What is Leaky Gut Syndrome?
Leaky Gut Syndrome is the name given to a very common health disorder in which the intestinal lining is more permeable than normal. The abnormally large spaces present between the cells of the gut wall allow the entry of toxic material into the bloodstream that would, in healthier circumstances, be repelled and eliminated. The gut becomes “leaky” in the sense that bacteria, viruses, fungi, parasites and their toxins, undigested foods such as proteins, nerve and connective tissue, fat and waste normally not absorbed into the bloodstream in the healthy state, pass through a damaged, hyper-permeable, porous or “leaky” gut. Colostrum is the only substance that can close the holes in the intestinal lining.

When mammals are born, they have a “leaky gut” by design. The gut has not matured at birth, even if full-term, and complete development doesn’t occur until the growth factors and other components in colostrum are ingested. Epithelial growth factor (EGF) is particularly important in closing the holes in the gastrointestinal lining. However, before the holes are closed, larger proteins, such as the immunoglobulins, are able to easily enter the body, thereby achieving passive immunity from the mother.

How is Leaky Gut Syndrome diagnosed?
Leaky Gut Syndrome can be verified by special gut permeability urine tests, microscopic examination of the lining of the intestinal wall as well as the bloodstream with phase contrast or dark field microscopy of living whole blood, and food allergy testing. However, lifestyle examination can provide a quicker and simpler diagnosis. Anyone who experiences food or airborne allergies; has a gastro-intestinal condition such as Irritable Bowel Syndrome, heartburn, Crohn’s disease; or has an autoimmune disease such as fibromyalgia, asthma, arthritis, multiple sclerosis, etc., has Leaky Gut Syndrome.

What causes Leaky Gut Syndrome?
Leaky Gut Syndrome is basically caused by inflammation of the gut lining. This inflammation is usually brought about by the following:

- Antibiotics (lead to the overgrowth of abnormal flora in the gastrointestinal tract - bacteria, parasites, candida, and fungi)
- NSAIDS (non-steroidal anti-inflammatory drugs) such as aspirin, ibuprofen, Vicodin, and other prescription pain medications
- Alcohol and caffeine (strong gut irritants)
- Gluten and other proteins from wheat
- Mold and fungal mycotoxins in stored grains, fruit and refined carbohydrates
- Foods and beverages contaminated by parasites like giardia lamblia, cryptosporidium, blastocystis hominis and others
- Foods and beverages contaminated by bacteria such as helicobacter pylori, klebsiella, citrobacter, pseudomonas and others
- Chemicals in fermented and processed food (dyes, preservatives, peroxidized fats)
- Enzyme deficiencies (e.g. celiac disease, lactase deficiency causing lactose intolerance)
- Prescription corticosteroids (e.g. prednisone)
- Highly refined carbohydrate diet (e.g. candy bars, cookies, cake, soft drinks, white bread)
- Prescription hormones such as birth control pills

Broad spectrum prescription antibiotics are the primary cause of Leaky Gut Syndrome. Antibiotics wipe out all the friendly gut bacteria that otherwise provide protection against fungi and amoebic infections, help the body break down complex foods, and synthesize vitamins such as B12 and biotin. Since this friendly bowel flora is killed off, the body now has no local defense against the parasites or fungi that are normally held in check. This then causes an inflammatory reaction leading to Leaky Gut Syndrome. More recently, antibiotics in the food and water supply have become a concern and a contributing factor in bacteria-resistance (“super bugs”), particularly in non-hospital acquired MRSA.

