

Despite spooky Consumer Reports' testing, metals in chocolates aren't scary

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reader comments

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With Halloween bounties now collected and as end-of-year holidays that brim with tempting treats approach, you may once again be wondering about the dangers of indulging. Among the most alarming concerns to gain attention recently is the risk of heavy metals in candy. Last week, Consumer Reports (CR) released its second article highlighting that one of America's most beloved confections—chocolates—can contain small amounts of the toxic metals lead and cadmium.

CR tested 48 chocolate products in various categories—from milk chocolate bars to brownie mixes, chocolate chips, and hot chocolate—finding “high” and “concerning” levels of at least one of the two heavy metals in a third of the products. Last year, the nonprofit consumer organization tested 28 bars of dark chocolate, finding what it suggested was “dangerous” levels of cadmium and/or lead in 23 of the bars.

The news made waves last year and may renew fears about what's lurking in holiday treats. But, a closer look at the data—as well as reactions from actual medical toxicologists—indicates that the risk of heavy metals in chocolate is actually pretty low.

CR used a very conservative threshold for determining “high” levels of the metals, which are not backed by major regulatory and health agencies, including the World Health Organization and the Food and Drug Administration. While pressuring chocolate companies to do more to keep contaminants out of our treats is a reasonable goal, this is not something anyone needs to fret about.

The threshold CR used: California’s MADLs

CR told Ars it would not release its raw chocolate data to us, telling us it was proprietary. But, according to the report article, it based its threshold for levels of cadmium and lead in chocolate products on the MADLs set by California’s Proposition 65, the state’s initiative to reduce exposures to toxic chemicals. Generally, Prop 65 MADLs, or the “Maximum Allowable Dose Levels,” are calculated by looking at the most sensitive toxicology studies on a potentially harmful substance, determining the level of exposure at which there is *no* detectable harm—aka the NOEL for “No Observable Effect Level”—and then dividing the NOEL by 1,000.

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Thus, a MADL is one-thousandth the level at which there is no observable harm, which, as the state of California puts it, is “to provide an ample margin of safety.”

“MADLs are set to be very conservative,” Dr. Andrew Stolbach, a medical toxicologist and emergency physician at Johns Hopkins Medicine, told Ars over email. “There are extra safety factors built in to account for people much more at risk (by virtue of age, intake levels, or other medical conditions).”

The MADL for cadmium is 4.1 micrograms per day ($\mu\text{g/day}$). For lead, the MADL is 0.5 $\mu\text{g/day}$.

If a sample of a chocolate product was above these levels, CR considered it high and, in some cases, “concerning.” The organization didn’t report the raw numbers for samples—which were also averages of three samples from the same lot—it only reported percentages. For instance, Target’s “Good & Gather Semi-Sweet Mini Chocolate Chips” reportedly had 102 percent of the MADL for lead—which works out to 0.51 µg per serving. Based on that, it was therefore considered “high.” Some other samples had levels that were double or triple the MADLs.

It’s important to note, however, that these MADLs are not currently enforced in California. Chocolate makers and As You Sow, a nonprofit that advocates for corporate responsibility, entered into a consent judgment in 2018, which set more permissive interim limits for cadmium and lead in chocolate products as the groups work together on ways to reduce contaminant levels during production.

Additionally, the MADL levels are significantly more conservative than recommendations from the FDA and WHO.

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