



Cadmium: Another Toxic Threat in California Jewelry



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Introduction

Cadmium is a toxic metal that is most well known as part of nickel-cadmium (Ni-Cad) batteries. Less well known is its use in making jewelry. A soft metal, it can be used as part of the metal alloys in pendants and charms.

Cadmium's health effects are well documented. The National Institute for Occupational Safety and Health identifies three major problems associated with cadmium exposure: cancer, genetic damage, and reproductive harm.

This report describes children's and adult jewelry purchased recently in California with high amounts of cadmium that violate California's consumer protection law.

What We Did

We purchased jewelry from major California retailers in December 2009 and January 2010. After the jewelry was purchased we screened it for cadmium content using an x-ray fluorescence analyzer. We sent components that our screening identified as potential violations of California law to a commercial lab for verification.

What We Found

We found four pieces of jewelry with high cadmium contents, including a children's necklace with a high-cadmium cupcake pendant from Justice and a breast cancer awareness bracelet with a pink ribbon high-cadmium charm from Catherine's.

The state of Washington recently passed a law that set a limit of 40 parts per million cadmium in children's products, including children's jewelry.

There are no federal standards for cadmium concentrations in jewelry, although legislation has been introduced to ban cadmium in children's jewelry.

The high cadmium concentrations we identified (see next page) are at least 5,000 times the limit set by the Washington law.

California jewelry with cadmium concentrations at least 5,000 times the Washington state standard.

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| <p>pink ribbon charm on Catherine's bracelet</p> | <p>cupcake pendant on Justice necklace</p> | <p>circular pendant on Aeropostale necklace</p> | <p>black links on necklace from Off 5th</p> |
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Not Good for Children

A group of European researchers and physicians recent reviewed studies of cadmium's effects on children.

They found that cadmium exposure during childhood results in cadmium accumulating in children's bodies. There is some evidence that cadmium is taken up more easily by children than adults. We get rid of cadmium from our bodies very slowly (some cadmium stays in the body for at least 30 years), so the cadmium that is accumulated during childhood leads to health problems later on.

The authors of the review concluded , "Cadmium exposure at early age should be limited as much as possible to prevent direct effects on children and to prevent accumulation of cadmium which may have serious health effects only becoming manifest at older age."

Not Good for Adults Either

Cadmium's ability to cause cancer, kidney damage, and reproductive harm are well documented.

Cadmium's effects on our ability to have children are especially concerning. A recent review found that this metal "has the potential to affect reproduction and development in many different ways, and at every stage of the reproductive process." Effects on reproduction occur in both sexes. In men, this includes problems with sperm production; in women, it includes problems getting pregnant and maintaining a pregnancy as well as birth defects.

The normal functions of our hormone systems can be disrupted by cadmium. It has the ability to act like estrogens ("female" sex hormones) and androgens ("male sex hormones). This suggests that cadmium exposure may be linked to breast and prostate cancer; both can be hormone-sensitive cancers.

Cadmium exposure has also been linked with lung cancer and osteoporosis (weakening of the bones).

What You Can Do

Don't purchase the cadmium-containing jewelry identified in this report.

Don't buy jewelry with metal components for children.

If you live in the Bay Area you are welcome to bring jewelry you are concerned about to CEH for free testing. Call us for details.

Buy locally made jewelry at craft and holiday fairs.

Support a new federal bill (HR4428) to ban cadmium in children's jewelry.

References

Introduction

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