Intestinal Permeability


Bühler, C., et al. Small intestinal morphology in eight-day-old calves fed colostrum for different durations or only milk replacer and treated with long-R3-insulin-like growth factor I and growth hormone. *Journal of Animal Science* 76:758-765 (1998). The intestines of calves fed colostrum compared to those not fed colostrum revealed that those fed colostrum had significantly increased villus size and crypt depths. This translates into greater surface area and thus increased absorption of nutrients.

Blättler, U, et al. Feeding colostrum, its composition and feeding duration variably modify proliferation and morphology of the intestine and digestive enzyme activities of neonatal calves. *Journal of Nutrition* 131(4):1256-1263 (2001). A similar study done on calves either receiving or not receiving colostrum. This study concentrated on the development and health of the gastrointestinal epithelium and found that the development and health of this epithelium was markedly superior in those receiving colostrum. Colostrum also influenced the production of lipase enzyme by the pancreas.

Bitzan, MM, et al. Inhibition of Helicobacter pylori and Helicobacter mustelae binding to lipid receptors by bovine colostrum. *Journal of Infectious Diseases* 177:955-961 (1998). Bovine colostrum blocked binding of H. pylori (a major cause of chronic gastritis and ulcers in humans) and H. mustelae (a similar pathogen found in ferrets). This is apparently a function of the phosphatidylethanolamine found in colostrum and BIO-lipid.


Gastrointestinal Inflammation and Repair Group, Imperial College, London (2003). Unpublished research. In an in vitro experimental study, colostrum stimulated intestinal cell growth and reestablished a healthy epithelial layer following injury. In an in vivo experimental study, colostrum powder was also shown to reduce gastric injury.

Gluckman, PD, Mellor, DJ. Use of growth factor IGF-I and/or IGF-II. US Patent #5,710,127 (1998). Use of IGF-I or IGF-II to prevent or treat pancreatic disorders and insufficiency. It can promote growth of the pancreas in diseases such as cystic fibrosis or partial/total pancreatectomy where pancreatic tissue is lost.


Katz, KD, Hollander, D. Intestinal mucosal permeability and rheumatological diseases. Bailliere's Clinical Rheumatology 3(2):271-284 (1989). The inability of the intestinal lining to control the influx of antigens into the blood due to leaky gut or a dysfunctional immune system may represent the prime means by which the antigens which cause numerous diseases, including autoimmune diseases. Leaky gut has been linked to patients with ankylosing spondylitis, rheumatoid arthritis, Crohn's disease, and celiac sprue (a genetic autoimmune disease characterized by damage to the small intestine due to eating wheat gluten).


Moller, W, et al. Use of bovine colostral milk as a preparation for the protection of the liver. US Patent #5,710,132 (1998). Whole bovine colostrum or an immunoglobulin preparation from colostrum are used to protect the liver from bacterial, viral or protozoan diseases, such as E. coli, rotavirus or cryptosporidium infection, as well as detoxify the liver by removing toxic protein metabolites such as ammonia. It can also be used to treat the effects of various liver diseases, such as liver inflammation, viral hepatitis, fibrosis of the liver, cirrhosis of the liver, fatty liver, and so forth. These effects include disturbances of the liver's detoxification, excretory, conjugational and synthesizing functions, portal
hypertension due to liver disease, and even coma due to liver failure. Supplementation can also be used to relieve stress on the liver due to liver insufficiency as a result of liver parenchyma damage or viral hepatitis, allowing the liver to heal and recover function.


Playford RJ, Floyd DN, Macdonald CE, Calnan DP, Adenekan RO, Johnson W, Goodlad RA, Marchbank T. Gut. 1999 May;44(5):653-8. Related Articles, Links, Bovine colostrum is a health food supplement which prevents NSAID induced gut damage. University Division of Gastroenterology, Leicester General Hospital, Gwendolen Road, Leicester LE5 4PW, UK.

Pluske, JR, Morel, PCH. Increasing weaner pig productivity in New Zealand pig herds. Factors associated with grower herd performance in three New Zealand pig farms (1999). Piglets fed a liquid supplement with colostrum powder had a marked increase in villi height in the lumen of the small intestine, indicating greater digestion and absorption of nutrients. There were also an increased number of immune cells in the villi, indicating enhanced immune competency.


Vaarla, O. The gut immune system and type 1 diabetes. Annals of the New York Academy of Science 958:39-46 (2002). There is increasing evidence that the gut immune system is important in the development of type 1 (autoimmune) diabetes. One of the causes of type diabetes in children may be too early introduction of cow's milk to the diet in infants, which causes an autoimmune response to insulin.

