

BYHEART

# Meet the First New Infant Formula to Rewrite the Recipe in Decades

Clinically proven, next-to-breast milk benefits and certified cleanest ingredients\*—finally in the same bottle.



Every new formula brand, for the past few decades, has taken small steps towards developing a better bottle for baby—dialing up only one ingredient or benefit, relying on older clinical data—but ByHeart is about leaping.

Breast milk research and infant nutrition science have advanced, but product innovation has been slow to keep up. Until now.

At ByHeart, we worked with top experts in infant nutrition and breast milk research—including Dr. Bo Lönnderal, Dr. Steven Zeisel, Dr. Bruce German, Dr. Catherine Field, and Dr. Sharon Donovan—and incorporated the leading advancements in their fields to craft our formula. These innovations allowed us to bring novel breast milk components to infant formula; we even conducted the largest clinical trial by a new infant formula brand in decades and proved next-to-breast milk benefits alongside safety.

## KEY TAKEAWAYS

- ✓ **ByHeart** is the first new brand in decades to rewrite the recipe completely and the fourth fully integrated, FDA-registered infant nutrition manufacturer in the US. We own our ingredient sourcing, manufacturing, research, and development. Because that's what it took to innovate in the infant nutrition space.
- ✓ As the first US infant formula to receive Clean Label Project certification, we lead the charge in quality. We even won their highest tier "Purity Award."
- ✓ We are the very first easy-to-digest infant formula in the US with no soy, corn syrup, maltodextrin, or palm oil, because in our recipe, we consider every single ingredient.

\*Based on Clean Label Project, Purity Award certification

# Our Approach to Nutrition

We spent over five years obsessing over breast milk—studying its nutrients, analyzing its unique benefits—and made it the blueprint for our infant formula.

## Our Protein

Proteins are key to closing the gap between infant formula and breast milk. Our patented protein blend is designed to get closest to breast milk by combining the functionality of intact proteins with the tolerability of partially hydrolyzed proteins in a whey predominant ratio (80:20) for improved outcomes and to drive early digestion for baby.



### SPOTLIGHT ON OUR PROTEIN MATRIX

**Alpha-lactalbumin:** the most abundant protein in breast milk. We are the first US formula to provide it at breast milk levels.

**Lactoferrin:** the most abundant protein in colostrum, known for its role in supporting the development of the immune system.

**Partially hydrolyzed whey protein:** the prevalence of enzymes in the mammary gland results in the hydrolysis of the proteins in breast milk before consumption. The addition of partially hydrolyzed proteins in our formula results in a protein composition that more closely resembles breast milk for improved formula tolerance and digestion.

## Our Fats

Breast milk doesn't skim its fats, so we don't either. We chose to use organic, grass-fed whole milk instead of the skim milk base traditionally used in infant formula, to retain nutritional components that support baby's development and growth.

### SPOTLIGHT ON WHOLE MILK

When whole milk is defatted to create skim milk, important natural components are lost, like cholesterol, and other MFGM components such as sphingomyelin. Using whole milk allows us to retain more of those naturally occurring nutrients to drive additional benefits for baby.

## Our Carbohydrates

Just like breast milk, our formula uses lactose as its primary carbohydrate rather than added glucose like most other formulas, which often include corn syrup and maltodextrin and can change the composition of the gut microbiome. Lactose and our lactose-derived prebiotic GOS work hand-in-hand to keep baby's gut balanced, digestion smooth, and support nutrient absorption.

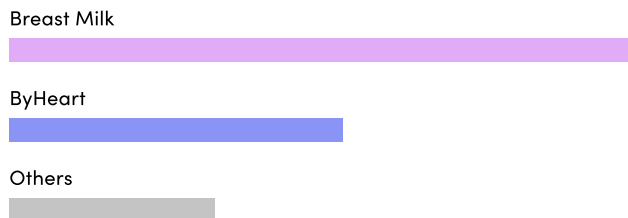
### SPOTLIGHT ON LACTOSE

The widespread use of lactose-free and low lactose formulas is likely unnecessary. Evidence shows most infants can digest lactose, as lactose intolerance rarely manifests clinically prior to age two.

