

## EXECUTIVE SUMMARY

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# What's in my baby's food?

A national investigation finds  
95 percent of baby foods tested  
contain toxic chemicals that lower  
babies' IQ, including arsenic and lead

Report includes safer choices for parents, manufacturers  
and retailers seeking healthy foods for infants

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# What's in my Baby's Food?

Our findings show what parents, baby food companies and FDA should do to get toxic heavy metals out of babies' diets

## EXECUTIVE SUMMARY

Parents shop for baby food expecting the nutrition, convenience and baby-tested flavors of store-bought brands. But nearly every jar, pouch and canister also offers something unexpected for a baby's mealtime—traces of heavy metals, including arsenic and lead.

The problem, uncovered nearly a decade ago, is far from solved. New tests of 168 baby foods commissioned by Healthy Babies Bright Futures (HBBF) found toxic heavy metals in 95 percent of containers tested. One in four baby foods contained all four metals assessed by our testing lab—arsenic, lead, cadmium, and mercury. Even in the trace amounts found in food, these contaminants can alter the developing brain and erode a child's IQ. The impacts add up with each meal or snack a baby eats.

Fresh research continues to confirm widespread exposures and troubling risks for babies, including cancer and lifelong deficits in intelligence from exposures to these common food contaminants. Despite the risks, with few exceptions there are no specific limits for toxic heavy metals in baby food.

### PROMISING SIGNS OF PROGRESS MUST ACCELERATE TO PROTECT BABIES.

The government, parents and baby food companies are paying attention. In 2017 the U.S. Food and Drug Administration charged a team of top agency scientists with “reducing exposures... to the greatest extent possible” by prioritizing and modernizing FDA's approaches (FDA 2018a,b). In early 2019 leading baby food companies supported by non-profit organizations, including HBBF, formed a new Baby Food Council that is “seeking to reduce heavy metals in the companies' products to as low as reasonably achievable using best-in-class management practices” (BFC 2019). And since 2011 public health advocates have regularly tested baby foods and educated parents on issues ranging from arsenic and lead in fruit juice (CR 2011,2019a) to arsenic in infant rice cereal (HBBF 2017a, CR 2012) and heavy metals in a range of baby foods (CR 2018, EDF 2017a, Gardener 2018).

Children are better off for the efforts: Current arsenic contamination levels in rice cereal and juice are 37 and 63 percent lower, respectively, than amounts measured a decade ago because of companies' success in reducing metals levels in their food ingredients to comply with draft FDA guidance. They have shifted growing and processing methods, switched plant varieties, and sourced from cleaner fields.

Despite the gains, 19 of every 20 baby foods tested had detectable levels of one or more heavy metals, according to new tests detailed in this study. Only a dramatically accelerated pace at FDA and the fruition of the new Baby Food Council's pursuit of industry-wide change will be enough to finally solve the problem.



#### TEST RESULTS: 168 BABY FOODS

**95 percent of baby foods tested contained one or more toxic heavy metals**

*1 in 4 baby foods contained all 4 toxic heavy metals assessed by our testing lab, including arsenic and lead.*

#### How many baby foods had multiple heavy metals in a single container?

4 metals	26% of baby foods
3 metals	40%
2 metals	21%
1 metal	8%
0 metals	5% (9 foods)

#### In how many baby foods was each heavy metal found?

Arsenic	73% of baby foods
Lead	94%
Cadmium	75%
Mercury	32%

## WHAT'S NEW ABOUT THIS STUDY?

Reports of heavy metals in baby food span nearly a decade. HBBF's study advances this work in 4 ways:

**Many brands tested:** We report on tests of a wider variety of brands than past studies - 61 brands, from big names to niche brands.

**First-ever look at IQ loss for babies:** We include a new study HBBF commissioned from Abt Associates to quantify for the first time the health impacts posed by heavy metals in baby food. This work gives first-ever estimates of the population-wide decline in IQ from children's exposures to lead and arsenic in food, from birth to 24 months of age. It also gives food-by-food rankings to show the 15 foods commonly consumed by babies and young children that drive more than half of the risk (see Findings section of this report).

**Optimized actions for parents:** We streamline advice for parents to cover foods posing the greatest risk to babies, based on the newly released IQ loss findings (Abt 2019b). This allows parents to focus on five actions estimated to provide the greatest benefit for babies' brains.

