

CHILDHOOD LEAD EXPOSURE: KEY MESSAGES

AUDIENCE: ALL



Healthy Environments
for Healthy Children

TOPLINE



Lead poisoning is the global health crisis no one is talking about. Its effects are devastating and permanent. Dangerous exposure to lead is impacting society's most vulnerable on a

massive and previously unrecognized scale, affecting one in three children worldwide. Lead poisoning causes irreversible damage to a child's development that robs them of their potential. It is essential to end the danger of lead exposure and prevent a generation of children suffering its lifelong effects.

- Nearly a third of the world's children – up to 800 million¹ – are affected by lead poisoning.
- Lead poisoning deprives children of a bright future, inflicting permanent and devastating damage to their developing bodies and brains.
- The negative effects of lead poisoning are far greater for children than for adults, and the damage is irreversible².
- Childhood lead poisoning can lead to lower IQ, attention deficits, poor academic performance and is linked to violent behaviour later in life.
- Prevention is the only effective way to stop the damage caused by lead poisoning. We must act now.

IMPACTS OF LEAD POISONING

Some of the most vulnerable members of society – children and pregnant women – are those most at risk. Even small amounts of lead exposure endanger the health of children and have the potential to severely affect brain development. The damage is difficult to spot and impossible to reverse, with effects including lower IQ, attention deficits, poor academic performance and is linked to violent behaviour later in life.

Children are most at risk of lead poisoning.

- Lead is a highly poisonous element and affects almost every organ in a child's body.
- There is no safe level of lead exposure for children – even the lowest levels of lead in the blood can cause lasting damage.
- Infants, young children (especially those younger than 5 years of age), adolescents and pregnant women are most susceptible to the adverse effects of lead.
- Young children absorb 4–5 times³ as much lead from the gut than adults⁴ (apart from pregnant women).
- Older children and adults also suffer severe consequences from prolonged exposure to lead in food, water and the air they breathe, including increased risk of cardiovascular death and kidney damage in later life.

¹ Unicef. (2020). The Toxic Truth: Children's Exposure to Lead Pollution Undermines a Generation of Future Potential. <https://www.unicef.org/reports/toxic-truth-childrens-exposure-to-lead-pollution-2020>

² World Health Organization. (2020). Global elimination of lead paint: why and how countries should take action: technical brief. World Health Organization. <https://apps.who.int/iris/handle/10665/333840>. License: CC BY-NC-SA 3.0 IGO

³ Ziegler EE, Edwards BB, Jensen RL, Mahaffey KR, Fomon SJ (1978). Absorption and retention of lead by infants. *Pediatric Res.* 12(1):29–34. doi:10.1203/00006450-197801000-00008.

⁴ Alexander FW (1974). The uptake of lead by children in differing environments. *Environ Health Perspect.* 7:155–9. doi:10.1289/ehp.747155.

Women have a special vulnerability to lead.

- Lead is stored in bone from past exposure but is released back into the blood during pregnancy, affecting target organs and exposing the foetus⁵.
- Maternal exposure to lead, even at low levels, can result in reduced foetal growth, lower birth weight, premature birth and spontaneous abortion⁶.

There is no cure for lead poisoning – the damage it causes cannot be reversed.

- Even at the lowest measurable levels, lead in the blood can compromise the reproductive, neurological and cardiovascular systems.
- Lead poisoning is associated with lower IQ, reduced attention and academic achievement, and potentially violent and even criminal behaviour later in life.
- Exposure of pregnant women to high levels of lead can cause miscarriage, stillbirth, premature birth and low birth weight.

The symptoms of lead exposure can be difficult to spot.

- Childhood lead poisoning is typically insidious, with no symptoms at all.
 - It is often the poorest children who are the most severely affected.
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SOURCES OF LEAD POISONING

The dangers of leaded gasoline are relatively well known, but other sources of lead are polluting the environment in communities across the world and are not receiving enough attention. Without proper regulation and management, substandard recycling of lead products (such as lead-acid batteries), use of lead in paint, electronic and electrical waste and even common consumer goods can all contribute to lead poisoning. In communities across the world, particularly in low- and middle-income countries, lead can be found throughout the environment in which children live and play.

The widespread occurrence of lead in the environment is largely the result of human activity.

