Colostrum and Hemochromatosis

Dear consumer,

Your inquiry regarding hemochromatosis has been forwarded to me.
I am a business and technology consultant with extensive knowledge regarding the formation of bovine colostrum and its human and animal applications, including its use in diverse medical conditions.

Hemochromatosis is a condition in which the body accumulates excess amounts of iron. It is one of the most common hereditary diseases in humans and it is estimated that as many as one million Americans have the disease and up to one in every ten people carry the gene for the disorder. Symptoms of hemochromatosis most often appear in middle age, although some people may develop symptoms earlier. The most common early symptoms of the disease include fatigue, heart palpitations, joint pain, non-specific stomach pain, impotence and loss of menstrual periods. Later disease symptoms include gray or bronze skin pigmentation, joint disease, chronic abdominal pain, severe fatigue and other, more serious complications.

The degree of organ damage from iron overload when the condition is first diagnosed is a major determinant of a person's prognosis. For a person who has no evident tissue or organ damage, proper disease management can result in a normal long-term outcome and life expectancy.

It would not be surprising to me that the inhaling of fumes from fuel and exhaust would accentuate the fatigue and stomach discomfort associated with this condition.

In my opinion, routine dietary supplementation with a high quality first milking colostrum, such as that distributed by Immune-Tree, would be very beneficial to this individual for the following reasons.

1. High quality bovine colostrum contains a substantial quantity of lactoferrin and, to a lesser extent, transferrin. Both of these substances are very efficient binding agents for iron and would, thus, help to capture dietary iron in the gut, preventing it from entering the bloodstream.

2. All hereditary metabolic disorders, such as hemochromatosis, represent a metabolic system that is out of control. Insulin-like growth factor-1 (IGF-1), and its closely related counterpart insulin-like growth factor-2 (IGF-2), are potent hormones that are found in association with almost all cells in the body. IGF-1 is the best described and most potent of this pair. These molecules are produced by all mammals and, in every case, have a very similar chemical structure regardless of the species. IGF-1 is essential for normal cell growth and is an essential factor in maintaining metabolic control.

Scientific knowledge about the IGFs, what they do and how they act on cells in the body has

evolved very rapidly during the past few years. It is now known that there are specific receptors on almost all cells in the body capable of interacting with IGF-1 and triggering a series of chemical events within the cell. There are also 6 different proteins present inside the cell and on cell surfaces that control the actions of IGF-1 on the cell after it binds to a receptor. These are called insulin-like growth factor binding proteins (IGFBPs). In addition, there are at least 87 other related proteins either capable of binding to IGF-1, altering its actions, or influencing the effects of the IGFBPs. These are called insulin-like growth factor binding protein-related proteins (IGFBP-rPs). The entire collection of these proteins is referred to as the insulin-like growth factor binding protein (IGFBP) superfamily. The key event that triggers the effects of any of these proteins appears to be the interaction of IGF-1 with its specific cell-surface receptor, an event that some of these proteins regulate.

The multitude of available IGF-1binding proteins and related proteins available in the cell is indicative of the many potential effects that the binding of IGF-1 to its specific cell-surface receptor can have on cells. To keep these many effects under control, some of the binding proteins act as checks and balances, allowing the secondary chemical switches in a cell to be turned on and then turning them off when it is appropriate. Therefore, IGF-1 is like the captain of a ship. When it binds to its specific receptor, the ship can move forward, but there are all kinds of systems in place to keep it moving at the right speed and in the right direction. The main triggered events include activation of the process by which the cell grows and reproduces itself and maintenance of the metabolic pathways by which the cell converts glucose into glycogen and uses amino acids to create proteins. The actual pathway by which the cell uses glucose and converts it to glycogen is first switched on by the binding of insulin to its specific cell surface receptors. Glycogen is stored in the liver and muscles and is the main source of readily available energy when the muscles are exercised. The IGFBP superfamily also has a direct role in how the cell uses amino acids to build proteins. As we age, the ability of our body to create an adequate supply of IGF-1 is diminished. Thus, by eating a well-balanced diet and maintaining a constant supply of IGF-1 in our body, we can keep the ship moving at the right speed and in the right direction. In addition, as we age the cells in our body do not reproduce themselves as well and, since IGF-1 is a primary factor in the ability of cells to grow and reproduce, it is highly desirable to have an appropriate level of IGF-1 in the circulation through dietary supplementation to limit the ever increasing rate of cell death.

References:

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Lonnerdal B, Iyer S; Lactoferrin, molecular structure and biological function, Ann Rev Nutrition 1995; 13: 93-110.

I hope this answers you question and that you find the information useful.

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.