

The War on Contaminants: The Case for Infant Formula and Baby Food

Our point of view

Introduction

Clean Label Project was formed with the mission to raise awareness on the presence of dangerous environmental contaminants in everyday consumer products. Clean Label Project believes that when it comes to environmental contaminants, less is better than more. Not only do these compounds have the potential to cause adverse health effects, the knowledge on the long-term effects of exposure to these contaminants is concerning and still developing.

In July 2017, Clean Label Project released our first white paper outlining our general stance on contaminants as it related to the pet food industry. In October 2017 Clean Label Project conducted the largest study of its kind on nutritional/ingredient superiority and industrial and environmental contaminants in America's best selling infant formula and baby food. This document is an update to the previous report and focuses on the rationale for CLP examining the contents of infant formula and baby foods.

Key Takeaways:

- When it comes to your baby – none is better than “less” when it comes to industrial and environmental contaminants.
- Clean Label Project believes that the safest approach to take when it comes to the health and safety of family members is that less contaminants is better than more.
- This is important because an accumulating body of evidence suggests that, for many environmental and industrial contaminants, the only truly safe level of exposure is no exposure.

Definitions and Terminology

What is a contaminant?

Used here, the word “contaminant” refers to any of several compounds or chemicals of environmental and industrial origin that, despite being potentially dangerous, are sometimes inadvertently present in finished products. This could include contaminants like heavy metals, pesticides, as well as man-made substances like bisphenol A (BPA), which is introduced to food products by packaging, and acrylamide, which can be created through the food production process.

What contaminants does Clean Label Project measure?

Clean Label Project, with the help of an independent third-party analytical chemistry testing laboratory, measures over 130 separate environmental and industrial contaminants, including, but not limited to, heavy metals (e.g., lead and arsenic), pesticides (100+ pesticides), melamine and its analogues, antibiotic-residues, BPA and its analogue BPS, antibiotics, and acrylamides.

How do contaminants wind up in food?

Contaminants may wind up in a finished food product through several routes. Some, like heavy metals, can be absorbed into plants grown in poor quality soil. Some metals (like mercury and arsenic) can be present in high concentrations in seafood where metal contamination builds throughout the life of the fish. Other contaminants are the result of the process of preparing the product: acrylamides can result when starchy foods, like potatoes, are fried at



high heat and BPA can be present in food packaging, including plastic packages and metal cans. Regardless of how these contaminants wind up in baby food, the results of our baby study confirm that there is considerable room for improvement for many brands and that it is definitely possible to reduce, or even entirely eliminate, these contaminants from the food we feed our children.

How does Clean Label Project address these contaminants?

Clean Label Project believes the best way to effect change on a large scale is through the use of data, science, and transparency. Information asymmetry is an economic term used to represent the imbalance of information between two parties. Clean Label Project uses category testing data to combat this asymmetry by demonstrating how much room for improvement an industry has (be it the pet food industry, baby food industry, etc). While many times insufficient, there are regulatory standards for human food (e.g., human standards propagated by the EPA, FDA, EU Commission, the work of the California Office of Environmental Health Hazard Assessment as shown in Table 1), and we use these standards as an inspiration when developing our standards. Beyond regulations, Clean Label Project believes in benchmarking results against the rest

Table 1: Office of Environmental Health Hazard Assessment regulatory limits

1 California



Lead	0.5 ug/day
Cadmium	4.1 ug/day
Arsenic	10 ug/day
Mercury	0 ug/day
Acrylamide	0.2 ug/day

¹<https://oehha.ca.gov/proposition-65/proposition-65-list>

“...95% of brands use co-manufacturers or co-packers. This means that the brands that we buy, are not directly manufactured by the brand themselves.”

of the category, demonstrating that there is room for improvement within the category, and providing parents with clear information as to which products outperform the rest of the pack.

How can the infant formula and baby food industry do better?

Infant formula and baby food companies play a critical role in the safety and purity of the food we feed America’s most vulnerable populations. The truth is, that when it comes to food production, 95% of brands use co-manufacturers or co-packers. This means that the brands that we buy, are not directly manufactured by the brand themselves. Rather, they are created by a third-party manufacturer. The use of co-packers is prevalent in the infant formula and baby food industry. Some brands are extremely involved in the ingredient sourcing process- setting product specifications to ensure that any ingredient used by the co-manufacturer meets the strict quality requirements set by the brand. Other brands put the onus of the quality assurance and quality control back on the co-manufacturer. When the quality assurance and quality control is not directly addressed, price point pressures can take over compromising ingredient and ultimately, the end product quality.

When it comes to infant formula and baby food, brands must have strict ingredient quality specifications, perform testing,



and have strict supplier assurance programs to help ensure the quality of the food we feed America's infants and children.