# Our Approach Gets Us Closest to Breast Milk

Here's How

**60% more** of breast milk's two most abundant proteins Alpha-lac and Lactoferrin.



## WHY IT MATTERS

For easier digestion, nutrient absorption, immune and microbiome support.

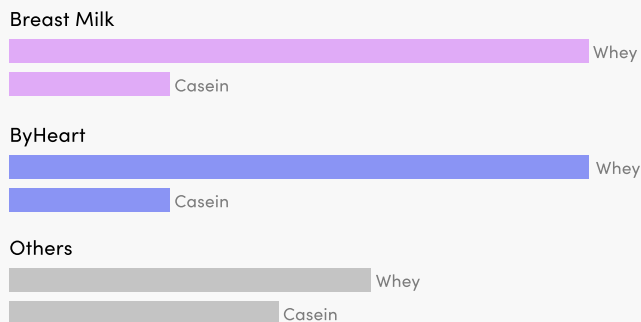
**Total protein quantity reduced to get closer to breast milk levels.**



## WHY IT MATTERS

For healthy growth and body composition.

**Our whey:casein ratio mirrors early breast milk.**



## WHY IT MATTERS

For optimized protein digestion and absorption.

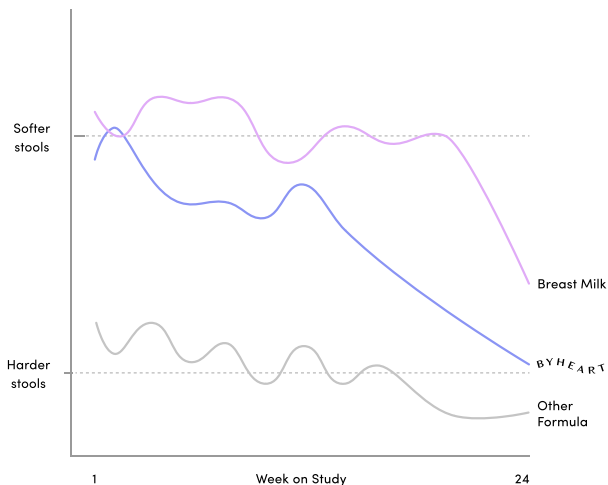


# Our Clinical Trial

To prove our formula's quality, we conducted a double blind, randomized, controlled clinical trial in the US—and, with 311 infants enrolled, it was largest one by a new infant formula brand in over 25 years. We even added a breast milk reference arm to see how we laddered up to nature's gold standard itself.

