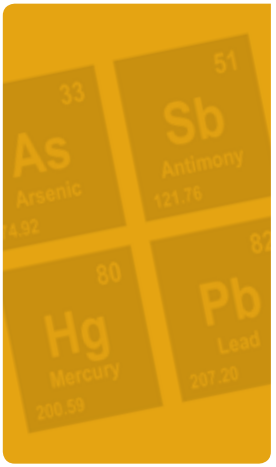
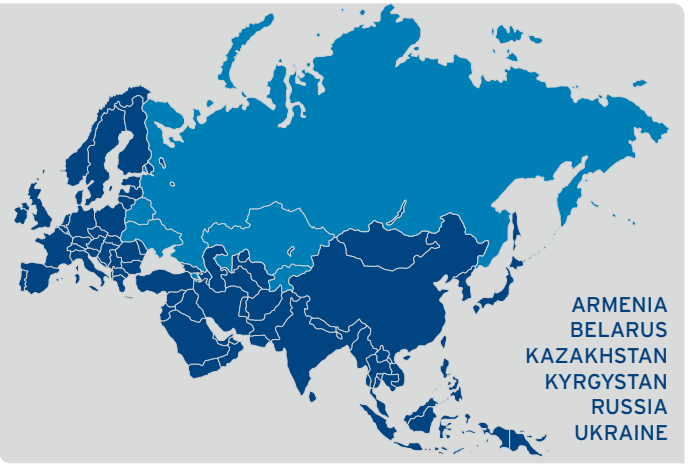
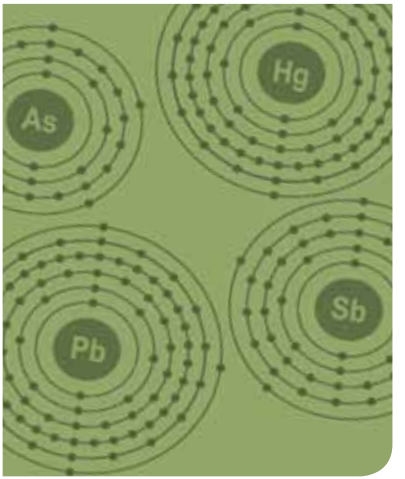




TOXIC METALS IN CHILDREN'S PRODUCTS:

AN INSIGHT INTO THE MARKET IN EASTERN EUROPE, CAUCASUS AND CENTRAL ASIA



Partnership between GRID-Arendal and IPEN

GRID ARENDAL
A Centre Collaborating with UNEP

IPEN
a toxics-free future

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In close collaboration with :
Eco-Accord, also IPEN's EECCA Regional Hub (Russia)
Armenian Women for Health and Healthy Environment (Armenia)
Centre for Environmental Solutions (Belarus)
Greenwomen (Kazakhstan)
Independent Environmental Expertise (Kyrgyzstan)
MAMA-86 (Ukraine)

IPEN is a leading global organisation working to establish and implement safe chemicals policies and practices that protect human health and the environment around the world. IPEN's mission is a future free of toxins for all. IPEN brings together leading public interest groups working on environmental and public health issues in developing countries and countries in transition. It helps build the capacity of its member organisations to implement on the ground activities, learn from each other's work, and set priorities and develop new policies at the international level. IPEN has also conducted testing for toxic metals in children's products with Greenpeace East Asia in China and the EcoWaste Coalition in the Philippines. More information is provided at: www.ipen.org

GRID-Arendal is a centre collaborating with the United Nations Environment Programme (UNEP). GRID-Arendal's mission is to provide environmental information, communications and capacity building services for informed management and assessment. The centre's core focus is to facilitate free access to and exchange of information to support decision-making and secure a sustainable future. More information is provided at: www.grida.no

INTRODUCTION

Toys and many other children's products can keep children happy for hours. The right toys can stir young imaginations, and often encourage the first vital steps in the learning process. However, children's products can also be a source of toxic chemicals, especially when their manufacture is not properly regulated and laws are not sufficiently enforced.

All children, both in the developing and developed world are affected by exposure to hazardous chemicals. The unique vulnerability of children to hazardous substances is well recognised by public health professionals and the World Health Organization. Children are not simply 'little adults'. Their bodies are still developing and their detoxification systems are immature. They react to hazardous chemicals differently from adults. They are also more at risk because they eat and drink more per bodyweight, and they live life closer to the ground, crawling, digging in dirt and putting objects in their mouths. These are natural behaviours and children should not be harmed by their toys.

