Colostrum

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Many clinical studies have explored the numerous health benefits of colostrum, a substance that can recharge the immune system and destroy bacteria, viruses and fungi; speed the healing of all body tissues; enhance weight loss by burning fat and increasing bone and lean muscle mass; and even slow and possibly reverse the aging process. Clinical studies have been conducted around the world researching colostrum's beneficial effects on a wide range of diseases, including AIDS/HIV, allergies, autoimmune disorders, cancer, colds and flus, diabetes, gastrointestinal complaints, gingivitis, heart disease, herpes, and bacterial, viral and parasitic infections, to name a few.[1-6]

Colostrum is provided by the mammary glands of mammals (including humans) during the first 24 to 48 hours following birth. Colostrum contains essential immune factors that are vital to a newborn's underdeveloped immune system, as well as certain growth factors to ensure proper development of all body cells. Important substances in colostrum also promote the development of bifidobacteria colonies, which create an environment within the body that is inhospitable for harmful bacteria. In general, colostrum provides an infant with protection against infection and allergens, signals the brain to regulate digestion, helps the stomach and digestive tract to mature, and supplies a unique array of high-energy nutrients to facilitate healthy development of the brain and nervous system.[1-4,7-9]

Before the introduction of sulfa drugs and penicillin, conventional medical doctors were "enthusiastic" about utilizing colostrum as an antibiotic. In addition, during the 1950's, colostrum was used for the treatment of rheumatoid arthritis; that is, until the wide-spread use of corticosteroids to treat inflammation became standard protocol. Interestingly, Dr. Albert Sabin, who developed the polio vaccine, discovered that colostrum provided antibodies against polio and recommended its use with children susceptible to infection. Furthermore, Ayurvedic physicians have used colostrum for medicinal purposes for thousands of years.[1-4]

Researchers conducting laboratory analysis of immune and growth factors in bovine (cow) colostrum have found that they are identical to the substances provided in human colostrum. However, bovine colostrum contains significantly higher levels of many of these nutrients. For example, human colostrum provides 2% of IgG (the most important immunoglobulin (antibody) in the body), while bovine colostrum provides 86% of IgG. In addition, bovine colostrum provides a special hormone that prevents the calf from developing a sensitivity to its mother's immune factors. Research indicates that bovine colostrum is biologically transferable to all mammals, including humans, which benefit from its immune-enhancing properties with no reported allergic or anaphylactic reactions thus far. Research has also confirmed that substantial amounts of orally-ingested bovine colostrum concentrate survive passage through the stomach to remain intact and active in the lower portions of the bowel.[1-4,10,11]

Colostrum provides 2 major types of nutrients: immune factors and growth factors. Many pharmaceutical companies have endeavored to genetically engineer, patent and market several of these individual substances. In turn, conventional medical specialists utilize many colostrum components—interferon, gamma globulin, growth hormone, IgF-1 and protease inhibitors—in the treatment of autoimmune disorders, cancer and chronic viral infections such as HIV.[1-4,11]

Colostrum contains 37 different immune factors that are essential for the healthy development and maintenance of immune functions, including:

Immunoglobulins (A, D, E, G and M) effectively neutralize bacteria, viruses, yeast and toxins in the lymph and circulatory systems—IgM destroys bacteria, IgG neutralizes toxins, while IgD and IgE are highly antiviral

Lactoferrin is an iron-binding protein providing antibacterial, antiviral and anti-inflammatory properties, as well as therapeutic effects against *Candida albicans*, cancer, chronic fatigue syndrome, cytomegalovirus, herpes, HIV and other infections; it also facilitates iron absorption and promotes the growth of bifidobacterium

Proline-rich polypeptide (PRP) is a hormone that regulates the thymus gland, stimulating under-active immune function and lowering an over-active immune system, thus helping autoimmune disorders such as lupus, multiple sclerosis (MS), rheumatoid arthritis, scleroderma, etc.

