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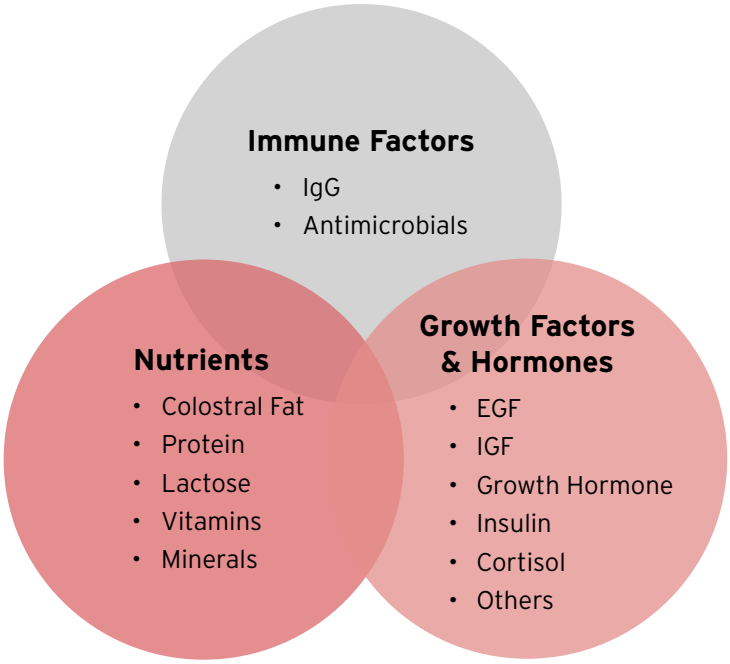
SCIENCE ◆ NATURE ◆ CARE

# THERE'S MORE TO COLOSTRUM THAN JUST IgG

## Only natural colostrum replacers provide newborns with the immunity, energy, and other critical ingredients required within hours after birth.

Colostrum is a complex biological liquid that contains a large number of immunological as well as non-immunological ingredients that are important in getting newborns off to a good start. These are often categorized as immune factors, nutrients, and growth factors & hormones.




While the main function of colostrum is to transfer immunity from a dam to her offspring in the form of immunoglobulins (Igs) or antibodies, many other factors are transferred at the same time.

In addition to immunoglobulins, the immune factors include several molecules that are antimicrobials such as lactoferrin, lysozyme, and lactoperoxidase. Through different mechanisms these molecules contribute to the healthy operation of local immune functionality which exists to battle typical viruses and bacteria like E. coli.

The most important nutrient is colostral fat, which has a number of functions. Firstly, it provides a unique source of energy that allows neonates to maintain their body temperature. About 5% of the total fat in a neonate's body is "brown fat," a special type of fat that metabolizes colostral fat to produce energy in the form of heat. Since newborns, especially those that have had a difficult birth and those exposed to cold, wet, or windy weather, are at risk of becoming hypothermic, colostral fat is their main defence against it. This is particularly important in small ruminants such as sheep and goats. Secondly, colostral fat has also been shown to protect against E. coli and rotavirus, two common causes of neonatal diarrhea. Thirdly, it also carries the fat soluble vitamins A, D, E and K. Finally, ingestion of colostral fat initiates fat metabolism pathways in the liver that are important for long term growth. Colostrum also contains proteins, lactose, and a range of vitamins and minerals that are important for neonatal health and growth.

Finally, colostrum contains a number of important hormones as well as growth factors, so named because they stimulate the growth of cells in a variety of tissues. For example, epidermal growth factor (EGF) and insulin-like growth factors I and II (IGF-I & II) cause cells lining the gut to replicate. This results in increased size of the intestinal villi that are the site of nutrient absorption. Therefore they are important in development of the intestines and also in repairing them following certain types of neonatal diarrhea. A variety of hormones stimulate and regulate the growth of other tissues and organs.

In summary, it can be said that colostrum is much more than immunoglobulins. Many of the components act in concert so that colostrum is more than the sum of its individual parts. It is also important that the different ingredients be present in their natural ratios to one another, which is why colostrum replacers should be made from natural colostrum.

Alta

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