World Health Organization

Exposure to lead

AIDE-MEMOIRE

For enhanced country action to eliminate lead exposure

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Lead is a toxic metal whose extensive use has led to environmental contamination, human exposure and significant public health problems globally. Lead is among the top 10 chemicals of public health concern, according to the WHO. Activities leading to contamination include mining, smelting, manufacturing, recycling, and electronic waste. Lead has furthermore been used in a range of products, such as lead-acid batteries, solder, paints, ceramics, toys, electronic and mechanic equipment, cookware, spices, traditional medicines, cosmetics and ammunition.

Exposure can occur through inhalation or ingestion. No level of lead exposure is considered safe. It can affect multiple body systems and damage the brain, liver, kidneys, bones, blood and reproductive system. While it is particularly harmful to young children (especially affecting their brain and central nervous system) and women of child-bearing age, it can accumulate over time and cause a high death toll from cardiovascular diseases in adults. 1.5 million deaths globally were caused by lead in 2021, primarily due to cardiovascular effects.

Yet the harmful health effects from lead are entirely preventable. Past reductions in lead use in petrol, paint, plumbing, and solder have significantly lowered average blood lead levels. But major sources of exposure still exist, especially in low- and middle-income countries, and further efforts are required.

WHO support to countries

- Provides a summary of national data on legally binding regulation on the production, import, sale and use of lead paints.
- Provides evidence-based guidance on the clinical management of lead exposure.
- Works with countries to mobilize response to outbreaks of mass lead exposure and provide technical assistance.
- Provides a compendium of available interventions to prevent exposure to and mitigate the risks of lead.
- Promotes the phase-out of paints containing lead through the Global Alliance to Eliminate Lead Paint.
- Provides training and advocacy materials (e.g., International Lead Poisoning Prevention Week) to raise awareness about lead poisoning, including training for health care workers, and ways to minimize exposure.

✓ Checklist

Measurements & regulations

☐ Laboratories with the capacity to monitor blood lead levels available and monitoring programmes in place

☐ Legally binding controls on lead paint established

☐ Environmental and air-quality regulations enforced

☐ Strict standards and surveillance programmes for lead levels in drinking-water quality established

☐ Lead in food monitored and data publicly available

☐ Lead-contaminated sites and exposure routes identified

Policies & actions

☐ Lead paint eliminated

☐ Safe recycling of lead-containing waste, especially lead-acid batteries, promoted

Awareness raising & capacity building

☐ Information about sources and health risks of lead exposure and protective measures distributed to the public

☐ Information about safe disposal of lead-acid batteries and other electronic devices provided to the public

☐ Health sector informed and trained on the diagnosis and management of lead poisoning

Key elements for country action

Governance

- Engage the health sector to cooperate across sectors, such as water and sanitation, industry, waste, environment and food to minimize the use and exposure to lead.
- Ensure health gains from removal or improved management of lead are considered in all relevant policies outside the heath sector.
- Increase awareness about the health benefits of minimizing exposure to lead among decision makers and the public.
- Implement WHO Guidelines for the clinical management of exposure to lead

Measurements and regulations

- Ensure the availability of laboratories with the capacity to monitor blood lead levels.
- Establish legally binding controls on lead paint.
- Enforce environmental and air-quality regulations, including for mining, smelting, manufacturing and recycling activities.
- Include strict standards for lead levels (<0.01 mg/L) in national drinking-water quality and implement a surveillance program for monitoring it.
- Collect data about lead in foodstuffs and other consumer products and make this information publicly available to drive action.
- Identify lead-contaminated sites and exposure routes and prevent human exposure to lead from these areas.

Policies and actions

- Phase-out non-essential uses of lead such as in paint.
- Eliminate leaded solder in food and drink cans, water pipes, and remove lead from homes, schools, toys, pottery for cooking or eating, spices, traditional medicine, and cosmetics.
- Ensure the safe recycling of lead-containing waste, such as lead-acid batteries.
- Establish occupational exposure controls to protect workers exposed to lead.

Awareness raising and capacity building

- Educate the public about the sources of exposure, dangers of lead-containing products, the risks of lead exposure, and how to protect themselves and their families.
- Educate the public about the importance of safe disposal of lead-acid batteries and other electronic devices.
- Build capacity of healthcare workers and the health sector to prevent, diagnose and manage lead poisoning and especially protect child and maternal health from lead exposure.
- Enhance the capacity of poison centres to detect and manage lead poisoning cases.

Additional information:

https://www.who.int/teams/environment-climate-change-and-health/chemical-safety-and-health/

Main resources:

- https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health
- https://www.who.int/teams/environment-climate-change-and-health/chemical-safety-and-health/health-impacts/chemicals/lead
- https://www.who.int/health-topics/lead-poisoning#tab=tab_1
- https://www.who.int/data/gho/data/themes/topics/indicator-groups/legally-binding-controls-on-lead-paint

Please note: This aide mémoire provides summary information on lead poisoning. More details on other environmental health topics are provided in various other related materials.