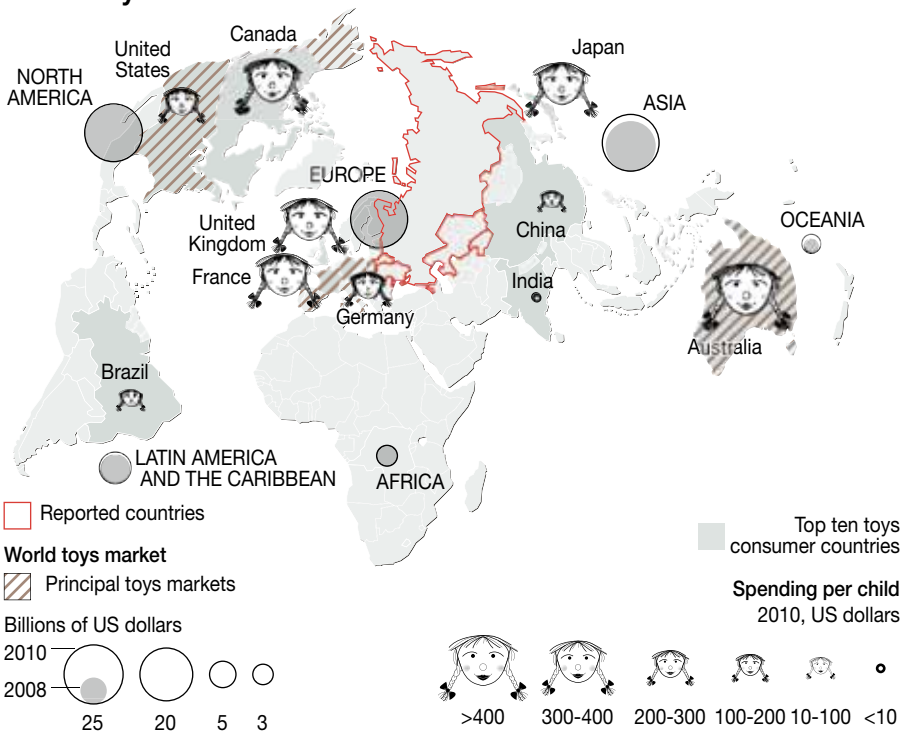
In the Eastern Europe, Caucasus and Central Asia (EECCA) region, data on chemicals and toy safety is lacking. The chemical content in children's products varies and may not be known due to the lack of labels or appropriate regulatory policies. Sometimes, toxic substances are present in toys, even though they are well-known poisons. Since the chronic harms from chemicals may be serious, precaution should guide manufacturing and regulatory decisions. The first step in protecting children is to obtain information about children's products available on the market.

Toxic Metals in Children's Products is a study which looked at 569 different children's products, mainly toys on the market in Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia and Ukraine in 2012. The results provide information so that consumers can begin to make some informed choices for their children. In addition, the results should provide an impetus for strengthening regulatory policies and their enforcement in relation to consumer products. Tests revealed that approximately 30 per cent of the toys sampled contained at least one toxic metal. These substances included well-known toxic elements such as lead, mercury, arsenic and antimony – all exceeding the limits established under Russian law and applied in the target countries.

Toys are a big business. Between 2007 and 2010 the global toys market grew by nearly 5 per cent in value terms – from US$78.1 billion to US$83.3 billion. The majority of the toys on the market – many millions of them – are manufactured in China, often under licenses from large Western and Japanese conglomerates. In this study, we also found toys made in Armenia, Belarus, Russia, Ukraine and the European Union (EU).

There is an urgent need for stricter controls on toy manufacturing. There must be tighter regulations on the content of toxic metals in children's products and stringent enforcement. If not, we are unwittingly placing the future of our children in jeopardy.

World Toys Market



Sources: Zimmy, J., *Toy Markets in the World Annual 2010*, The NPD Group, 2010.

Population and GDP in 2010

Sources: United Nations, Department of Economic and Social Affairs, Population Division. 2011. *World Population Prospects: The 2010 Revision.* [online] Avalaible at: <esa.un.org/wpp>.

THE CAMPAIGN FOR "TOXIC FREE TOYS" IS GROWING

The *Toxic Metals in Children's Products* study was carried out through a partnership between the International POP's Elimination Network (IPEN) and GRID-Arendal, a centre collaborating with the United Nations Environment Programme (UNEP). The project was implemented together with IPEN´s participating organisations in the EECCA region, including Eco-Accord (Russia), the Armenian Women for Health and Healthy Environment, MAMA-86 (Ukraine), the Centre for Environmental Solutions (Belarus), Independent Environmental Expertise (Kyrgyzstan) and Greenwomen (Kazakhstan).

The *Toxic Metals in Children's Products* study tested a variety of products, made of metal, plastic, wood, cloth and cardboard. It was found that many of these products contained chemicals and other substances at levels that could cause harm to both human health and to the environment. These toxins can enter products during treatment processes and heavy metals can be used in paint and as stabilizers in plastics.

Children's young bodies and organs tend to be more sensitive to toxic chemicals. Furthermore the natural behaviour of younger children, such as putting toys in the mouth, often increases exposure to toxins. At the other end of the product cycle, toxic substances in toys are released to the environment when they become waste, causing further environmental pollution.

