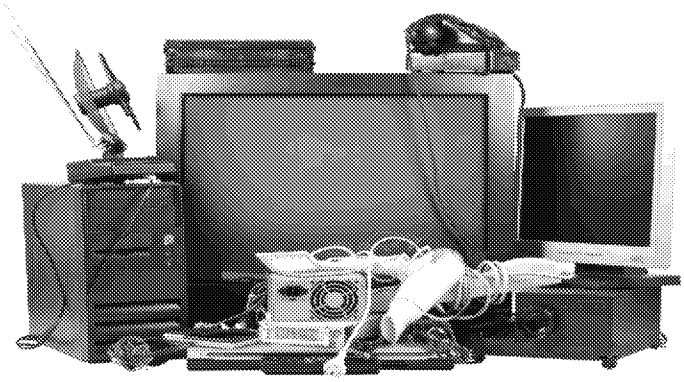
Georgia Department of Public Health

Occupational Health Surveillance



Source: https://patch.com/new-jersey/gloucestertownship/electronics-recycling-under-new-guidelines-camden-county-weekend

Recognizing Lead Hazards: For Workers in Electronic Waste Recycling

Electronic Waste and Lead

Source: http://www.takepart.com/article/2016/10/04/e-waste-recycling-not-really-recycled/

What is Electronic Waste?

Electronic waste also known as "E-waste" or "E-scrap" is a term used to describe the electronics that are outdated and on the verge of being discarded. Common E-waste products include batteries, cell phones, computers, monitors, televisions, and printers. In 2009, the Environmental Protection Agency (EPA) estimated that US consumers and businesses discarded approximately 2.37 million tons of televisions, computers, cell phones, and copying devices including printers, scanners, and faxes[1].

How Does Electronic Recycling Work?

Electronic components such as screens, batteries and circuit boards are made from valuable materials including metals, glass and plastics. Electronic recycling centers disassemble these components, separate them, shred them, and then sell the recycled metal, plastic, and glass to industry for repurposing.

***Fun Fact**: Of the 2.37 million tons of electronics discarded in 2009, EPA estimates that only 25 percent of these electronics were collected for recycling, with the remainder disposed of in landfills.*

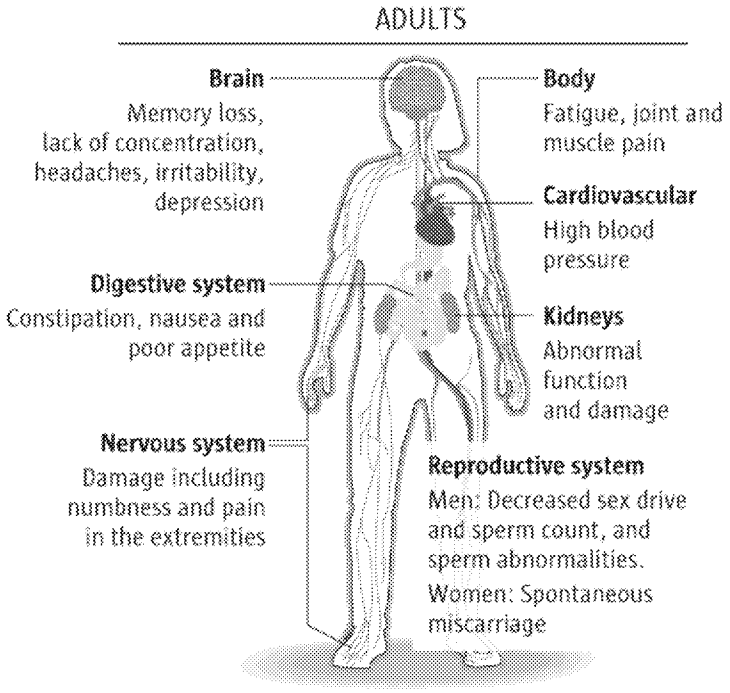
[1] https://www.epa.gov/international-cooperation/cleaning-electronic-waste-e-waste

How is Electronic Recycling Associated with Lead Exposure?

During the disassembly and shredding processes, workers may come into contact with E-waste components that are known sources of lead. Consequently, workers may breathe toxic lead dust into their lungs or swallow lead dust that settled on their hands or surfaces that were not adequately cleaned/washed. Additionally, workers may transfer lead particles from their hair, skin, and work attire to their personal vehicles and their homes. [2]

What are the Effects of Lead Exposure?

