QUESTIONS AND ANSWERS:
INTERNATIONAL LEAD POISONING PREVENTION AWARENESS CAMPAIGN
WEEK OF ACTION 25-31 OCTOBER 2015

1. What is lead?

Lead is a naturally occurring toxic metal found in the Earth’s crust. It has many uses, including in the manufacture of lead-acid batteries for motor vehicles, in pigments and paints, solder, ammunition, ceramic glazes, jewellery, toys and also in some cosmetics and traditional medicines. It also continues to be used in gasoline in a small number of countries. The processing, use and disposal of lead can result in environmental contamination and human exposure. As lead is an element, once released into the environment it is persistent.

2. What is lead poisoning?

Lead poisoning refers to excessive human exposure to lead. The most common route of exposure is ingestion. Exposure may occur over a short space of time (acute poisoning) or over a prolonged period (chronic poisoning). No safe level of exposure to lead has so far been identified. As a consequence some health authorities define excessive exposure as having a blood lead concentration above the reference value for the population as a whole. This reference value is usually the geometric mean blood lead concentration found in the highest 2.5% or 5% of the population, i.e. the 97.5th or 95th percentile respectively. For example, in the USA the 97.5th percentile blood lead concentration in children under six years is 5 µg/dL (1). This same concentration is the 98th percentile value for children under seven years in France (2).

3. What are the health effects of lead exposure?

Lead accumulates in the body and affects practically all organ systems. Lead exposure can cause chronic and debilitating health impacts in all age groups, but it is particularly harmful to young children. This is because the developing nervous system is vulnerable to the toxic effects of lead, even at levels of exposure that do not cause obvious symptoms and signs. Lead exposure in early childhood can result in reduced cognitive abilities, dyslexia, attention deficit disorder and antisocial behaviour. WHO estimates that lead exposure causes some 600 000 new cases of intellectual disability among children every year. Lead exposure can also cause hypertension, renal impairment, immunotoxicity and toxicity to the reproductive organs.

Absorption of large amounts of lead can cause coma, convulsions and even death. Children who survive severe lead poisoning can be left with permanent neurological injury such as deafness and mental retardation.
WHO estimates that lead is responsible for 143,000 deaths per year and 0.6% of the global burden of disease. Overall, 99% of children affected by high exposure to lead live in low- and middle-income countries.

4. What are the sources of human exposure to lead?

Lead has many uses; therefore, there are many potential sources of exposure. Important sources are environmental contamination from the informal recycling of lead-acid batteries and from poorly controlled lead mining and smelting operations; the use of lead-containing traditional remedies; lead ceramic glazes used in food containers; and lead paint. Leaded gasoline used to be an important source of exposure but it is no longer used in most countries.

5. What is lead paint?

In the context of action to eliminate lead paint, the term ‘paint’ includes varnishes, lacquers, stains, enamels, glazes, primers and other coatings. Paint is typically a formulated mixture of resins, pigments, fillers, solvents and other additives. Lead paint is paint to which one or more lead compounds have been added to confer specific properties such as colour, corrosion-resistance or to speed up drying. Lead compounds are added to some enamel (gloss), organic solvent based paints. Lead is rarely added to water-based emulsion paints. The lead content of paint can range from less than 90 ppm (90 mg/kg) to over 100,000 ppm (100,000 mg/kg). In paints with no added lead there may be a small amount present as a contaminant of the raw materials used in manufacture, but the lead content is usually less than 90 ppm.

6. Why is lead paint an important source of human exposure?

Lead paint is still used in the majority of countries and, since the phase-out of leaded petrol, this paint is one of the largest sources of exposure to lead for children. Intact lead paint is safe; however, as it ages the paint starts to decay, fragmenting into flakes and dust that contaminate the home environment. Paint flakes and dust are readily swallowed by young children who typically play on the ground and frequently put their hands to their mouths. Some children compulsively pick flakes of paint off surfaces and eat them. The removal of lead paint, for example during home renovation or maintenance of painted structures such as bridges, can also result in the release of lead-contaminated dust if it is not done in a safe manner.

Lead paint can remain a source of exposure for many years into the future. Even in countries that banned lead paint decades ago there are still many homes where lead painted surfaces can be found. The sooner that lead paint is banned in a country the sooner this toxic legacy can be eliminated.

7. What are the economic costs of lead paint?

There are both direct and indirect economic costs resulting from the use of lead paint. These include health care costs in treating lead poisoning, social costs such as the need for special education to combat lead-induced intellectual impairment, and productivity losses because of reduced intelligence quotient (IQ). The largest economic burden of lead exposure is borne by low- and middle-income countries (3). In the USA it has been estimated that each dollar invested in lead paint hazard control yields a return of US$ 17–221 (4).
The economic cost of eliminating the use of lead in many paints is known to be low and a number of manufacturers have already successfully reformulated products to avoid the intentional addition of lead.