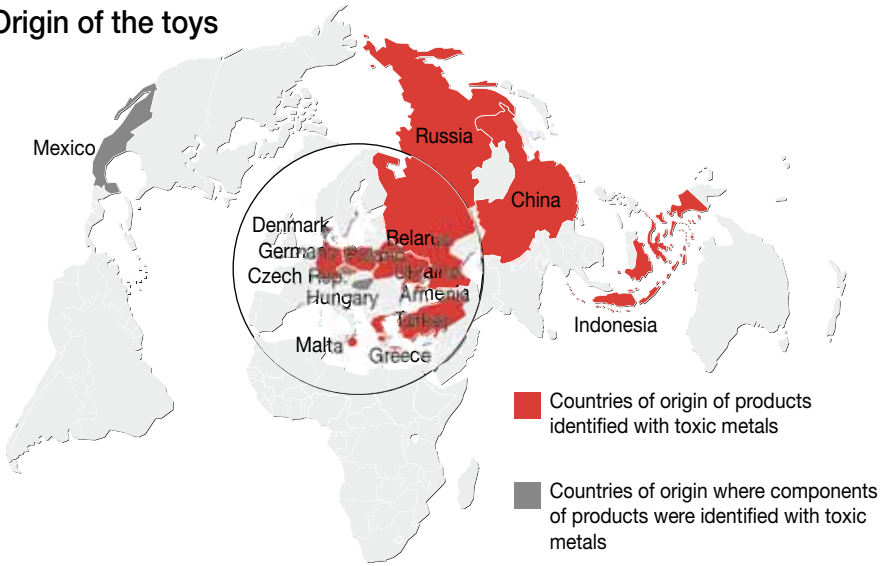
Items in the study were selected from different categories for different age groups. These included dolls, jewellery, children's cosmetics, construction kits, sports equipment, hair accessories and school supplies, such as pencil cases and books. Items were purchased at a variety of outlets – supermarkets, small retail shops, roadside stalls and other markets.

METHODOLOGY

There are two main methods of measuring the presence of toxic substances. One, termed the extractable elements method used in both the EU and the United States (US), assumes that exposure to toxic substances can only happen if a child swallows a portion of the product. However, children can be exposed to toxic metals from dust on the surface of products or by directly chewing and sucking on them. Furthermore, the procedure itself is cumbersome and not appropriate for small- to medium-sized enterprises in developing and transition countries, which need a rapid, clear approach to regulation that does not burden already strained infrastructures. The other more efficient method – used to measure lead in paint – is termed the total concentration method which simply expresses the milligrams of a substance per kilogram (mg/kg) of product (or product part). This approach is usually used in regulating toxic metals in soil or lead in consumer products and paint. It is clear and unambiguous.

The study measured toxic metals in children's products using a portable X-ray fluorescence analyzer (XRF). The XRF device is routinely used by companies and US regulatory agencies such as the US Environmental Protection Agency and the US Consumer Product Safety Commission for the detection of metals in consumer products and other media. Children´s products were tested for the presence of toxic metals – antimony, arsenic, lead, mercury, and sometimes cadmium and chromium. Since the XRF device provides data in parts per million (ppm) (or mg/kg), the results were compared with regulatory limits for soil established under Russian law that are also used in other countries in the EECCA region. Toys that children play with and even put in their mouth should be at least as protected as the soil they walk on.

Origin of the toys



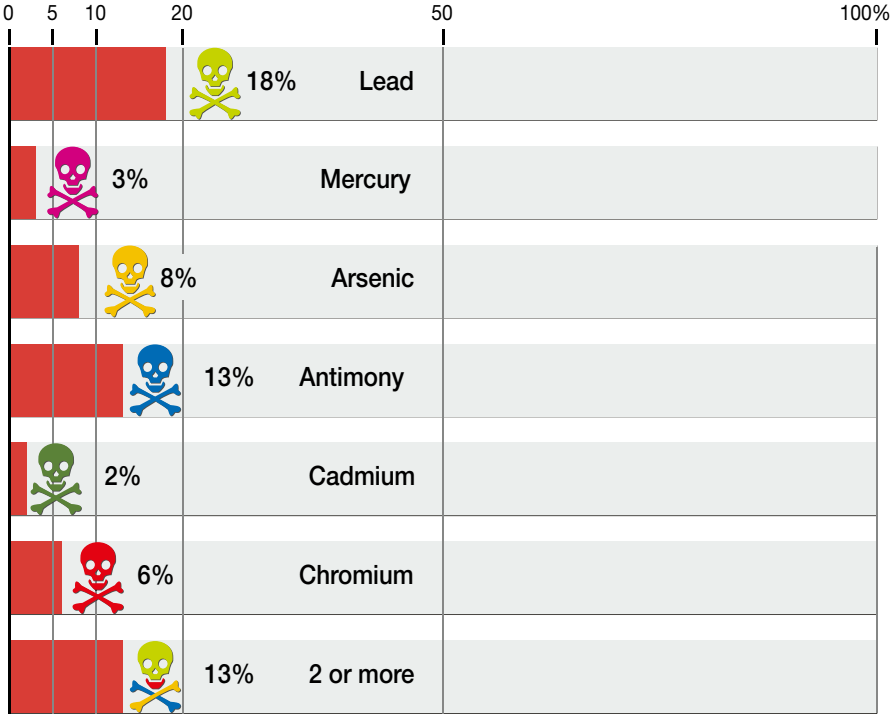
RESULTS

The study found that of the 569 products tested, 104 (18 per cent) exceeded the limit for lead, 18 (3 per cent) exceeded the limit for mercury, 45 (8 per cent) exceeded the limit for arsenic and 75 products (13 per cent) exceeded the limit for antimony. Seventy-five (13 per cent) of these products contained two or more toxic metals, thereby increasing the likelihood of harmful impacts.