Sources of lead include:

- Mining, smelting, refining and recycling of lead;
- Use of lead in manufacturing, such as for lead-acid batteries;
- Use of lead in consumer products, such as paints, glazes, leaded glass, jewellery, ceramics, cosmetic, dyes, traditional medicines, ammunition and fishing weights;
- In various kinds of informal and cottage (home-based) industries;
- Use of lead in water pipes and solder;
- As part of electronic waste; and
- Use of leaded petrol and aviation fuel.

Lead can be found throughout the environment in which children live – in the air they breathe, the water they drink, the soil they walk and crawl on, the food they eat, and even in some of the toys they play with.

Lead exposure can occur through:

- Inhalation of particles released by industry or recycling;
- Ingestion of contaminated soil or dust– particularly when children play on the ground and put toys and fingers in their mouths (for example, flaking paint, legacy battery recycling site).
- Lead-containing products such as lead-glazed ceramics and some traditional medicines or cosmetics; and
- Food or water contaminated with lead.

⁵ World Health Organization. (2020). Global elimination of lead paint: why and how countries should take action: technical brief. World Health Organization. <https://apps.who.int/iris/handle/10665/333840>. License: CC BY-NC-SA 3.0 IGO

⁶ NTP (2012). Health effects of low-level lead (National Toxicology Program Monograph). Bethesda (MD): National Institutes of Health



AUDIENCE: GOVERNMENTS

THE NEED FOR ACTION

Without effective support from government, the issue of lead exposure will continue to rob children of a healthy future. The long-term negative effects on society are enormous – health and education systems are strained, vast economic potential is lost through widespread cognitive decline, productivity is lost, and the risk of violent behaviour increases. Governments must respond with strong policy and legislation to rid the world of this insidious danger.

Governments have a responsibility to protect children from the hidden dangers of lead exposure.

Lead poisoning is not only a public health issue, but an environmental and economic one.

- Strong legislation and policy can ensure the appropriate industrial hygiene and occupational measures are in place to aid the elimination of lead in consumer products.
- Widespread cognitive decline across large numbers in a city or country results in lost creative and economic productivity across entire societies.
- Childhood lead exposure is estimated to cost low-and middle-income countries almost 1 trillion international dollars⁷ due to lost economic potential of these children over their lifetime.
- Economic costs include health care costs in treating lead poisoning, making homes and contaminated sites safe, social costs such as the need for special education to combat lead-induced intellectual impairment, and productivity losses because of reduced intelligence quotient (IQ).
- Juvenile delinquency, violence and crime have been associated with childhood lead exposure.
- Environmental impacts of lead include negative effects on both aquatic and terrestrial ecosystems and threats to biodiversity.

⁷ <https://med.nyu.edu/departments-institutes/pediatrics/divisions/environmental-pediatrics/research/policy-initiatives/economic-costs-childhood-lead-exposure-low-middle-income-countries>

WHAT CAN BE DONE

Government action has the power to put an end to lead poisoning, as well as support those who have already suffered the effects of exposure. Through strong legislation and policy, it is possible to end the use of lead-added products and unsafe industry practices. Through awareness campaigns, it is possible to educate the public to identify the dangers, advocate for government action and prevent exposure. And through investment in health care and education, it is possible to provide improved care and management of children who suffer developmental delays caused by lead poisoning. To deal with lead poisoning, prevention is key, and urgent government action is required.

Proven solutions exist and they can be implemented now.

- Lead is recyclable. It can be reused safely through practices consistent with the circular economy and closed-loop supply chain principles.
- Lead-contaminated sites can be remediated and restored.
- People need to be educated about the dangers of lead and empowered to protect themselves and their children.

Governments have a critical role to play in both eliminating lead poisoning and improving the livelihoods of those who suffer its effects.

Policy makers should:

- Develop or review national plan(s) of action to address lead exposure based on identified sources of exposure involving relevant stakeholders, including industry;
- Launch national awareness campaigns to address lead exposure through local media, social media, health networks, schools, community networks and through adolescents and children;
- Invest more in training healthcare professionals to strengthen the diagnosis and management of childhood lead exposure;
- Provide access to high-quality education and developmental interventions for children who suffer developmental delays caused by lead poisoning;
- Draft legislation, regulation, or mandatory technical standards targeting sources of lead to prevent future exposure;
- Take all necessary measures to ensure full compliance with legally binding control measures⁸; and
- Serve as a government “champion” to encourage other governments to take action, especially through regional efforts and activities⁹.

Effective legislation and policy are required to end the dangers of lead poisoning.