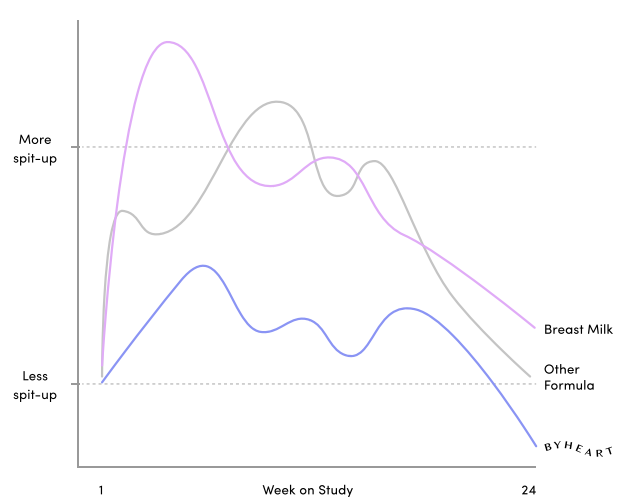
## Here's What We Learned

Softer stools



\*Statistically significant difference between the formula groups

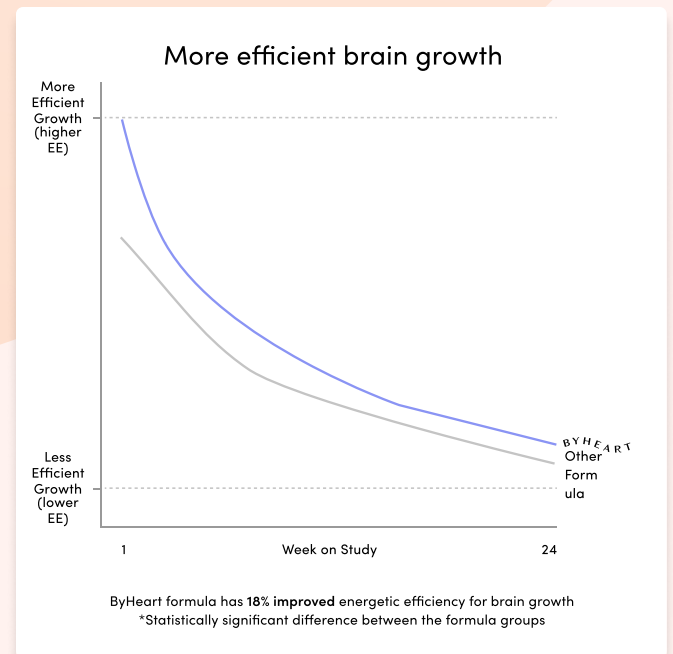
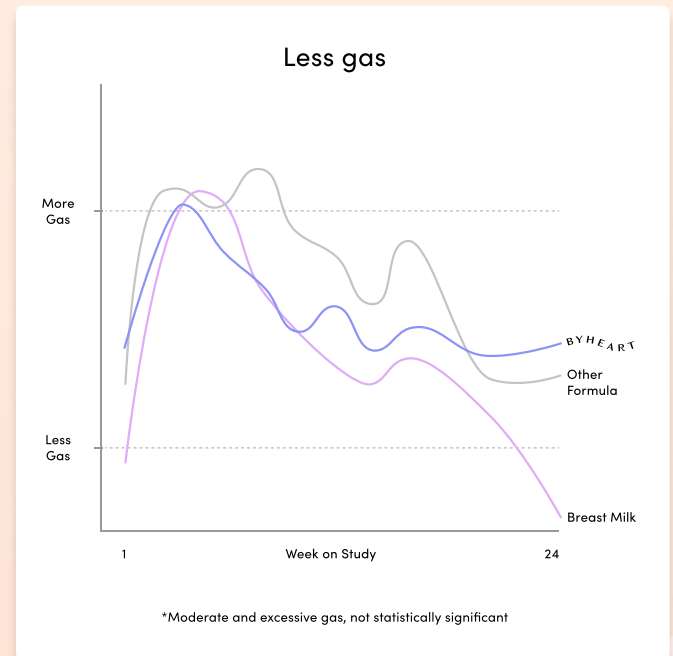
Less spit-up



\*Statistically significant difference between the formula groups

- Multiple clinical trials have shown that adding GOS to infant formula results in softer stool consistency, more similar to breast fed infants.
- Whole milk has more of the triglyceride palmitic acid in the favorable sn-2 position than traditional vegetable oils; improving both fat and calcium absorption resulting in improved stool consistency and bone density. No palm oil for added fat: formulas with palm oil result in harder stool consistency and alterations in bone mineralization.