What does Leaky Gut Syndrome do to the body? Allergies & Autoimmune Conditions
Leaky Gut Syndrome is almost always associated with allergies and autoimmune conditions. Halting and reversing autoimmune diseases depends on healing the lining of the gastrointestinal tract. Any other treatment is just symptom suppression. An autoimmune disease is defined as one in which the immune system makes antibodies against its own tissues. Diseases in this category include rheumatoid arthritis, fibromyalgia, chronic fatigue syndrome, diabetes, lupus, alopecia areata, polymyalgia rheumatica, multiple sclerosis, Sjogren’s syndrome, scleroderma, vitiligo, thyroiditis, vasculitis, Crohn’s disease, ulcerative colitis, urticaria (hives), Alzheimer’s and Reynaud’s disease. Physicians are increasingly recognizing the importance of the gastroin...
testinal tract in the development of allergic or autoim-
mune diseases. Understanding the leaky gut pheno-
non not only helps explain how allergies and
autoimmune diseases develop but also helps develop
safe and effective therapies to bring the body back into
balance.

Due to the enlarged spaces or holes between the
cells of the gut wall, larger than usual protein molecules
are absorbed before they have a chance to be com-
pletely broken down, which otherwise occurs when the
intestinal lining is intact. The immune system begins
treating the protein molecules as if they are foreign, in-
vading substances which must be destroyed. Antibodies
are produced against these previously harmless food
substances.

Human tissues have antigenic sites very similar to
those on foods, bacteria, parasites, candida or fungi. The
antibodies created by the leaky gut phenomenon against
these antigens can get into various tissues and trigger an
inflammatory reaction when the corresponding food is
consumed or the microbe is encountered. Auto antibod-
ies are thus created, and inflammation becomes chronic.
If this inflammation occurs in a joint, autoimmune arthri-
tis (rheumatoid arthritis) develops. If it occurs in the
brain, myalgic encephalomyelitis (a.k.a. chronic fatigue
syndrome) may be the result. If it occurs in the blood
vessels, vasculitis (inflammation of the blood vessels) is
the resulting autoimmune problem. If the antibodies
end up attacking the lining of the gut itself, the result
may be colitis or Crohn’s disease. If it occurs in the lungs,
asthma is triggered on a delayed basis every time the
individual consumes the food which triggered the pro-
duction of the antibodies in the first place. It is easy to
see that practically any organ or body tissue can become
affected by food allergies created by the leaky gut. Sym-
ptoms, especially those seen in conditions such as chronic
fatigue syndrome, can be multiple and severely debili-
tating.

In addition to the creation of food allergies by the
leaky gut, the bloodstream is invaded by bacteria, fungi
and parasites that, in the healthy state, would not pene-
trate the protective barrier of the gut. These microbes
and their toxins, if present in large enough amounts, can
overwhelm the liver’s ability to detoxify. This results in
symptoms such as confusion, memory loss, brain fog or
facial swelling when the individual is exposed to a per-
fume or to cigarette smoke that he or she had no adverse
reactions to prior to the development of Leaky Gut Syn-

Nutrient Deficiencies
Leaky Gut Syndrome also creates a long list of mineral
deficiencies because the various carrier proteins present
in the gastrointestinal tract that are needed to transport
minerals from the intestine to the blood are damaged
by the inflammation process. For example, magnesium
deficiency (low red blood cell magnesium) is quite a
common finding in conditions like fibromyalgia despite
a high magnesium intake through the diet and supple-
mentation. If the carrier protein for magnesium is dam-
aged, magnesium deficiency develops as a result of
mal-absorption. Muscle pain and spasms can occur as a
result. Similarly, zinc deficiency due to mal-absorption
can result in hair loss or baldness as occurs in alopecia
areata. Copper deficiency can occur in an identical way
leading to high blood cholesterol levels and osteoarthritis.
Further, bone problems develop as a result of the
mal-absorption of calcium, boron, silicon and man-

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Irritable Bowel Syndrome
The mainstream thinking on IBS is that it is caused by
stress. Irritable Bowel Syndrome is the number one rea-
son for general practitioner referrals to specialists. In well
over 80% of the cases, tests like the intestinal permeabili-
ty test (a special urine test involving the determination
of absorption rates of two sugars called lactulose and
mannitol), CDSA or live cell dark field microscopy reveal
the presence of an overgrowth of fungi, parasites or
pathogenic bacteria. The one-celled parasite, blastocystis
hominis and different species of candida are the most
common microbes seen in IBS. The only stress associ-
ated with IBS is that which is generated by infection and
the Leaky Gut Syndrome. If allowed to persist without
the correct treatment, IBS can progress into more seri-
ous disorders like the candidiasis syndrome, multiple
chemical sensitivities, Fibromyalgia, chronic fatigue syn-
drome, many autoimmune diseases and even cancer. If
handled medically, IBS is rarely cured. To treat it correctly,
natural treatments work best and must include the re-
moval of the cause, improvement of gastrointestinal
function and healing the lining of the gut.

