



## Colostrum and Crohn's disease

**Dear consumer,**

Your question about colostrum and Crohn's disease has been forwarded to me. I am a business and technology consultant with extensive knowledge about the formation of colostrum and its applications in humans and animals.

Idiopathic inflammatory bowel disease consists of Crohn's disease and ulcerative colitis. Crohn's disease can affect any part of the gastrointestinal tract, from the mouth to the anus, and is known as regional enteritis, terminal ileitis, or granulomatous colitis. Ulcerative colitis is limited to the colon and rectal involvement is present 95% of the time. It has long been known that the development of Crohn's disease somehow involves infection with Mycobacterium paratuberculosis, a relative of the bacterium that causes tuberculosis. Researchers originally believed that it was the primary cause of the disease, but now recognize that there are autoimmune manifestations associated with the disease and know that disease development is much more complicated than originally believed. There are many different levels of disease manifestation, but most people with the disease experience gastrointestinal distress due to bowel inflammation, persistent diarrhea and wasting associated with diminished nutritional uptake. These individuals are also much more susceptible than normal to enteric (gut) infections.

Routine utilization of very high quality bovine colostrum, such as that distributed by Immune-Tree, would be very advantageous to affected individuals for a number of reasons.

1. Insulin-like growth factor-1 (IGF-1) is a hormone-like substance found in colostrum. IGF-1 is the triggering substance for a whole superfamily of 87 proteins that control most of the processes in every cell in the body. One of the major functions is regulation of the metabolic pathway by which the body converts glucose (sugar) to glycogen. Glycogen is stored in the muscles and the liver and is the main source of energy when the muscles are exercised. Another major function of IGF-1 and the superfamily is regulating how cells use amino acids to build proteins. Having sufficient IGF-1 available is extremely important in metabolically compromised individuals and is essential to reversing the wasting aspects of the disease.

2. Another function of the IGF superfamily is the repair of damaged cells. Most of the proteins in the superfamily are present in almost every cell in the body, but require activation and direction by the attachment of IGF-1 to specific sites on a cell's surface. Again, having sufficient IGF-1 available is critical to affect cell repair.

3. Colostrum also contains a number of gut protective factors that can act in concert to control enteric infections. Some of the most important ones are:

- a) The IgA immunoglobulins directed against various bacteria and viruses, like E. coli, Staph. aureus, etc., that can attack the gut and, more particularly, weakened tissue. IgA will not only attach itself to a

microorganism, but can also attach itself to tissue and immobilize the invading agent, letting other factors act to destroy it.

b) Lactoferrin and transferrin are iron-binding proteins. Certain bacteria and some viruses that invade the gut require iron to reproduce and, when this substance is withheld, they will die.

c) Lysozyme and lactoperoxidase are powerful enzymes that can attach to bacteria and eat holes through their outer wall.

4. One of the problems is making sure that a substantial portion of these biologically active substances gets through the stomach and into the intestines where they are needed. This is accomplished by using complete first milking colostrum that contains all of the fat and casein, like the colostrum products distributed by Immune-Tree. Although some manufacturers say that the fat and casein have no role in colostrum, that is utter nonsense. The human stomach contains an enzyme, rennin, that is also found in bovines and other species. Rennin acts on the fat and casein in dairy products to form a soft cheese-like curd that protects the biologically active substances against the enzymes and acid environment of the stomach, allowing the substances to either pass through within the curd as it disintegrates and/or to be absorbed into the circulation.

To your good health - always.

Sincerely,  
**Alfred E. Fox, Ph.D.**

*Dr. Alfred E. Fox holds a Ph.D. from Rutgers University in Microbiology (Immunochemistry) and has more than 25 years of senior management experience at Carter-Wallace, Baxter Dade Division and Warner-Lambert, where he was responsible for research and development and regulatory affairs. He was also the founder and president of two biotechnology companies focused on agribusiness and environmental monitoring, respectively. For the past 15 years, Dr. Fox has been the President of Fox Associates, a business and technology consulting firm serving small- to mid-size companies in the human and animal healthcare fields. He focuses primarily on marketing and regulatory issues and for the past 10 years has continuously consulted to bovine colostrum manufacturers, where he has gained regulatory approval for their products, been a technical advisor, helped design and develop marketing strategies and served as an expert witness in legal matters.*