



We know that breastmilk is best.
What are the real 'GEMS' of breastmilk?



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Growth and Development with Human Milk

- Human milk is easy to digest and is bioavailable which means it is easier for absorption into the body's system.
- Babies given human milk have less weight gain during the 1st year than a baby who is formula fed.
- Babies who receive human milk have less obesity.





Immune Response

- Breastmilk helps to develop the infants own immune system more quickly.
- A baby getting breastmilk has a better response to their vaccinations.
- Breastmilk contains anti-inflammatory factors that regulate the response of the immune system against infection.
- Fewer overall illnesses with a stronger immune system.



Cholesterol

- Exposing the body to cholesterol in infancy allows the body to learn how to regulate this throughout their lifetime.
- Breastmilk contains cholesterol and formula does not.
- Cholesterol is important for brain development.
- As they become adults, they have lower cholesterol levels.



Carbohydrates

- Breastmilk has 37% carbohydrates.
(Formula has less than 10% lactose).
- The carbohydrates in breastmilk are called lactose.
- Lactose converts to lactic acid making the stomach acidic which is needed for digestion.
- This process prevents the growth of harmful bacteria.



The Proteins In Breastmilk are called Casein and Whey

Casein is a milk protein that forms the curd portion with essential amino acids.

Whey is the remaining protein is a clear fluid left behind.

Proteins



- Breastmilk is 60-80% whey protein.
 - Whey is easier to digest and absorb.
- Most formula has 80% casein.
 - Casein is harder to absorb and digestion is slower.
- * The formula developers try to correct this by including additives with emulsifiers to help break down the casein.
 - This is an added product that is *not* in breastmilk.

Breastmilk contains IgA-immune globulin A

- IgA wards off disease without causing inflammation to delicate mucous membranes. Especially in the preemie
- Newborns don't begin to make this immune factor for several weeks or even months after birth





Breastmilk helps prevent:

- Celiac
- Disease Type 1 and 2 Diabetes
- Crohn's Disease
- Childhood Cancer
- Asthma and Allergic Disease
- If nursing a girl = 25% less chance that she will develop breast cancer in her lifetime



Minerals

- Breastmilk contains the *perfect* balance of minerals for the baby.
- Artificial minerals found in formula remain mostly unabsorbed.
 - Accumulate in the gut
 - Change the balance of the gut - allowing harmful bacteria to grow



Iron



- The baby absorbs 50-75% of iron in breastmilk
 - Iron in breastmilk is "bioavailable" – the baby's body recognizes it as something their body needs.
- The baby only absorbs 5-10% of iron in formula
 - To compensate for this, much more iron is added to formula making it harder to digest the formula.



Hormones

- There are nearly **20** different hormones identified in breastmilk.
- These hormones contribute to a biochemical balance and a well being for the baby preventing obesity.
 - *No human hormones in formula.* Scientist have tried adding artificial hormones however the baby's body does not absorb them. The artificial hormones are made inactive in the baby's digestive process.



These hormones present in Breastmilk help prevent obesity

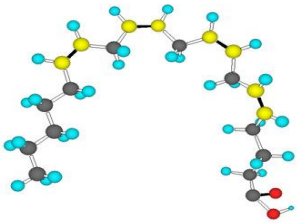
- Leptin
- Adiponectin
- IGF-I
- Obestatin
- Ghrelin

*None found in formula

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The Fatty Acids In Breastmilk Are:

- Higher in medium-chain fatty acids (Lauric Acid)
 - Fatty acids coat the myelin membrane sheath of the nerve endings.



Higher in long-chain fatty acids (Linoleic Acid)

- Benefit appropriate weight gain with more absorption and less distress on the GI system
- *Essential fatty acids cannot be synthesized. They must be consumed.



- These are just a few of the “gems” of breastmilk.
- The list goes on and on of all the benefits of breastmilk
- So congratulations for giving your baby the best start in life!



Bibliography

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