Heart Disease
The inflammation that causes Leaky Gut Syndrome also
damages the protective coating of antibodies of the im-
munoglobulin IGG and IGA family normally present in a
healthy gut. Since immunoglobulins normally help ward
off infections, a leaky gut leads to less resistance against
viruses, bacteria, parasites and candida. These microbes
are then able to invade the bloodstream and colonize
almost any body tissue or organ. When this occurs in the
gums, periodontal disease results and heart disease fol-

ows with infection of arterial walls. Gingivitis-causing
bacteria “eats” holes in the arterial walls of the cardio-
vascular system which are subsequently “patched” up
with cholesterol. An accumulation of cholesterol plaques leads to an increased risk of heart disease and
stroke; arteries can become blocked which restricts
blood flow to vital organs, or pieces of plaque can break
off and lodge in an artery, thereby completely blocking
blood flow.
Can Leaky Gut Syndrome be reversed?
Band-aid treatments with corticosteroids, prescription antibiotics and immuno suppressive drugs may be temporarily life-saving for acute episodes of pain, bleeding or severe inflammation as occurs in Crohn’s disease, lupus or colitis. In the long run, however, none of these treatments do anything to heal the leaky gut problem. To reverse Leaky Gut Syndrome, the diet must be completely changed to one which is as hypoallergenic as possible. Sugar, white flour products, all gluten-containing grains (especially wheat, barley, oats and rye), milk and dairy products, high fat foods, caffeine products, alcohol and hidden food allergies determined by testing must all be eliminated for long periods of time (several years in the most severe cases) or until the leaky gut process is stopped and repaired and overall GI health is restored.

Bovine Colostrum
Treatment for Leaky Gut Syndrome should begin with bovine colostrum, specifically one that is standardized to contain high levels of immunoglobulins, lactoferrin, PRPs, growth factors and that has a protective and delivery mechanism such as liposomal delivery with phospholipid coatings to protect the colostrum from digestion and ensure it can deliver the nutrients and anti-pathogenic action of colostrum to the cells in the lining of the intestine. Published peer review studies with colostrum show its unique ability to eliminate and prevent infections of all types and help eliminate the attendant inflammation. It has also been clinically proven to prevent and heal Leaky Gut Syndrome in human trials conducted at the Royal Hospital in London. It is the only substance to provide these proven benefits. With appropriate colostrum use, it is rare that prescription drugs for these infections and inflammation would be necessary and should thus, be discouraged. The drugs are usually expensive, have unpleasant side effects (including prolonging and acerbating the disease causes) and are best reserved for life-threatening conditions.

Immunoglobulins and Lactoferrin
Both substances are found in significant amounts in colostrum and show inhibitory activity against viruses and bacteria within the body. This action can be important in autoimmune diseases, as many autoimmune disorders are triggered or worsened by viral or bacterial invaders. Lactoferrin restores the humoral immune response, which is an immune response that is mediated by T and B cells. Lactoferrin is shown to minimize viral and bacterial infections, especially in immuno-compromised patients, which can thereby reduce potential triggers for autoimmune conditions. Lactoferrin also inhibits the production of local proinflammatory cytokines, TNF-α and interleukin 1-β. To limit the inflammatory response is important in many autoimmune conditions, as the inflammation creates pain and complications.

Proline-rich Polypeptides (PRPs)
Also known as Colostrinin, PRPs are powerful immune modulators which can help tone down the overactive immune response found in autoimmune diseases. PRPs act by preventing the overproduction of lymphocytes and stimulating the production of helper and suppressor T cells.