Lead was the most common toxic metal found in children's toys. The Russian regulatory limit for lead in soil is 32 ppm, but lead levels in toys that children place in their mouth ranged from 32 ppm to 18,694 ppm – more than 580 times the limit. The top five toy products ranged from 7,822 ppm to 18,694 ppm. These were a plastic jump rope (Ukraine), a toy lock (Armenia), a skirt for a stuffed animal (Kyrgyzstan), a ceramic mug (Belarus) and a toy car (Russia).

Mercury levels in some products exceeded the regulatory limit by more than 170 times. A particularly disturbing finding was that the product containing the highest amount of mercury – 371 ppm – was a toy lipstick designed

Percentage of analysed toys that exceeded the Russian regulatory limit for toxic metal content in soil



Metal contamination in analysed toys

164 samples contained toxic metals above the regulatory limit

29%

71%

405 samples did not contain toxic metals above the regulatory limit

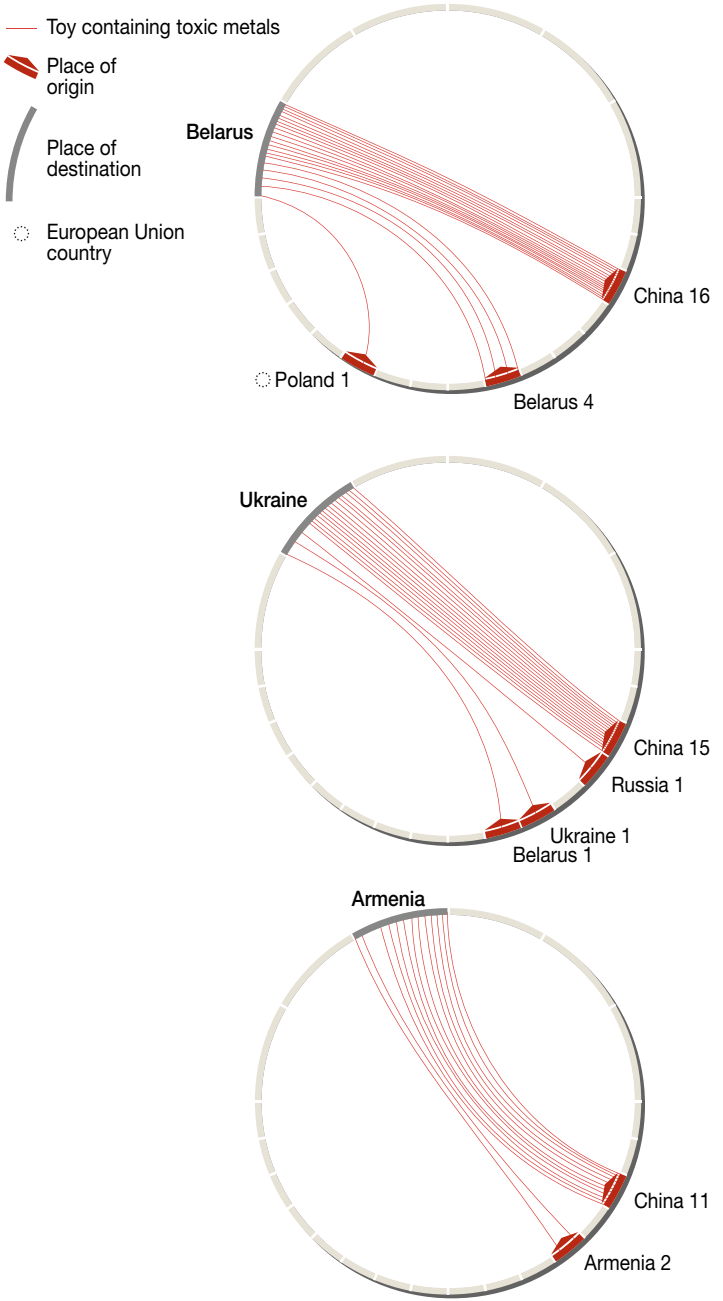
for girls to apply directly to the lips (Belarus). Other products containing high levels of mercury included a stuffed animal toy (Kazakhstan), a kitchen play set (Armenia), coloured plastic frogs (Russia) and toy cars (Russia).

