

Aeroflow Breastpumps

Health Benefits of Breastfeeding for Baby

Breast milk is the ideal food for infants and young children. It not only provides essential nutrients, but it also contains special ingredients that help your baby grow and stay healthy. By breastfeeding, you're giving your child the best start in life. This guide explains the amazing benefits of breastfeeding and highlights that it's more than just food - it's a key part of your baby's health and development.

In the chart below, you'll see carbohydrates, proteins, fats, and water - all the things you'd expect to see in food. But you will also see the biological components of breast milk - hormones, growth factors, antibodies to protect against infection, and so much more!

DID YOU EVER WONDER WHAT'S IN... ?

BREASTMILK

WATER

CARBOHYDRATES (energy source)
Lactose
Oligosaccharides (see below)

CARBOXYLIC ACID

Alpha hydroxy acid
Lactic acid

PROTEINS

(building muscles and bones)
Whey protein

Alpha-lactalbumin
HAMLET (Human Alpha Lactalbumin Made Lethal to Tumour cells)

Lactoferrin
Many antimicrobial factors (see below)

Caselin
Serum albumin

NON-PROTEIN NITROGENS

Creatine
Creatinine

Urea
Uric acid

Peptides (see below)
Amino Acids (the building blocks of proteins)

Alanine
Arginine
Aspartate
Cysteine
Glutamate
Histidine
Isoleucine
Leucine
Lysine
Methionine
Phenylalanine
Proline
Serine
Taurine
Threonine
Tryptophan
Tyrosine
Valine

Carnitine (amino acid compound necessary to make use of fatty acids as an energy source)

Nucleotides (chemical compounds that are the structural units of RNA and DNA)

5'-Adenosine monophosphate (5'-AMP)

3',5'-Cyclic adenosine monophosphate (3',5'-cyclic AMP)

3'-Cytidine monophosphate (3'-CMP)

Cytidine diphosphate choline (CDP choline)

Guanosine diphosphate (UDP)

Guanosine diphosphate - mannose (3'-UMP)

5'-Uridine monophosphate (5'-UMP)

Uridine diphosphate (UDP)

Uridine diphosphate heose (UDPH)

Uridine diphosphate-N-acetyl-hexosamine (UDPNAH)

Uridine diphosphogluconic acid (UDPGA)

Several more novel nucleotides of the UDP type

FATS

Triglycerides
Long-chain polyunsaturated fatty acids

Docosahexaenoic acid (DHA) (important for brain development)

Arachidonic acid (AAH) (important for brain development)

Vitamin C
Vitamin D
Vitamin E
Vitamin K

Free Fatty Acids
Monounsaturated fatty acids

Oleic acid
Palmitic acid
Heptadecenoic acid

Saturated fatty acids
Siseric
Palmitic acid
Lauroic acid
Myristic acid

Phospholipids
Phosphatidylcholine
Phosphatidylethanolamine
Phosphatidylserine
Lysophosphatidylethanolamine
Plasmalogens

Sphingolipids
Sphingomyelin
Gangliosides

GM1
GM2
GM3
Glucosylceramide
Glycosphingolipids
Galactosylceramide
Lactosylceramide
Globotriaosylceramide (GB3)
GloboSide (GB4)

Sterols
Squalene
Lanosterol
Dimethylsterol
Methosterol
Lathosterol
Desmosterol
Tracylglycerol
Cholesterol
7-dehydrocholesterol
Stigma and campesterol
7-cholesterol
Stigmasterol
β-lathosterol
Vitamin D metabolites
Steroid hormones

VITAMINS

Vitamin A
Beta carotene
Vitamin B6
Vitamin B8 (Inositol)
Vitamin B12
Vitamin C
Vitamin D
Vitamin E
α-Tocopherol
Vitamin K
Thiamine
Riboflavin
Niacin
Folic acid
Pantothenic acid
Biotin

MINERALS

Calcium
Sodium
Sulfur
Zinc
Iron
Copper
Manganese
Iodine
Selenium
Choline
Sulphur
Chromium
Cobalt
Fluorine
Nickel

METAL

Molybdenum (essential element in many enzymes)

GROWTH FACTORS

(aid in the maturation of the intestinal lining)

Cytokines
Interleukin-1β (IL-1β)
IL-2
IL-4
IL-6
IL-8
IL-10
Granulocyte-colony stimulating factor (G-CSF)
Macrophage-colony stimulating factor (M-CSF)
Platelet derived growth factors (PDGF)
Vascular endothelial growth factor (VEGF)
Hepatocyte growth factor-α (HGF-α)
HGF-β
Tumor necrosis factor-α
Interferon-γ
Epithelial growth factor (EGF)
Transforming growth factor-α (TGF-α)
TGF-β1
TGF-β2
Insulin-like growth factor-1 (IGF-1) (also known as somatomedin C)

Insulin-like growth factor-1

Nerve growth factor (NGF)
Erythropoietin

PEPTIDES

(combinations of amino acids)

HMGF I (Human growth factor)
HMGF II
HMGF III
Cholecystokinin (CCK)
β-endorphins
Parathyroid hormone (PTH)
Parathyroid hormone-related peptide (PTHrP)
β-defensin-1
Calcitonin
Gastrin
Motilin
Bombesin (gastric releasing peptide, also known as neuromedin B)
Neurotensin
Somatostatin

HORMONES

(chemical messengers that carry signals from one cell, or group of cells, to another via the blood)