Through legislation and policy, national governments can:

- Develop policy and economic measures to ensure environmentally sound management of waste lead-acid batteries by discouraging informal recycling, and depending on local context, creating a role for the informal sector in a national lead recycling strategy;
- Impose environmental, health and safety standards for manufacturing and recycling of lead-acid batteries, e-waste and other substances that contain lead;
- Enforce environmental and air-quality regulations for smelting operations;
- Eliminate the use of lead compounds in paint and gasoline in countries where this has not yet been done;
- Eliminate the use of lead in ceramics and pottery, children’s toys, cosmetics,spices and medicines;
- Eliminate child labour in e-waste picking and metals mining;
- Remediate toxic sites and reduce access to toxic hotspots, especially for children and pregnant women; and
- Manage drinking water safety so that quality standards have strict parameters on lead.

⁸ World Health Organization & United Nations Environment Programme. (2020). Report on activities during the seventh international lead poisoning prevention week, 20-26 October 2019. World Health Organization. <https://apps.who.int/iris/handle/10665/332274>. License: CC BY-NC-SA 3.0 IGO

⁹ World Health Organization & United Nations Environment Programme. (2020). Guidance on organizing an advocacy or awareness-raising campaign on lead paint. World Health Organization. <https://apps.who.int/iris/handle/10665/334339>. License: CC BY-NC-SA 3.0 IGO



AUDIENCE: COMMUNITIES

PREVENTION

The most important step you can take to protect your children is to prevent exposure to lead before it occurs. In order to do this, it's important to learn more about the risks, and take proactive steps to eliminate them from the home or any other environment where children may be exposed. And most importantly, you can become a voice for lasting change – by spreading awareness to your neighbours, and lobbying those in power to take action.

Preventing lead exposure before it occurs is the most important step communities can take.

- Prevent children and pregnant women from being exposed to used lead-acid batteries, battery recycling sites or electronic waste sites. These sites should never be in places where children live, play and learn.
- Check for lead-containing products in your community (for example, paints, cosmetics, spices, ceramics, toys, plumbing and traditional medicines that use lead). National environmental agencies in several countries publish information on such products.
- Parents should prevent bringing lead from work (for example, on shoes) or exposing children to work items at home that may have been exposed to lead.
- Assess if there are any lead-based risks in your home (for example, peeling paints, toys or ceramics that might use lead-based paint), and keep children away from them.
- Practice good sanitation and hygiene practices to reduce exposure not only to lead but also other toxicants and pathogens (for example, pesticides, mosquitoes).

Spread this message in your community and protect children from exposure to lead.

- Advocate for your politicians to put in place laws, policies and enforcement mechanisms to ensure that children are not exposed to lead.
- Engage with your local administration to advocate for implementation.

EARLY INTERVENTION

The cognitive effects of exposure to lead cannot be reversed, but they can be managed with effective early intervention. You may not notice any symptoms since lead poisoning is typically insidious, so it's critical that you seek immediate medical attention if you suspect your child has been exposed to lead to be tested, and access learning, nutritional, and behavioural programs if necessary.

Early intervention and reducing further exposure are key to reducing long-term effects.

- Seek urgent medical care if you suspect your child has been exposed to lead.
- A blood test is the only way to find out if your child has been exposed to lead. Most children with lead in their blood have no symptoms.
- Diets high in iron, calcium and vitamin C can help decrease the absorption of lead if a child is exposed.
- While there is no cure, parents can help reduce the effects of lead by talking to their doctor and getting connected to learning, nutritional, and behavioural programs as soon as possible.

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AUDIENCE: PRIVATE SECTOR

WHAT CAN BE DONE

Through education, collaboration and engagement, the private sector can harness its power to reduce lead exposure. This means working together within the sector and with governments to ensure that lead is used appropriately: only in a manner consistent with proven safe practices and only obtained from responsible sources. The private sector can also work with organizations and invest in the clean up of contaminated sites, as well as responsibly dispose of lead waste for the prevention of future pollution.

Reducing lead exposure is a shared responsibility, which includes the private sector, with long-term health, environmental and economic benefits.

- Comply with all business regulations for safe production and disposal of lead in products.
- Ensure worker's health and safety and safeguard from child labour throughout supply chain.
- Innovate to create products that are recyclable and can be environmentally safe to dispose of.
- Collaborate among the private sector, governments, the public and other sectors to protect children's health. Examples of collaboration include sharing data and creating buyback schemes to encourage recycling.