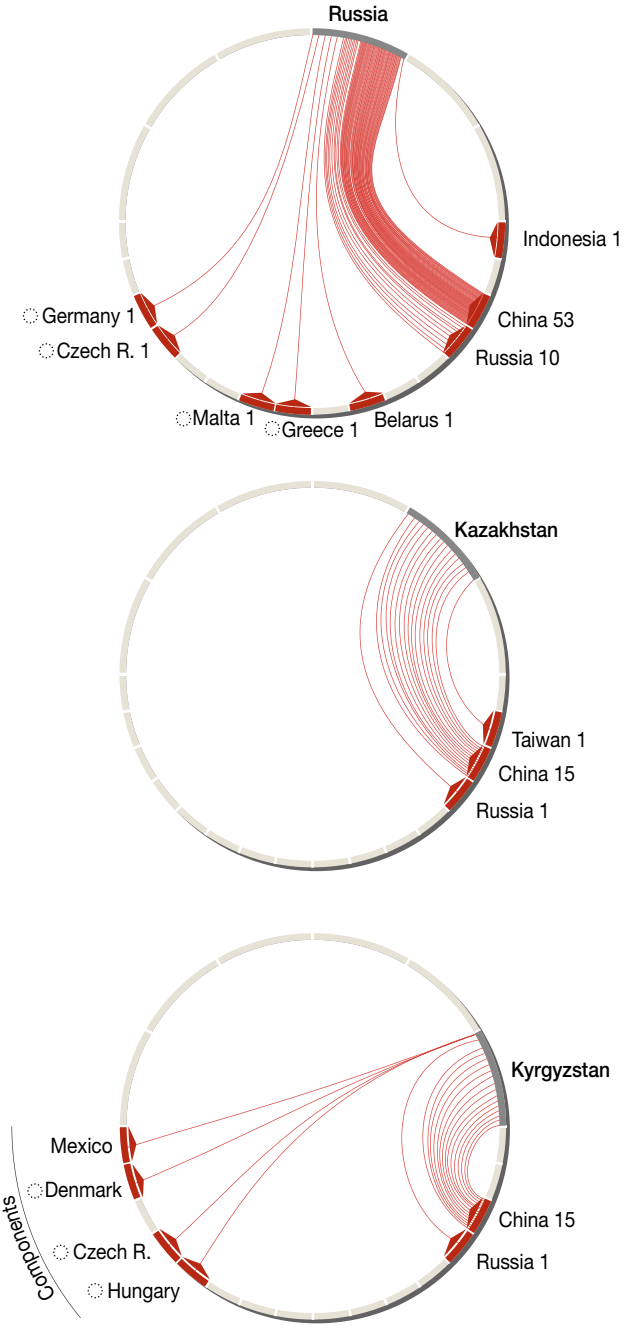
Arsenic levels in five products ranged from 13 ppm to 1532 ppm – the latter figure being more than 760 times the regulatory limit. These products included a child's ceramic mug (Belarus), a skirt for a stuffed animal toy (Kyrgyzstan), coloured plastic frogs (Russia) and nesting containers which could also be used for food (Russia).

Of the 164 products containing a toxic metal, six originated in the EU, contrary to labeling data. The presence of such substances raises questions over the integrity of EU standards and regulations for children's products. A large proportion of products containing toxic metals also contained the Russian conformity mark which supposedly confirms compliance with existing national safety requirements. This raises concerns among safety advocates in the EECCA region that the conformity mark does not ensure consumer safety.