Trypsin and *protease inhibitors* protect colostrum immune and growth factors from being destroyed in the

gastrointestinal tract, and prevent *H. pylori* bacterium from attaching to the stomach walls, thus inhibiting peptic ulcers

Oligo polysaccharides and *glycoconjugates* attract and attach to pathogens (disease-causing organisms) such as cholera, clostridium, cryptosporidia, difficile toxins A & B, entamoeba, *E. coli*, giardia, salmonella, shigella and strep (including *S. pneumonococci*), thereby preventing them from adhering to or entering the mucous membranes; these components also act as growth promoters for beneficial microflora

Cytokines are interleukins that regulate immune responses and increase T-cell activity and the production of immunoglobulins—Interleukin-10 is a powerful anti-inflammatory that is especially beneficial for treating arthritis, while interferon and lymphokines are among the most researched protocols for the cure for cancer.[1-5,9-17]

Colostrum has been shown to benefit over 60 known immune and autoimmune disorders, including Addison's disease, AIDS, allergies, arthritis, asthma, bacterial infections, chronic fatigue syndrome, candidiasis, Crohn's disease, cystic fibrosis, endometriosis, fibromyalgia, Grave's disease and Hashimoto's thyroiditis, Lupus erythematosus, multiple sclerosis, Myasthenia gravis, parasites, pernicious anemia, rheumatoid arthritis, and more. In addition, recent research indicates that supplementation with bovine colostrum can reduce acute gastrointestinal injury associated with the use of non-steroidal anti-inflammatory drugs (NSAIDs). Results also suggest that colostrum may be of value in the treatment of other ulcerative conditions of the bowel.[1,3,4,6,13,18-24]

Growth factors in colostrum have been shown to increase cell and tissue growth by stimulating DNA/RNA formation. Research shows that colostrum growth factors can enhance levels of T-cells, speed the healing process, balance blood sugar levels and decrease insulin dependence, enhance muscle and bone growth and repair, and even burn fat. Growth factors in colostrum have also been shown to promote the repair and regeneration of the heart muscle and the regeneration of new blood vessels, thus helping to prevent and reverse heart disease. Specific growth factors found in colostrum include insulin-like growth factor-I and II (IgF-1 and IgF-II), epithelial growth factor (EgF), growth hormone (GH), as well as others. In fact, bovine colostrum provides one of the highest concentrations of IgF-1 found in nature.[1-5,11,25,26]

Colostrum's source of IgF-1 may prove helpful to those wanting to lose weight. The body requires IgF-1 in order to break down fat for energy through the Kreb's cycle—an important metabolic system that creates roughly 90% of the body's energy by oxidizing amino acids, fatty acids and carbohydrates. Unfortunately, the body produces less IgF-1 with age. Insufficient IgF-1 levels are linked with a higher incidence of Type II diabetes and an increased difficulty in losing weight, despite a healthy nutrition and exercise regimen. Thus, colostrum supplementation may help raise the body's levels of IgF-1 enough to stimulate increased fat metabolism. Furthermore, colostrum's rich source of growth factors have been shown to inhibit the breakdown of protein and stimulate protein synthesis, which may prove to have an anabolic (muscle-building) effect.[1-5,11,26-28]

In healthy individuals, colostrum can help maintain well-being and vitality. Colostrum provides a rich source of nutrients, improves digestion and cellular metabolism, increases endurance and speeds recovery time after exercise, and encourages lean muscle growth and fat metabolism. For example, a recent double-blind, randomized, placebo-controlled study found that colostrum supplementation significantly improved the sprint performance of healthy elite field hockey players, compared to whey protein. Furthermore, colostrum may even help reverse signs of aging. According to Dr. David Hurley, PhD, Associate Professor of Microbiology and member of the Infectious Disease Research Cluster, protection against infectious agents, systemic immune enhancement, and improved overall health and healing of the body are benefits available to anyone using colostrum as a dietary supplement, especially the young and elderly.[1,3-5,29-30]

Organically-produced, powdered or encapsulated powder supplements are considered superior over colostrum liquid or tablets, due to processing methods used to manufacture the latter. High-quality colostrum supplements should not include fat, whey or lactose, and should be certified free of pathogenic microorganisms, antibiotics, pesticides, herbicides, and steroids and synthetic hormones such as rBST (growth hormone shots for cattle).[1-3,5]

Adults with serious immune system disorders are often prescribed 1,000 to 2,000mg of colostrum to be taken twice daily on an empty stomach with 8-12 ounces of water. Although preventive doses have not been established, individuals may want to begin supplementation with 500mg per day, gradually increasing the dosage if desired. Children's dosages should be proportionately less. Herxheimer reactions (primarily flu-like symptoms) can occur in approximately 40% of individuals, as part of the body's natural healing response—symptoms typically disappear within 3-5 days with continued use at the same dosage level. Furthermore, after hundreds of years of use and over 1,000 clinical studies, colostrum has been shown to be completely safe, providing no drug interactions or side

effects at any level of ingestion.[1,2,4]

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