Clean Label Project believes that there is no room for contaminants in baby food

While some contaminants, like chromium, can be beneficial or even essential in small quantities, the fact remains that all the contaminants Clean Label Project measures can have an adverse effect on health. The World Health Organization (WHO), who's primary role is to direct international health in the United Nations' systems and to lead partners in global health responses, has stated that the first 1,000 days of life are the most critical for development¹. A child isn't simply a smaller version of an adult. The body and, especially, the brain of a child is still developing and changing. This makes children, especially babies, uniquely vulnerable to the effects of many industrial and environmental contaminants². For example, evidence suggests that the child body does not process dangerous chemicals like acrylamide (a substance linked to cancer³) the same as an adult body⁴. This means that it is urgent to reduce or eliminate the exposure of infants to these contaminants wherever possible as children are at an even greater risk than the general population.

There is little debate that contaminants like lead, arsenic, mercury, and acrylamide are bad for humans. While heavy metal exposure is bad for humans of any age, evidence suggests that children are especially vulnerable. This is in part due to the potential for many heavy metals to disrupt the delicate changes occurring in the developing brain – often with lasting and meaningful consequences. For example, even low level heavy metal exposure in infants has been linked to growth impairments⁵, suggesting that metals may interfere with the normal growth process. Lead, in particular, has been linked to multiple adverse outcomes in children⁶. Even moderate exposure to lead as a child has been associated with increased depression and anxiety as adults⁷, and further evidence indicates that lead

exposure during early life is linearly linked to decreased IQ⁸. Lead is not alone in posing a risk to developing children. Arsenic, in addition to being a confirmed carcinogen⁹, has been linked to neurological impairments as well as birth defects¹⁰. Bisphenol A (BPA), a chemical found in plastics and the linings of metal cans, has been linked to disrupted hormone levels in infants¹¹. Even low-level exposure (i.e., below human regulatory limits) to mercury can disrupt brain development.

New evidence suggests that the effects of mercury on developing brains is linear – meaning any amount of mercury can be harmful to growing brains rather than the “all or nothing” system implied by current government or industry regulations. It has been argued by some scientists that, for environmental contaminants like lead, the concept of “safe levels” may be an illusion¹² – instead, our focus should be on reducing or eliminating living organisms' exposure to lead. As the scientific body of knowledge on these contaminants increases, it becomes apparent that “safe” is synonymous with “less.” Consider the following data based on the 1999 National Research Council report on arsenic in drinking water¹³ as shown in Table 2:

Table 2: 1999 National Research Council report on arsenic in drinking water and cancer risk

Arsenic Level in Tap Water (in parts per billion, or ppb)	Approximate Total Cancer Risk (assuming 2 liters consumed/day)
0.5 ppb	1 in 10,000
1 ppb	1 in 5,000
3 ppb	1 in 1,667
4 ppb	1 in 1,250
5 ppb	1 in 1,000
10 ppb	1 in 500
20 ppb	1 in 250
25 ppb	1 in 200
50 ppb	1 in 100

There is a clear link between the amount of arsenic in tap water and the cancer risk in humans. This data also suggests that, when it comes to cancer, less is better. This pattern also extends to

“I think the onus is really on FDA and industry to change their standards to reflect what we know, that there is no safe lead level.”

-Jennifer A. Lowry, MD, FAAP, chair of the America Academy of Pediatrics Council on Environmental Health Executive Committee

acrylamides, where researchers have argued that there is a risk of acrylamide bioaccumulation in children consuming fried potato chips¹⁴, suggesting once again that less exposure is better than more. For these environmental contaminants, there is unlikely to be a magic cut-off below which exposure to a contaminant carries no risk – and if there is, it almost certainly is not the current regulatory limits.

There needs to be a regulation conversation

Clean Label Project believes that the environmental and industrial contaminants we measure are dangerous to all living organisms. As knowledge improves, the consensus of the scientific community has been that greater restriction is required. Consider the acceptable levels of arsenic in drinking water –the limit in some states has dropped nearly 10-fold in the last 20 years alone^{15,16}. In 2010, a WHO joint committee lowered the previous limit for arsenic exposure by 80%, signaling that as we learn more about arsenic, we realize it is more dangerous, not less¹⁷.

Despite the accumulated weight of evidence, there remains no federal regulations for contaminant levels in the food we feed our most vulnerable population. While there has been some effort to regulate human exposure to these contaminants at the state (e.g., California) and federal levels (particularly for water, rice, and fruits), there needs to be a more serious conversation motivated by genuine consumer concern. The risk that these contaminants like lead pose to humans, particularly children, is not in debate. While the current regulations are a good start, too often brands are able to slip through regulatory “loopholes” rather than changing their products or their processes. Any meaningful change on the part of these brands begins with consumers demanding better, and doing so loudly enough that the government takes notice and, ultimately, takes action.

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