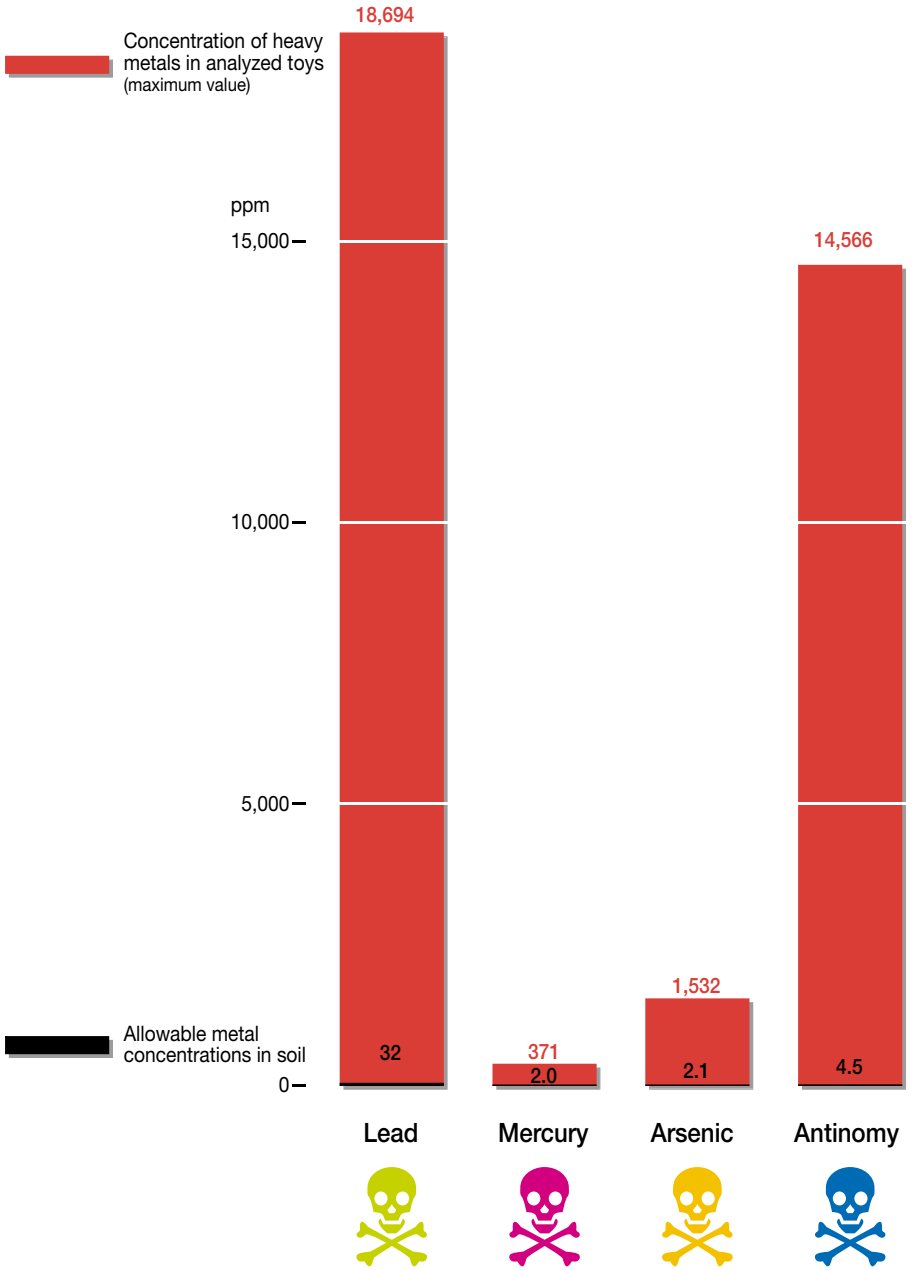
The good news emerging from the study is that 70 per cent of children's products tested did not contain toxic metals above levels of concern. Most of these products came from China but some were from Russia, Armenia and Belarus. This suggests that manufacturers are capable of producing toys with low or no toxic metals present. The study also demonstrates that it is technically and economically feasible to entirely eliminate toxic metals from children's products.

Movement of the toys




Russia
Indonesia 1
China 53
Russia 10
Belarus 1
Greece 1
Malta 1
Czech R. 1
Germany 1
Kazakhstan
Taiwan 1
China 15
Russia 1
Kyrgyzstan
China 15
Russia 1
Czech R.
Hungary
Denmark
Mexico
Components

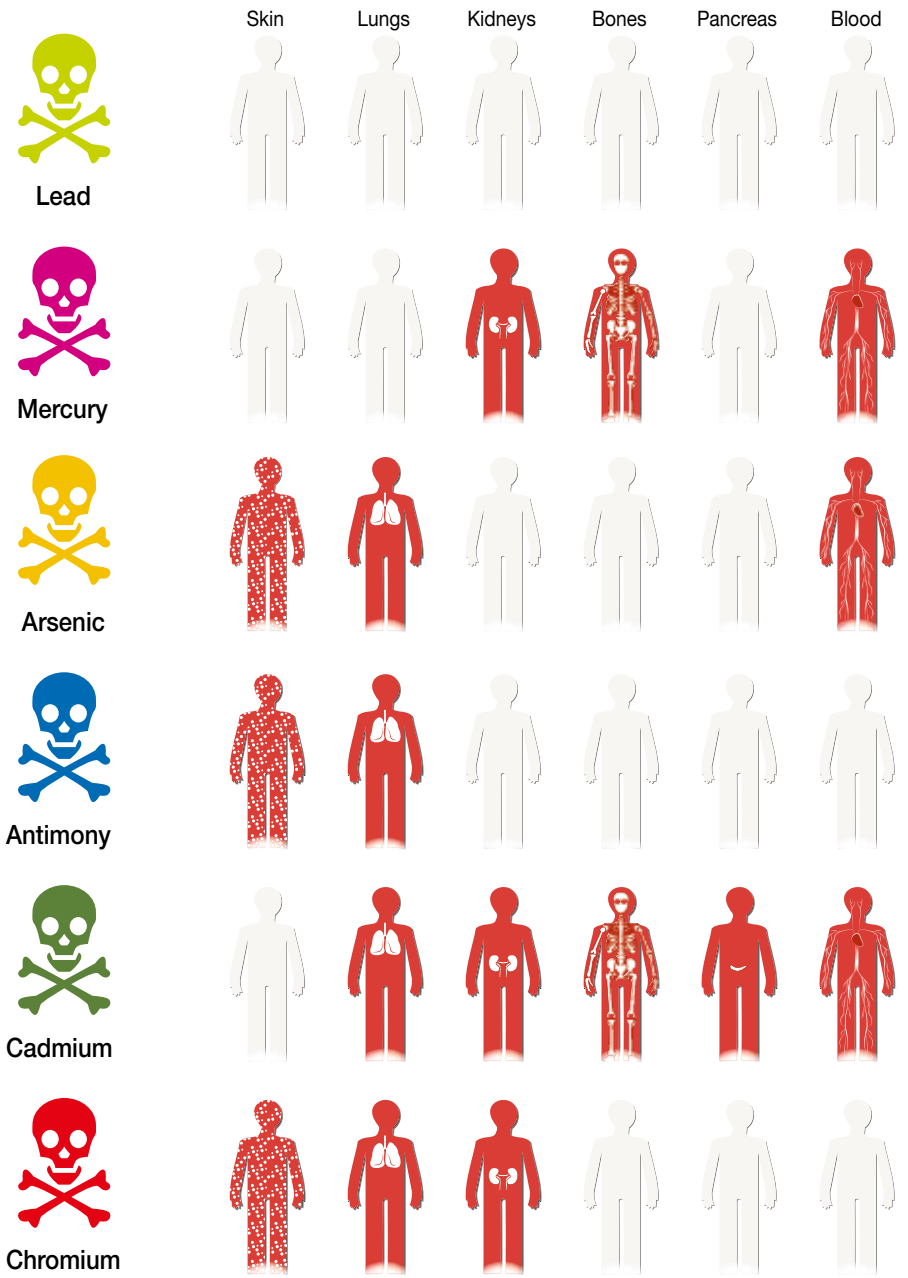
Concentrations of heavy metals in children´s toys