**New data on industrial pollutants and additive risks:** We also include new data for the industrial chemical perchlorate in baby food. It adds to the risk of IQ loss posed by heavy metals, increasing the urgency for actions to lower the levels of neurotoxic contaminants in baby food.

### PARENTS CAN MAKE FIVE SAFER BABY FOOD CHOICES FOR 80 PERCENT LESS TOXIC METAL RESIDUE.

In the meantime, HBBF's new tests help parents navigate the baby food aisle. We found that simple changes can significantly lower a baby's exposures to heavy metal contamination. Parents shopping for baby food can choose five types of safer items, all readily available, over more contaminated foods (see table below). The safer choices contain 80 percent less arsenic, lead and other toxic heavy metals, on average, than the riskier picks.

Notably, parents can't shop their way out of these exposures by choosing organic foods or by switching from store-bought brands to homemade purees. Heavy metals are naturally occurring in soil and water and are found

at elevated levels in fields polluted by pesticides, contaminated fertilizer, airborne contaminants and industrial operations. Food crops uptake these metals naturally. Leafy greens and root crops like carrots and sweet potatoes retain more than most other types of fruits and vegetables. How the food is processed may also affect the levels. Organic standards do not address these contaminants, and foods beyond the baby food aisle are equally affected.



### Our tests show that simple actions for 5 foods can help lower your babies' exposures to arsenic, lead and other toxic heavy metals

	Higher risk foods for heavy metal exposure	Safer alternative	Toxic heavy metal level
<b>Snacks</b>	Puff snacks (rice)	Rice-free snacks	<b>93% less</b>
<b>Teething Foods</b>	Teething biscuits and rice rusks	Other soothing foods for teething—frozen banana or chilled cucumber	<b>91% less</b>
<b>Cereal</b>	Infant rice cereal	Other infant cereals like multi-grain and oatmeal	<b>84% less</b>
<b>Drinks</b>	Fruit juice	Tap water	<b>68% less</b>
<b>Fruits &amp; Veggies</b>	Carrots and sweet potatoes	Variety: A variety of fruits and veggies that includes carrots, sweet potatoes, and other choices	<b>Up to 73% less</b>

Source: HBBF analysis of tests of 168 baby foods by Brooks Applied Labs, Bothell Washington and FDA market basket data, 2014-2017. Exposures reductions consider average total heavy metal levels in each food (inorganic arsenic, lead, cadmium, mercury) except for cereal, which considers inorganic arsenic only.

## FIFTEEN FOODS ACCOUNT FOR MORE THAN HALF OF THE RISK. RICE-BASED FOODS TOP THE LIST.

Our research substantiates the widespread presence of toxic heavy metals in baby foods found in prior studies, almost no enforceable limits or guidelines on what's allowed, and the common occurrence of arsenic and lead in excess of recommended levels to protect children's health (Table 1, page 12).

Although many foods are contaminated, a few stand out: 15 foods consumed by children under 2 years of age account for 55 percent of the risk to babies' brains, according to a new study commissioned by HBBF and detailed in this report (see Findings section and Appendix E). These include apple and grape juice, oat ring cereal, macaroni and cheese, puff snacks and 10 other foods.

But topping the list are rice-based foods—infant rice cereal, rice dishes and rice-based snacks. These popular baby foods are not only high in inorganic arsenic, the most toxic form of arsenic, but also are nearly always contaminated with all four toxic metals. The new study, completed by the nationally recognized toxicology and economic research firm Abt Associates, estimates that lead and arsenic in rice-based foods account for one-fifth of the more than 11 million IQ points children lose from birth to 24 months of age from all dietary sources. This concentrated risk underscores the need for swift action from FDA and baby food companies to reduce arsenic levels in rice-based foods.

