing lead exposure is a venous blood lead test.
- 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. EP levels are not a reliable measure for screening patients for lead exposure.
Management

• Recommend ways to reduce or remove sources of lead exposure (see Counseling below).
• Provide follow-up testing and education to adults with a BLL ≥5 μg/dL.
• Consider monthly blood lead testing for adults at risk for continued exposure to lead.
• Report BLLs ≥10 μg/dL to the New York City Health Department within 24 hours as required by the NYC Health Code (24 RCNY§11.03). Providers using a point-of-care device (LeadCare®) to analyze blood samples in their offices must report BLLs <10 μg/dL within 5 days.
  > The NYC Health Department will interview adults with BLLs ≥10 μg/dL.
• Consider referring adults with BLLs ≥10 μg/dL to a medical toxicologist or, if occupationally exposed, to an occupational medicine physician.
• For more information on managing lead exposure in pregnant women, visit www1.nyc.gov/assets/doh/downloads/pdf/lead/lead-guidelines-preg.pdf.
• Consult with the NYC Health Department and a medical toxicologist to consider chelation in nonpregnant patients who are symptomatic or have BLLs ≥50 μg/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 nonfood items to psychiatrists for behavior modification therapy.

Counseling

• Ask patients about potential lead exposure on the job and in the home.
• If patients work with lead on the job, review appropriate use of personal protective equipment and workplace hygiene to keep exposure as low as possible and to prevent take-home exposures for other household members. Advise patients to:
  ◦ Wear a respirator and keep it clean.
  ◦ Use wet cleaning methods and high-efficiency particulate air (HEPA) vacuums to clean work areas. Never dry sweep or use compressed air.
  ◦ Wash hands and face before eating, drinking, or smoking. Never eat, drink, or smoke in the work area.
  ◦ When possible, wash or shower and change 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 for food. Pottery that is chipped or cracked, or used to prepare hot or acidic foods and drinks, is more likely to leach lead.
• Warn patients about the health risks from eating nonfood items such as clay, soil, pottery, or paint chips.

Resources

• Call the NYC Health Department at 646-632-6102 during regular business hours to:
  ◦ Report adult BLLs ≥10 μg/dL (fax test results to 646-632-6105).
  ◦ 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 the Poison Control Center at 800-222-1222 for urgent consultations on the diagnosis or treatment of lead poisoning.
• To refer a patient to a New York State occupational health clinic, visit www.health.ny.gov/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 New York State laboratory certified to analyze blood for lead, call 518-485-5378 or visit www.wadsworth.org/labcert/clep/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 nyc.gov/lead.