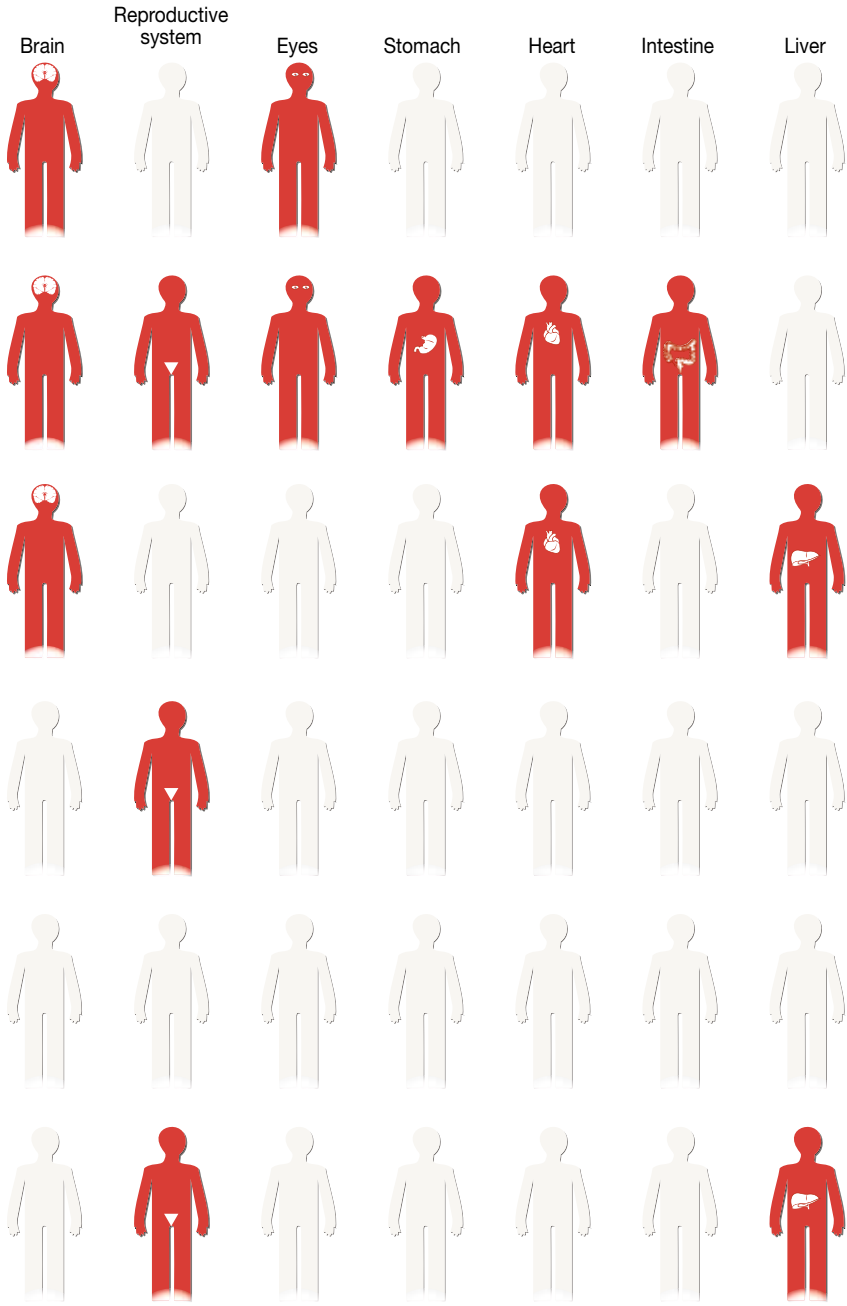


CONSEQUENCES

The toxic substances found in toys in the study can cause a variety of harmful consequences. Lead is a neurotoxin with no safe level of exposure. Even small amounts in children can give rise to learning difficulties, attention deficit disorder, trouble with coordination, anemia, as well as visual, spatial and speech problems. Mercury damages the kidneys and can inflict damage on the nervous, cardiovascular, respiratory, gastrointestinal, hematologic, immune and reproductive systems. A child's nervous system in the early stages of development is particularly prone to damage from mercury: exposure can lead to a loss of IQ, abnormal muscle tone and a loss of motor function. Exposure to arsenic is associated with cancer, skin lesions, high blood pressure and, in children, is correlated with lower IQ and neurological dysfunction. Antimony is carcinogenic and can cause fertility problems.

Impacts of toxic metals

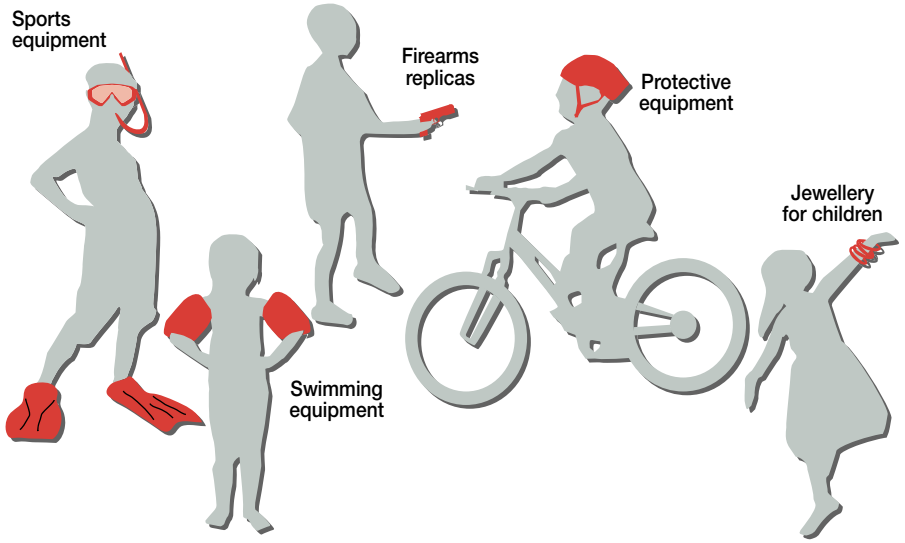



Brain
Reproductive system
Eyes
Stomach
Heart
Intestine
Liver

REGULATIONS

The Technical Regulation of the Customs Union establishes common principles and rules for Belarus, Kazakhstan and the Russian Federation. The category 'On the safety of toys' contains a list of items not regarded as toys and therefore not regulated. This list is comprised of sports equipment including that used for underwater activities, firearm replicas, imitation jewellery for children, swimming equipment (e.g. inflatable arm floats) and protective equipment such as goggles, sunglasses and helmets. In the *Toxic Metals in Children's Products* study, toxic substances were found in such products. It indicates a loophole in the present regulations which might result in children using products with toxic substances. This is alarming and further highlights the need for current regulations to be reconsidered and revised. More fundamentally, the region needs a clear, easily enforced regulatory process for toxic metals in children's products. The total concentration method used for soil or lead in paint could be a model for an updated regulatory process, which would require limits for concentrations of toxic substances to be chosen.

