

## Prebiotics

*Why are we seeing more and more infant formulas with all kinds of things added to them, such as probiotics, prebiotics, and omega 3's? Are these additions really necessary or is it just an excuse for formulas to become more expensive?*

Whenever infant formula manufacturers add new products, it is usually done with the motive of becoming closer and closer to breast milk. All formula companies, however, know that they never even get close enough or similar to breast milk. There is still no doubt that breastfeeding is the absolute ideal.

Interestingly, when one looks at the percentage of mothers who breastfeed after they give birth, the percentages vary quite a bit by region - from as high as 96-98% in Alberta to as low as 86% in Eastern Canada. But after 6-9 months, the majority of mothers introduce infant formulas. An increasing number of parents have a harder and harder time to decide which formula is the best.

In 2002, one company introduced omega-3 and omega-6 fatty acids (DHA and ARA) into infant formula for the first time in Canada. Most, but not all, other companies in Canada have since followed suit because of the research that supports the role of these fatty acids in helping to optimize a growing baby's brain, eye, and immune development.

Within the next few weeks, we will be seeing a brand new baby formula, manufactured by another company. This company intentionally chose the addition of prebiotics instead of probiotics. There is an ongoing, unresolved debate as to which one is better: probiotics or prebiotics.

Probiotics are live micro-organisms (also called "good bacteria" by some) which may assist in modifying allergies, strengthening the immune system, and helping the baby develop healthy bacteria in the colon. Prebiotics, also found in breast milk, are carbohydrates (also known as oligosaccharides, inulin, or polydextrose). These carbohydrates are not digested when passing through the stomach. Instead, they move down into the colon where they are fermented by already present bacteria. The result is the production of more good bacteria such as lactobacillus and bifidobacteria.

This process of colonizing the large bowel with good bacteria has major implications for the baby's health. The right amount of colonization - especially early in life - potentially reduces the risk of allergies, infections, and an immune system that may attack itself (i.e., autoimmune diseases).

The motive for adding prebiotics to a formula is that breast milk contains hundreds of these prebiotic types - as much as over 200 different types of carbohydrates and oligosaccharides. It is thought that the prebiotics in breast milk play a role in protecting the infant against bowel infections. The bowel makes up 70% of the body's immune function, and the more good bacteria that live in the colon, the better the immunity.

What makes the launch of a new formula next month newsworthy is that it will be the first formula in Canada that has two key types of prebiotics known as Galactooligosaccharide and Polydextrose. But does this matter? Research suggests that the combination of these two prebiotics makes a difference in terms of babies having softer stools - similar to breastfed babies - and helping with the production of good bacteria, such as bifidobacteria and lactobacillus. Having more of the latter bacteria in the colon may help with protecting the baby against infections.

Understandably, whenever something new is added to formulas, it must be tightly regulated. Health Canada ensures that this happens. With at least 15 years of rigorously reviewed data on the health benefits of prebiotics, Health Canada determined that prebiotic additions are safe.

Ongoing research keeps track of potential side effects. Thus far, there are none. The growth of babies exposed to prebiotics has not been affected negatively; the absorption of other nutrients, such as calcium, remains unaffected; and thus far the only side effect of note has been occasional diarrhea.

Some doctors are very convinced of the benefits shown by numerous research papers and will encourage their patients to use formulas with added pre- or probiotics. Others are waiting for more data before they make such recommendations.

European countries have a much longer experience with probiotics added to formulas and other dairy products compared to North America. The European experience with probiotics added to formulas seems to be positive thus far and similar to research done in North America.

What does all of this mean to a parent who has to make tough choices, often causing fear of not doing what is best for the baby? At this point, there is compelling research to suggest possible benefits. But we are still not in a place where it has been definitively shown that either prebiotic or probiotic containing formulas should become the standard of care. The cost of these formulas is also a consideration, as it is indeed higher than formulas which do not contain either pre- or probiotics.

Both the Canadian Pediatric Society and the American Academy of Pediatrics do not have an official position statement on this topic. At the time of this writing, their respective nutrition committees have not indicated that they plan to come up with official statements.

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