The New York City Department of Health and Mental Hygiene Guidelines for Health Care Providers

Lead Exposure in Adults

Key Messages

• Test blood lead levels (BLLs) of adults at risk for lead exposure.
• Recognize the signs and symptoms of lead poisoning.
• Report BLLs ≥10 μg/dL to the NYC Health Department by fax to 646-632-6105. To report a hospital admission or discuss a case, call 646-632-6102.

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 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 following 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 (“saturnine 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.

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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. (For more information, visit nyc.gov/hazardousproducts.)
• 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 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.
• For consultations on evenings or weekends, call the Poison Control Center at 212-POISONS (764-7667).
• 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.