Items not regulated



RECOMMENDATIONS

1

Producers must become more aware of issues concerning toxic substances in children's products. Manufacturers should actively improve their manufacturing processes and designs to reduce and ultimately eliminate all hazardous substances in their products, especially toxic metals such as lead.

2

Countries should not support or give encouragement to manufacturers that produce toxic products for children. Companies are now able to produce children's products free from toxic substances, including toxic metals. A clear and achievable goal for countries in the EECCA region is to have toxic free children's products by 2020.

3

Countries in the EECCA region should strengthen their regulation of hazardous substances in children's products. Tighter supervision is needed. There should be more cooperation with external regulatory bodies so that products recalled in the EU countries or in other markets, where regulations are more tightly controlled, are also recalled in the target countries.

4

The agencies authorized to control the trade in toys should conduct comprehensive testing of products on a regular basis, ensuring enforcement of consumer legislation. The quality of goods made available in markets and other sales outlets – including those on the internet – should be checked annually. Consumers should be confident in the guarantee provided by government safety logos.

5

Governments should tighten both sanitary and epidemiological controls. Products that fail to meet quality control standards should be destroyed and financial sanctions should be placed on both manufacturers and sellers of such products.

6

Labelling of the chemical contents of children's products should be introduced. 'No data – No market' should become a key principle governing the sale of children's products. Fines should be levied for selling toys without labelling and health certificates. Such fines should be increased relative to the production volumes of offending manufacturing companies.