8. What is the Global Alliance to Eliminate Lead Paint and what are its aims?

The Global Alliance to Eliminate Lead Paint (the Lead Paint Alliance) is a voluntary collaborative initiative that aims to focus and catalyse the efforts of diverse stakeholders to achieve international goals to prevent children’s exposure, and to minimize occupational exposure, to lead from paint. Stakeholders may include governments, intergovernmental organizations and non-governmental organizations including civil society, regional bodies, philanthropic organizations, academia, media and the private sector. Interested individuals may also participate as stakeholders. The broad objective of the Lead Paint Alliance is to promote the phase-out of the manufacture and sale of paints containing lead and eventually to eliminate the risks that such paints pose.

The background to the formation of the Lead Paint Alliance is the call by governments at the World Summit on Sustainable Development in 2002 for lead paint to be phased out. Progress on this issue was discussed at the International Conference on Chemicals Management in 2009 (ICCM2). ICCM2 noted the success of the Partnership for Clean Fuels and Vehicles in phasing out the use of leaded gasoline and supported the establishment of a global partnership to promote the phase-out of lead paint.

The Lead Paint Alliance is jointly led by the World Health Organization (WHO) and the United Nations Environment Programme (UNEP) in accordance with their respective mandates. Click here for more information on the Global Alliance to Eliminate Lead Paint.

9. What can Member States do to eliminate lead in paint?

There are safer alternatives to lead compounds for use as pigments and driers. These have been available for a number of years and studies have shown that using these alternatives does not significantly increase the cost of paint (5). There is, however, still a general lack of awareness on the issue of lead and an absence of mandatory standards for lead in paints in many countries.

In countries where lead paint is still available, governments should introduce legally-binding controls to either ban or restrict the use of lead paint. Examples of control measures include prohibiting the use of any lead compounds in paint or setting a maximum permissible limit for the lead content of paint at the lowest feasible level. Additional information on establishing legally binding control measures can be found on the UNEP website at www.unep.org/noleadinpaint.

Other measures include requiring the use of lead-free paint in public buildings such as schools and hospitals, and informing the general public about the hazards of lead to encourage the purchase of lead-free paint. This market pressure can encourage paint manufacturers to take voluntary action to stop adding lead compounds to their products.

The phase-out of leaded gasoline has shown how successful such policy measures can be. The mean population blood lead concentration in many countries has greatly
decreased as a result of the banning of leaded gasoline together with other lead control measures.

The third session of the International Conference on Chemicals Management (ICCM3, Nairobi, 17-21 September 2012) endorsed a set of targets for the number of countries that have adopted legally binding laws, regulations, standards and/or procedures to control the production, import, export, sale and use of lead paints. These targets give special attention to the elimination of lead decorative paints and lead paints for other applications most likely to contribute to childhood lead exposure. The targets are that by 2015 at least 70 countries will have put in place legally binding controls and that by 2020 all countries will have done so. As of 31 July 2015, 59 countries had informed the Lead Paint Alliance secretariat that such control measures were in place and a further 18 countries stated that these measures were in the process of development.

While these targets have focused on protecting the most vulnerable group, children, who are exposed to decorative paint, the goal is to control lead in all paints.

11. What is International Lead Poisoning Prevention Week?

The International Lead Poisoning Prevention week of action is an initiative of the Lead Paint Alliance. The purpose of the campaign week is to raise awareness of the need for action to address the human health effects of exposure to lead, especially in relation to children. A particular focus of the campaign week is to urge further action by governments, industry and consumers to eliminate lead paint.

Partners in this campaign include the International Pediatrics Association, the United Nations Environment Programme (UNEP), the United States (US) Centers for Disease Control and Prevention, the US Environmental Protection Agency, IPEN and the World Health Organization working together as part of the Global Alliance to Eliminate Lead Paint. Together, these partners produce multilingual campaign materials that are made available through the WHO website for others to use.

During the week a range of activities takes place around the world. These are organized by community groups, public health departments, academia, government departments and others. For information on the week of action and to find campaign materials click here.

12. How is WHO tackling lead in paint and its effects on health?

The World Health Organization (WHO) has identified lead as one of ten chemicals of major public health concern that require action by Member States in order to protect the health of workers, children and women of reproductive age.

In order to raise awareness about the hazards of lead and the need for preventive action, WHO has made available through its website a range of information on lead, including information for policy makers, technical guidance and advocacy materials. This information can be found at the following link.

To assist policy-makers, public health authorities and health professionals in implementing measures to protect the health of children and adults from lead exposure, WHO is developing evidence-based guidelines on the prevention and management of lead poisoning.
Since leaded paint is a continuing source of exposure in many countries, WHO has joined with the United Nations Environment Programme (UNEP) to form the Global Alliance to Eliminate Lead Paint.

References