Once lead is absorbed into the body, it becomes concentrated in the blood, mineralizing tissues such as bones and teeth, and in soft tissue organs such as the liver, kidneys, brain and heart.[3] Lead exposure and toxicity is associated with a variety of adverse health conditions, including memory loss, decreased cognitive function, chronic kidney disease, decreased fertility and lower bone density.[4]



Graphic by Mark Nowlin, The Seattle Times

[2] https://www.cdc.gov/niosh/topics/lead/exposure.html
[3] https://www.atsdr.cdc.gov/csem/csem.asp?csem=34&po=9
[4] https://www.atsdr.cdc.gov/csem/csem.asp?csem=34&po=10

How do I Know Which E-waste Materials are Known Lead Hazards?

While almost all electronic devices contain lead, older televisions and computer monitors normally have the highest lead composition due to the cathode ray tubes (CRT) used to display images. Additionally, batteries and wires are also frequent sources of lead.

Source: https://chicagotonight.wttw.com/2017/05/11/bill-aims-overhaul-illinois-electronic-recycling-program

How Do I Reduce My Occupational Exposure to Lead?

You can reduce your exposure to lead by wearing personal protective equipment (PPE), including eye protection, gloves and respirators while conducting work duties. Work areas should be properly ventilated with high-efficiency particulate air (HEPA) filters. Additionally, workers should exercise caution when dry sweeping floors, cleaning equipment, emptying trash, and maintaining ventilation devices.

To prevent lead take-home exposures, employees should:

- Take a decontamination shower at the end of each shift.
- Keep street clothes separated from work clothes and avoid wearing or taking work clothes or shoes home.
- Wash your hands, wrist, forearms, and face before eating on the job.
- Inform your primary care doctor that you work with lead and other metals to monitor your blood lead levels* and those of your family.

**According to the Occupational Safety and Health Administration (OSHA), the permissible blood lead level (BLL) for workers in general industry is below 60µg/dL and below 50µg/dL for workers in the construction industry. However, the Centers for Disease Control and Prevention (CDC) states that a BLL as low as 5µg/dL can lead to lead poisoning.*

What are My Rights as a Worker?

Under OSHA law, workers have a right to:

- Working conditions that do not pose a risk of serious harm
- Receive information and trainings about workplace hazards, methods to prevent them, and OSHA standards that apply to their workplace
- See copies of the workplace injury and illness log
- Be protected from toxic chemicals and provided with required safety gear

To learn more about your rights as a worker visit: osha.gov/workers/index.html.

Employer Resources

On-site Consultation:

The Georgia Tech Consultation Program provides a free, confidential, on-site consultation service for small companies (fewer than 250 employees and not more than 500 employees corporate wide) that need assistance in occupational safety and health. Employers can request a consultation to help their company:

- Comply with OSHA's rules and regulations
- Identify physical hazards (such as lead exposures)
- Evaluate technical programs (such as hazard communication)
- Correct hazards and improve safety and health management systems

To receive consultation service, call 404-894-4121 or complete a request form at: oshainfo.gatech.edu/about

Georgia Tech | Safety, Health, and Environmental Services
A unit of the Enterprise Innovation Institute

Occupational Health Surveillance

The Georgia DPH Occupational Health Surveillance Program collects data on work-related injuries, illnesses, and hazards among Georgia workers to identify leading occupational health and safety problems in the state. The program also conducts follow-back and intervention activities for adults with elevated blood lead levels and provides data and educational materials on adult lead exposure. For more information visit:

dph.georgia.gov/georgia-occupational-health-and-safety-surveillance-program

Other Resources

Georgia Healthy Homes and Lead Poisoning Prevention Program
dph.georgia.gov/healthy-homes-and-lead-poisoning-prevention

United States Environmental Protection Agency (EPA)
epa.gov/lead

The National Institute for Occupational Safety and Health (NIOSH)
cdc.gov/niosh

Occupational Safety & Health Administration (OSHA)
osha.gov
1-800-321-OSHA (6742), TTY 1-877-889-5627

Georgia Department of Public Health

Occupational Health Surveillance Program

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