

Colostrum & Autoimmune Disorders

by John Balmier, MS

What is an autoimmune disorder?

The immune system is a collection of specialized cells and chemicals that fight infection-causing agents such as bacteria or viruses. An autoimmune disorder occurs when a person's immune system over-reacts and mistakenly attacks his or her own body tissues. These disorders can affect one organ in the body (organ specific), or multiple organs or systems may be affected (non-organ specific). There are approximately 80 different autoimmune disorders which range in severity from mild to disabling, depending on which system of the body is under attack and to what degree.

Some autoimmune disorders include:

- **Rheumatoid arthritis** - affects the joints, causing inflammation and deformation
- **Fibromyalgia** - affects the muscles and soft tissues surrounding joints, causing chronic pain and tenderness at specific sites in the body
- **Multiple sclerosis** - affects the nervous system, causing numbness, paralysis and vision impairment
- **Chronic fatigue syndrome** - affects the brain and multiple body systems, causing incapacitating fatigue and problems with concentration or short-term memory
- **Lupus erythematosus** - affects connective tissue and can strike any organ system, causing joint inflammation, fever, weight loss and facial rash
- **Diabetes (Type 1)** - affects the pancreas, causing thirst, frequent urination, weight loss and an increased susceptibility to infection
- **Addison's disease** - affects the adrenal glands, causing weight loss, muscle weakness, fatigue, low blood pressure, and sometimes darkening of the skin
- **Inflammatory bowel disease (ulcerative colitis or Crohn's disease)** - affects intestinal tract, causing diarrhea and abdominal pain
- **Scleroderma** - affects the skin and other structures (often joints), causing scar tissue
- **Psoriasis** - affects the skin, causing thick and reddened skin scales

What triggers Autoimmune Disease?

Approximately 50 million Americans, 20 percent of the population, suffer from autoimmune diseases. Women are more likely than men to be affected, especially during their child-bearing years. The

development of an autoimmune disease may be influenced by the genes a person inherits, combined with the way in which the person's immune system responds to various environmental triggers. Some autoimmune disorders are known to either begin or worsen with certain triggers, such as viral infections. Other factors that have been shown to contribute to autoimmune disease are leaky gut syndrome, aging, chronic stress, hormones and pregnancy.

Leaky gut syndrome plays a major role

Experts now believe that leaky gut syndrome, which is not considered a disease itself, plays a significant role in autoimmune diseases like lupus, rheumatoid arthritis, multiple sclerosis, diabetes, fibromyalgia, scleroderma and others. Before you think "Oh, I don't have leaky gut syndrome," you should consider how very common it is. Approximately 70% of the population has it. If you have consumed substances that damage your intestinal lining, including antibiotics, steroids, soft drinks, alcohol, non-steroidal anti-inflammatory medications (ibuprofen or aspirin) or prescription pain medication, alcohol, chemical hardeners used in canned foods, wheat proteins that contain gluten, or refined foods, then chances are great that you have some degree of leaky gut syndrome.

Leaky gut syndrome, also known as intestinal permeability, is a condition in which the lining of the intestines is more permeable than normal. This means that there are large pores or spaces between the cells that make up the intestinal wall. This compromised intestinal barrier means compromised immunity, since infectious pathogens (including bacteria, viruses, yeasts, and fungi) as well as allergens can move through these enlarged holes within the intestinal wall and take up residence in your body. As the body pours more and more of these substances into the body, auto antibodies are created, and inflammation becomes chronic. The type of autoimmune disease that can develop depends on the location of the inflammation. For example, inflammation that affects a joint can result in rheumatoid arthritis, and when it affects the blood vessels, vasculitis may occur.

It is becoming clear in recent research that there is a relationship between gastrointestinal health and autoimmune diseases. Dr. Kent Katz, MD, discussed this relationship in a 1989 article, pointing out that many intestinal disorders have rheumatologic manifestations and vice versa. He then postulated that rheumatoid arthritis may be related to altered intestinal permeability.¹⁹ This hypothesis was examined further by Dr. Patrick Rooney, MD, of McMaster University in Canada, published in a 1990 article. It is

known that many common intestinal flora can cause reactive arthritis when the gut barrier is breached. While there is no known connection between rheumatoid arthritis and gut abnormalities, a similar condition, ankylosing spondylitis, a rheumatic condition of the spine, has been linked to ulcerative colitis.¹⁸ Dr. Daniel Hollander, MD, of UCLA reported in 1999 that gut permeability is increased in patients with Crohn's disease, and furthermore that the extent of the increase in gut permeability is directly correlated to the severity of the disease.⁵

According to Dr. Donald Henderson, a highly-respected gastroenterologist, "Colostrum is the ideal solution for leaky gut syndrome. Because colostrum reaches the gut while its components are still viable, its immunoglobulins and other immune factors can attack the offending pathogens in the intestines and prevent them from causing damage."⁴

Colostrum to the Rescue

Research shows how specific components within colostrum may benefit individuals with autoimmune disease. Colostrum contains immune factors which can regulate the immune response, growth components to help repair damaged cells, and anti-inflammatory substances to reduce inflammation that is characteristic of autoimmune disorders.