Growth Factors
Various types of growth factors in colostrum help repair the damage of autoimmune diseases. Epithelial growth factor (EGF) may help reverse the destruction of skin cells that can occur with lupus and other autoimmune diseases. Transforming growth factor (TGF), found in two forms in colostrum, can help reverse protein breakdown and stimulate tissue repair. Insulin-like growth factor (IGF-1) can help stimulate glucose transport in diabetic patients.

Colostrum’s growth factors have anti-inflammatory action and also help repair damaged cells in the lining of the gastrointestinal tract, which decreases cellular spacing and prevents further leakage of toxins into body. Research has shown that EGF can help grow and repair intestinal tissue. So, unlike other therapies, colostrum is the only known natural substance that has the capability of healing the GI tract and preventing it from becoming too permeable. Thus, colostrum may have the potential to slow or stop the progression of an autoimmune disease that progresses as a result of Leaky Gut Syndrome.

Cytokines and Infopeptides
Cytokines are hormone-like proteins that have been shown to mediate many vital biological processes, including inflammation. Cytokines achieve this by regulating the intensity and duration of the immune response and mediating cell-to-cell communication. Cytokines also help increase T-cell activity and stimulate production of immunoglobulins. Infopeptides, a protein derivative, reduce inflammation as well as allow the immune system to reorient and correct its response mechanism against autoimmune disease processes. Clinical observations of the effects of infopeptides in humans show reductions in inflammation, edema, pain and fever apparently regardless of cause.

Leaky Gut Syndrome patients can help themselves by taking bovine colostrum; chewing food more thoroughly; following the basic rules of food combining; eating frequent small meals rather than three large ones; taking more time eating meals; and taking digestive enzymes to improve digestion. Gastrointestinal function can be further improved with a juice fast and a hypoallergenic diet and supplements.
Beneficial Supplements
First and foremost is bovine colostrum with protective Liposomal Delivery. Additional supplementation benefits can be found from: natural digestive enzymes; lactobacillus acidophilus and bifidus as well as FOS (fructooligosacharides) derived from Jerusalem artichoke, chicory, the dahila plant or burdock root; aloe vera juice with a high MPS concentration; stomach acidity enhancing supplements - betain and pepsin, stomach bitters, apple vinegar amino acids; L-glutamine, N-acetylglucosamine (NAG) Omega 3 essential fatty acids - milled flax seed, flax seed oil, evening primrose oil, borage oil, olive oil, fish oils, black currant seed oil; soluble fiber - apple or citrus pectin; carotenoids, vitamin B complex (especially B-12, 6 and biotin), vitamin C, E, zinc, selenium, germanium, antioxidants such as Coenzyme Q10, pycnogenols, grape seed extract, pine bark extract, bilberry; bioflavonoids, especially quercetin, catechin, hesperidins, rutin and proanthocyanidins; various high chlorophyll containing green drinks that provide spirulina, chlorella and blue green algae, burdock, slippery elm, licorice root, ginger root, bismuth and bentonite.

Conclusion
Bovine colostrum may potentially slow or stop the progression of autoimmune diseases by healing injury in the gastrointestinal tract and eliminating the leaky gut connection to the specific disease. Research provides evidence of the powerful immune and growth components in colostrum which can regulate the overactive immune response, help repair damaged cells, and reduce inflammation which is characteristic of autoimmune diseases.

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It is important that diagnosis and evaluation of chronic symptoms be determined by qualified health care professionals either natural health care practitioner or complimentary care physician. The above is not intended to diagnose or treat disease and the statements herein have not been evaluated by the Food and Drug Administration.

This is a partial list of all 89 references for this article available at www.CenterforNutritionalResearch.org


Playford RJ, Colostrum and Peptide Therapy from a Gastroenterologist’s Viewpoint; Division of Medicine, Gastroenterology Section Imperial School of Medicine Hammersmith Campus, London, UK.

