FAQ: Heavy Metals in Chocolate

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The following is a set of FAQs in response to a Consumer Reports study on lead and cadmium content in dark chocolate: https://www.consumerreports.org/health/food-safety/lead-and-cadmium-in-dark-chocolate-a8480295550/

What is PCC doing in response to the Consumer Reports study?

PCC takes the issue of heavy metal contamination very seriously. Unfortunately, this is not a new issue and is not the first time that chocolate has been flagged as a food requiring more scrutiny. With this latest report, we reached out to Consumer Reports to learn more about their testing protocol and findings, and unfortunately never received a response. We also reached out to our chocolate producers to learn more about their current sourcing standards, heavy metal testing protocols, and possible solutions to reduce contamination. We received information from a majority of suppliers but are still waiting on some responses. Throughout this process we will continue to assess the identified brands and products to determine next best steps.

Do I need to be concerned about all chocolate?

Testing indicates that the greatest concern is with darker chocolates, particularly for cadmium, because the contamination comes from the cocoa solids themselves, which are in higher concentrations in dark chocolates. Consumer Reports tested only a handful of brands and what appears to be a small number of bars, so it is possible that other dark chocolates from those brands are either lower or higher in heavy metal content. The only way to be sure about the levels in a particular bar of chocolate is to test the cocoa and end products for every new batch, which we learned nearly all producers are already doing. To learn a bit more from experts on this topic, we would encourage you to check out the recent article from the New York Times, "Do I Need to Avoid Dark Chocolate Now?"

Is this the first time we are learning about heavy metal contamination in chocolate?

Unfortunately, no. In the past decade we have seen a number of studies[1] and reports concerning heavy metal contamination in chocolate. While chocolate and cocoa have tested as one of the foods with higher levels, heavy metal contamination is not unique to the chocolate industry and is a global issue resulting from primarily human use and proliferation of reactive heavy metals. Many growers and chocolate manufacturers have been actively taking steps to reduce the levels of heavy metals in their chocolate over the years as well as trying to align and identify appropriate industry safety standards.

[1] https://ehp.niehs.nih.gov/doi/full/10.1289/ehp.8009
https://www.fda.gov/food/fda-total-diet-study-tds/fda-total-diet-study-tds-results

What are “safe” levels of lead and cadmium?

We know that lead and cadmium have adverse health impacts, unfortunately there is not alignment on what levels are considered safe in foods and no universal standard for companies to test against. In California, Proposition 65 sets maximum allowable dose levels (MADL) as 0.5 micrograms for lead and 4.1 micrograms for cadmium. These are the levels against which chocolate was tested in the Consumer Reports study. However, most chocolate producers follow levels set by an agreement between the State of California and the industry, which supersedes the Proposition 65 levels. Under that agreement, the maximum levels for 65-95% cocoa content to trigger a warning on the package are 0.150 parts per million for lead and 0.450 parts per million for cadmium. In the European Union, their safety standards are no more than 21 micrograms per day of cadmium, based on a 130-pound individual. Additionally, the EU has tiered levels of acceptable cadmium, with higher tolerances for higher cocoa content; for chocolate over 50% cocoa, the limit is .80 mg/kg. There is no established safe limit for lead, although experts do know that children are more sensitive than adults.

Why doesn’t PCC put up warning labels in stores?

PCC typically does not put warning labels on shelves for situations such as this because of the complexity and variability of risk. While the findings of Consumer Reports are troubling, from what the report indicates, it appears their sample size is very small, testing a few bars from only a handful of specific brands. This means it is possible that the results from those small sample sizes are a statistical anomaly and if they tested more bars of the same kind, the results could be different. Even when looking at more robust testing conducted by other organizations, such as As You Sow, there can be a significant degree of variation in findings.

Additionally, testing always targets specific brands. Given the pervasive nature of heavy metal contamination, it is possible that bars or brands excluded from testing might have lower, similar, or higher levels. It would be misleading to put up a warning label for one bar based upon the evidence from Consumer Reports and other research, without being confident that the chocolate bar the consumer chooses instead actually contains lower levels of lead and cadmium. Finally, risks from consumption of chocolate are highly individualized and dependent on a number of factors, including what acceptable limits are determined to be safe—a factor experts have yet to agree on. With all of this variability and the many benefits we know moderate dark chocolate consumption can bestow, we do not believe warning labels are the best method for education.