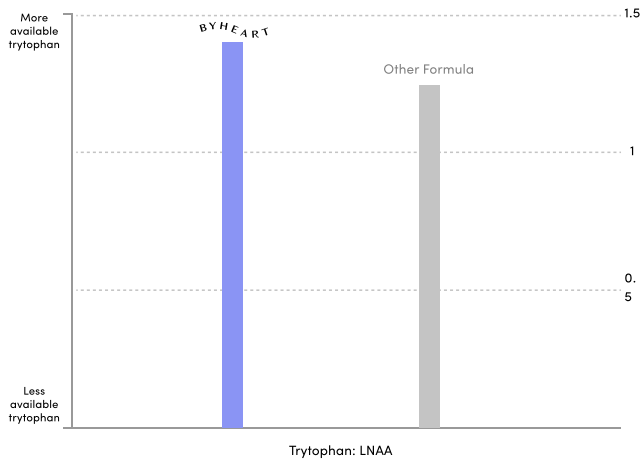
- Multiple studies show that the addition of hydrolyzed protein or alpha-lactalbumin to infant formula reduces spit up in babies.
- Gastric emptying of whey protein is faster than casein.



- When it comes to protein, it's all about quality, not quantity. Energetic efficiency (EE) is a measure of the impact of macronutrient components on growth. Our clinical trial showed that the high-quality ingredients in our formula resulted in an energetic efficiency that was 14% higher, which allowed for babies to grow normally while consuming less formula.
- EE per oz of formula was 14% for weight and 13% for length.

- The organic grass-fed milk in our formula supplies more of the fats that support brain development, like cholesterol and sphingomyelin.
- EE per oz of formula was 18% for head circumference.

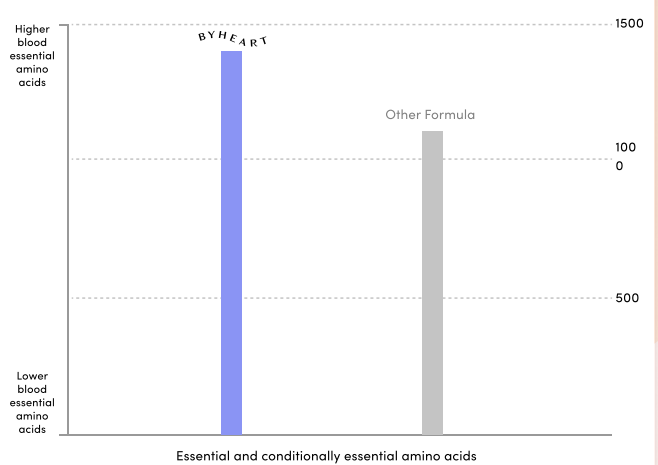
### Faster to sleep



\*More available tryptophan. Statistically significant difference between the formula groups. A higher Tryp: LNAA ratio has been shown to result in shorter sleep latency (faster to enter sleep) compared to lower ratios.

\*\*Statistically significant difference between the formula groups

### Enhanced nutrient absorption



\*Statistically significant difference between the formula groups

- Alpha-lac is high in tryptophan, the precursor to serotonin. Higher amounts of available tryptophan have been shown to help baby drift off to sleep faster.

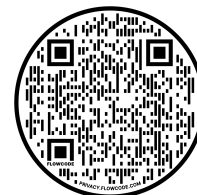
- Alpha-lactalbumin is known for its high proportion of essential and conditionally essential amino acids, and particularly as a source of tryptophan, typically the most limiting amino acid for infant growth.

## Key Learnings

Based on advances in breast milk research, our formula is functional, clean, and gets closer to breast milk with clinical outcomes that prove its high-quality ingredients drive efficient growth and easy digestion.

### JOIN THE BETTER FOR BABIES NETWORK

Help us transform infant nutrition and ensure that access to quality nutrition and education is possible for more physicians and more families. Join our medical community for exclusive events with fellow experts, first access to infant nutrition education programs, opportunities to get involved with our research, and more.



## We're Continuing to Study Nutrition in Infants

We want to continue to evolve our science and investigate early nutrition biomarkers for long term outcomes—and we would love your help. We're currently accepting new participants to our long term study on babies' health. Get in touch to learn more, by emailing [medical@byheart.com](mailto:medical@byheart.com).

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