Cortisol
Triiodothyronine (T3)
Thyroxine (T4)
Thyroid stimulating hormone (TSH) (also known as thyrotropin)
Thyroid releasing hormone (TRH)
Prolactin
Oxytocin
Insulin
Corticotropin
Thrombopoietin
Gonadotropin-releasing hormone (GnRH)
GnRH
Leptin (aids in regulation of food intake)
Ghrelin (aids in regulation of food intake)
Adiponectin
Feedback inhibitor of lactation (FIL)
Eicosanoids
Prostaglandins (enzymatically derived from fatty acids)
PG-E1
PG-E2
PG-F2
Leukotrienes
Thromboxanes
Prostanolins

ENZYMES

(catalysts that support chemical reactions in the body)

Amylase
Arylsulfatase
Catalase
Histaminase
Lipase
Lysozyme
PAP-acetylcholinesterase
Phosphatase
Xanthine oxidase

ANTI-PROTEASES

(thought to bind themselves to macromolecules such as enzymes and as a result prevent allergic and anaphylactic reactions)

α-1-antitrypsin
α-1-antichymotrypsin

ANTIMICROBIAL FACTORS

(are used by the immune system to identify and neutralize foreign objects, such as bacteria and viruses.)

Leukocytes (white blood cells)
Phagocytes
Bacophils
Neutrophils
Eosinophils
Macrophages
Lymphocytes (also known as B cells)
T lymphocytes (also known as C cells)
sIgA (Secretory immunoglobulin A) (the most important antinefactive factor)

FORMULA

WATER

CARBOHYDRATES
Lactose
Corn maltodextrin

PROTEIN

Partially hydrolyzed reduced minerals whey protein concentrate (from cows' milk)

FATS

Palm olein
Soybean oil
Coconut oil
High oleic safflower oil (or sunflower oil)
M. alpina oil (Fungal DHA)
Cotton oil (Algal ARA)

MINERALS

Potassium citrate
Potassium phosphate
Calcium chloride
Tricalcium phosphate
Sodium citrate
Magnesium chloride
Ferrous sulphate
Zinc sulphate
Sodium chloride
Copper sulphate
Potassium iodide
Manganese sulphate
Sodium selenate

VITAMINS

Sodium ascorbate
Inositol
Choline bitartrate
Alpha-tocopheryl acetate
Nicotinamide
Calcium pantothenate
Riboflavin
Vitamin A acetate
Pyridoxine hydrochloride
Thiamine mononitrate
Folic acid
Phylloquinone
Biotin
Vitamin D3
Vitamin B12

ENZYME

Trypsin

AMINO ACID

Taurine
L-Carnitine (a combination of two different amino acids)

NUCLEOTIDES

Cytidine 5'-monophosphate
Disodium uridine 5'-monophosphate
Adenosine 5'-monophosphate
Disodium guanosine 5'-monophosphate
Soy Lecithin



Developed as a student project for the breastfeeding course for Health Care Providers, Douglas College, New Westminster, BC, Canada - © 2007 by Cecily Heslett, Sherri Hedberg and Haley Rumble.

What's even more amazing is that YOUR milk is tailored to YOUR baby. The composition of your breast milk changes over the course of a single feeding, from day to night, and throughout your breastfeeding journey to meet your child's needs as they grow. Research continues to discover new ways that the components of breast milk benefit infants. Here are just a few:

- Hormones in breast milk stimulate normal infant appetite and sleep cycles.
- Your baby is born with an immature immune system compared to an adult. During breastfeeding, your immune system can communicate with your baby's immune system to compensate for that weakness. You pass infection-fighting living cells to your baby through your milk, as well as antibodies to protect your baby against germs and diseases you have been exposed to.
- Breastfeeding gets your baby's microbiome off to the best start. Your milk contains over 130 different human milk oligosaccharides (HMOs). These sugars primarily feed the beneficial bacteria in your baby's gut and help to protect their gastrointestinal tract in many ways.

And it's not just about the milk...

- Your baby suckling at the breast releases oxytocin, a hormone that promotes mother-child bonding and reduces stress for both mom and baby.
- Breastfeeding also helps shape your baby's face and jaw, reducing the risk of dental problems such as malocclusion (poor alignment of the jaw and teeth).

Breastfed babies have a lower risk of many diseases and conditions, including:

- SIDS
- Infant mortality
- Neonatal mortality
- Lower respiratory tracts infections
- Ear infections
- Crohn's disease
- Ulcerative colitis
- Childhood obesity
- Leukemia
- Asthma
- Eczema
- Type 1 & Type 2 diabetes
- Reduced risk of Necrotizing Enterocolitis in Preterm babies fed exclusively human milk
- Improved cognitive development

Research shows that the longer a baby is breastfed, the greater the protective benefits they receive. Breastfeeding offers numerous advantages for your child's health and development, providing a special opportunity to nurture your baby while strengthening their immune system and supporting long-term well-being. Every drop of breast milk counts - whether you breastfeed for a few weeks or a year (or more), you are giving your baby a valuable start in life.

What If I Have Questions?

If you are interested in learning more, these Aeroflow classes expands on some of the topics discussed above:

- Ultimate Breastfeeding Prep
- Pumping 101
- Lactation Q&A

To register for this class, log into your portal or click [here](#).

Want More Info?

For a directory of Aeroflow's other Care Guides offering information on pregnancy, baby care, and more, browse our comprehensive list of titles:

<https://www.hersourcehealth.com/aeroflow-care-guides/>

References:

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