How do heavy metals contaminate chocolate?

Heavy metals are naturally occurring, especially in areas with volcanic soils, such as Latin America. Additionally, since humans began using heavy metals in many industrial applications and consumer products, like leaded gasoline or heavy metal-based pesticides, they have been released into the environment in forms that can accumulate in water, soil, and air, thus leading to what seems to be an increasing contamination of our drinking water, soils, and many different foods (e.g., rice, sweet potatoes, carrots, spinach, and more).

According to the Consumer Reports article, some lead may contaminate chocolate during the processing phase when beans are left out to dry and become covered in contaminated dust and dirt. Cadmium, on

the other hand, accumulates in the cacao trees from contaminated soil, which means older trees are more likely to have higher levels of cadmium.

Why doesn't PCC test all its chocolate for lead and cadmium?

We recognize that testing can be an important part of addressing heavy metal contamination. However, testing all brands of chocolate at the retail level is not feasible, due to operational capacity and cost limitations. There are also differing scientific opinions concerning what levels are considered safe and federal regulators, such as the Food and Drug Administration (FDA), have yet to set acceptable limits for a wide range of foods. We will continue to work with our chocolate suppliers, allies in the natural foods industry, and other experts in the field to evaluate and identify best practices on testing, sourcing, and processing.

Does the producer of PCC Private Label Chocolate test for heavy metals?

Yes. K'UL, the producer of PCC Chocolate, tests every batch of cacao beans for heavy metals and applies the Proposition 65 standard to determine acceptable limits, which incorporates the same California-based maximum allowable dose level (MADL) applied in the Consumer Reports testing. (It is important to note that neither testing nor application of the Proposition 65 standards are required for production and sale of chocolate in Washington.) In response to this report, K'UL has now run some tests on the finished product and are working with their suppliers to minimize heavy metal levels, such as diversifying cocoa sourcing while maintaining their commitment to supporting local, fair-trade producers.

Why doesn't PCC carry the brands that tested low for lead and cadmium in the report?

PCC requires that all chocolate sold on our shelves must meet a number of social and environmental quality standards, including fair labor verification and limitations on potentially harmful ingredients (such as genetically modified sugar and artificial preservatives). Most of the brands tested by Consumer Reports as having lower levels of lead and cadmium do not meet PCC's other important product standards. You can learn more about our quality standards here.

Has PCC reached out to the brands that tested high in the study? If so, what was their response?

Yes, after the Consumer Reports study emerged, PCC immediately reached out to the brands we carry that tested higher in cadmium and lead than the baselines established by Consumer Reports. The overwhelming response from vendors was that they test for heavy metals regularly, at multiple stages during production, including in the final bar form, and those tests all fall below the recommended levels for heavy metal content. Of course, as discussed in earlier responses, a lack of clarity and consistency on what "recommended levels" are actually safe makes this assessment variable. Many producers utilize the European Union standards, while others look to Proposition 65 standards, or the industry settlement

agreement with California. Beyond testing, most vendors noted they have made changes over the years to their sourcing selections, implemented additional cleaning processes to reduce mineral content that contains heavy metals, and worked with farmers and processors to find ways to reduce contamination. Additionally, many vendors emphasized that heavy metal contamination is a global issue not unique to the chocolate industry and to address the root of the problem, we must work collectively to reduce contamination sources and set meaningful regulations.

How can I reduce my exposure to heavy metals from chocolate?

Consumer Reports makes several recommendations on how to reduce potential exposure to heavy metals when eating chocolate and we encourage you to check out the report for these recommendations. To highlight a few, they recommend you consume dark chocolate and all chocolate sources in moderation. If chocolate is a must, consider eating milk chocolate or dark chocolate with lower concentrations of cocoa (under 70%). Don't give kids too much dark chocolate and avoid too much chocolate if pregnant. Lastly, eat a well-rounded diet as this cannot only help reduce exposure to heavy metals in chocolate, but all potential sources of heavy metals in food.