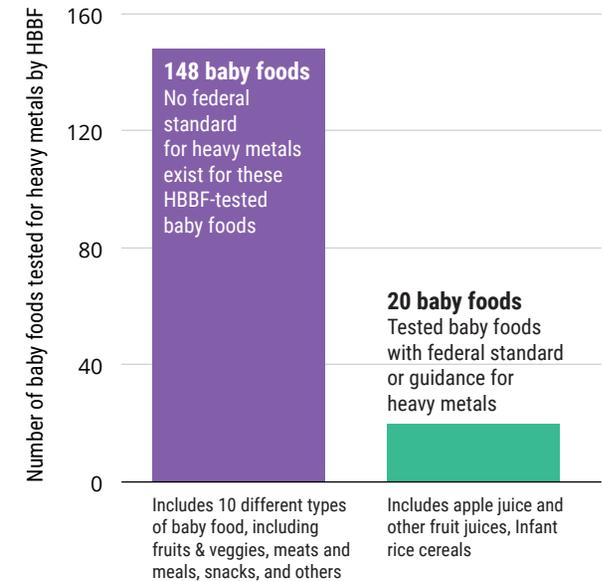
## PARENTS, BABY FOOD COMPANIES, FARMERS, AND FDA ALL HAVE A ROLE IN MEASURABLY REDUCING BABIES' EXPOSURES.

A number of baby food companies are setting their own standards in the absence of enforceable federal limits or guidance. As these initiatives advance, packaged baby foods may be increasingly likely to have lower amounts of heavy metals than homemade varieties.

Our findings raise concerns, but on the spectrum from worry to action, parents can choose to act. While no amount of heavy metals is considered safe, less is better, and parents can lower their babies' exposures by serving a variety of foods and by following the five safer choices for baby foods provided above.

Many factors can influence a child's IQ, from nutrition and genetics to environmental toxins like heavy metals (e.g., Makharia 2016). And many sources ratchet up children's exposures to heavy metals, from drinking water and old plastic toys to lead in dust from chipping paint and soil tracked into the house. But among these factors and sources, heavy metals in food constitute both a significant and a solvable problem. The government, companies and parents can all act — and are, in many cases, already acting — to measurably lower levels in food and to lessen exposures for babies.

## 88 percent of baby foods we tested have no enforceable federal safety limit for arsenic, lead and other heavy metals



## RECOMMENDATIONS

### Baby food companies

Our research shows that baby food companies need to take additional steps to reduce heavy metals in their products. This action is especially important for foods posing the greatest risk to baby's development, with arsenic in rice topping the list, based on a new analysis of children's IQ loss from lead and arsenic in baby food detailed in this study.

To reduce arsenic levels, solutions suggested by FDA and other experts include sourcing rice from fields with lower arsenic levels in soil, growing it with natural soil additives that reduce arsenic uptake by the roots, growing rice strains less prone to arsenic uptake, altering irrigation practices, preparing rice with excess water that is poured off, and blending it with lower arsenic grains in multi-grain products.



We found no evidence to suggest that any brand has reduced heavy metals levels in rice to amounts comparable to those found in other types of grains, despite at least 10 years of significant public attention to the issue that has included widespread consumer alerts and a proposed federal action level (Consumer Reports 2012 and 2014, HBBF 2017, FDA 2016). Four of seven infant rice cereals tested in this study contained inorganic arsenic in excess of FDA's action level.

### FDA

FDA should establish and finalize health-protective standards for heavy metals, prioritizing foods that offer the greatest opportunity to reduce exposure, considering additive effects of the multiple metals detected in foods, and explicitly protecting against neurodevelopmental impacts.

FDA should implement a proactive testing program for heavy metals in foods consumed by babies and toddlers, similar to the Consumer Product Safety Commission's program for children's toys (CPSC 2019).

Because inorganic arsenic in rice is a top source of neurodevelopmental risk for children, FDA should act immediately to establish a health-based limit for this chemical in infant rice cereal and other rice-based foods. In setting its 2016 proposed action level, the agency did not consider IQ loss or other forms of neurological impact, allowed cancer risks far outside of protective limits, and failed to account for children who have unusually high exposures to arsenic in rice (HBBF 2016). Rapid action by FDA to set a protective level will protect children from high levels of arsenic in rice.



### Parents

HBBF encourages parents to follow our simple actions for five foods to lower children's exposures to toxic heavy metals, shown in the Executive Summary and in the report section entitled "What parents can do." The safer choices we list contain 80 percent less arsenic, lead and other toxic heavy metals, on average, than the riskier foods.

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Healthy Babies Bright Futures (HBBF) is an alliance of scientists, nonprofit organizations and donors working to create and support initiatives that measurably reduce exposures to neurotoxic chemicals in the first thousand days of development.

Our efforts are inspired and supported by science and data, and designed to help restore the chance for a full life to children who would otherwise face brain-diminishing exposures to toxic chemicals beginning in utero.

Learn more at [hbbf.org](http://hbbf.org)