PRP: Proline-Rich Polypeptides

Colostrum contains PRPs (Proline-rich peptides); also known as Colostrinin, a powerful immune modulator which can help tone down the overactive immune response found in autoimmune diseases. It acts by preventing the overproduction of lymphocytes and stimulating the production of helper and suppressor T cells.^{10,17,22}

Researchers in Warsaw, Poland reported in 1993 that the regulatory substance PRP, found naturally in colostrum, offers enormous possibilities to support the body's thymus gland in balancing the immune response, especially in cases of autoimmunity where the immune system is overactive and attacks the person's own body. This research shows that PRP's therapeutic value in treatment of autoimmune disorders is also non-species specific, meaning that the PRP in cow's colostrum can benefit humans.¹³

Immunoglobulins and Lactoferrin

Immunoglobulins and Lactoferrin, both found in significant amounts in colostrum, show effective action in inhibiting 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.

Immunological studies show that multiple sclerosis (MS) is an autoimmune disease triggered by a virus infection. In 1984, Dr. Takusaburo Ebina of Tohoku University School of Medicine in Japan gave his patients colostrum orally to investigate its effect on the course of the disease. He reported some improvement in the condition of MS patients taking colostrum rich in IgA containing anti-measles lactoglobulin. Also, no side effects were observed in colostrum recipients.²⁴

Lactoferrin restores the humeral immune response, which is an immune response that is mediated by T and B cells.¹ Lactoferrin is shown to minimize viral and bacterial infections, especially in immunocompromised patients, which can thereby reduce potential triggers for autoimmune conditions². In 2001, researchers in Britain published results of a study showing that lactoferrin 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.³

Growth Factors

Various types of growth factors in colostrum should 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.¹⁹

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. Colostrum naturally contains EGF, which research shows can actually help grow and repair intestinal tissue.

Several studies have shown that taking pain relievers, also known as NSAIDs, over a short term of 1-7 days increases gut permeability (leaky gut) by approximately threefold. We previously demonstrated how leaky gut syndromes can lead to autoimmune diseases. However, when colostrum is taken along with the NSAIDs, there is not any increase in gut permeability! In a clinical study, Raymond Playford and his team of researchers at the Imperial College School of Medicine (London) conducted studies showing that colostrum keeps the gastrointestinal tract from becoming more permeable, even while taking NSAIDs. They attributed this anti-inflammatory response to the numerous growth factors that occur naturally in the colostrum.⁶ 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.

Infopeptides

In a clinical study reported by Drs. Alejandro and Fabiola Nitsch, MD, from the University of San Carlos, Guatemala Medical School, colostrum-derived protein derivatives, termed "Infopeptides" by Dr. Nitsch, have been shown to reduce inflammation, edema, pain and fever in a variety of conditions. When these Infopeptides were tried on patients suffering from chronic rheumatoid arthritis as well as therapy resistant osteoarthritis, patients experienced significant improvement and sustained benefit with prolonged therapy. Dr. Nitsch also pointed out that the benefits of such a treatment regimen are low cost, oral administration, and the absence of side effects.⁹

Anti-inflammatory components

Colostrum contains components that help to regulate the body's inflammatory response, helping to reduce it when over-stimulated, as it is in autoimmune disorders. In 1993, Dr. Donald Murphey of the University of Texas Medical School created an experimental inflammation model using subcutaneous air sacs placed in the backs of rats into which carrageenan is then injected to cause inflammation. Colostrum injected into these sacs showed a pronounced anti-inflammatory effect over controls, as measured by polymorph nuclear leukocyte (PMN) migration into the affected area.¹⁴

Dr. Marc Feldmann, MD, of the Kennedy Institute of Rheumatology in London has shown the relationship between tumor necrosis factor (TNF- α) and rheumatoid arthritis, as reported in articles published in 1996 and 1998. He showed that the pro-inflammatory cytokines associated with rheumatoid arthritis can all be turned off if TNF- α is neutralized and that patients with both rheumatoid arthritis and Crohn's disease benefit when treated with TNF-a blockers.^{8, 11} Then in a 1998 report by Dr. E Buescher of the Eastern Virginia Medical School in Norfolk, it was demonstrated that colostrum contains, along with TNF-a itself, TNF-a receptors which bind to and alter TNF- α activity. This may be one mechanism for how colostrum produces its anti-inflammatory action.⁷

Natural Delivery System

Most important is the natural delivery system provided by the mammary gland to ensure that colostrum reaches the portion of the gastrointestinal system where it can do the most good. When colostrum is secreted by mammary cells, it does so by what is called apocrine secretion. This means that colostrum is collected in a globule in the mammary cell that is surrounded by cell membrane. When the globule is released into the mammary duct, the cell membrane remains around the colostrum, protecting it until it reaches the intestine where it can be absorbed by the body. Dried and defatted colostrum products lose this protective membrane, leading to degradation of colostrum proteins in the stomach.

Colostrum which has the membrane phospholipids reconstituted, however, retains the protective membrane and is much more effective. Sovereign Laboratories Colostrum-LD® products utilize Liposomal Delivery or LD technology, a bio-identical delivery system in which the membrane phospholipids are reconstituted to protect the colostrum and enhance delivery for all nutrients. This enhanced delivery makes colostrum's components up to 1,500% more bioavailable throughout our body systems and helps to ensure that the gastrointestinal tract receives the immune and growth components necessary to fight off leaky gut syndrome and protect against auto-immune disease.²⁶

Conclusion

These representative studies indicate that colostrum can provide support for individuals with autoimmune disease. Colostrum may potentially slow or stop the progression of the autoimmune disease, by healing

injury in the gastrointestinal tract and eliminating the leaky gut connection to the disease. Scientific research and clinical studies show evidence of the powerful immune and growth components in colostrum which can regulate the overactive immune response as well as heal tissue damage caused by autoimmune disease.

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