"Alarming Increase of Deadly Skin Cancer." "Food Allergies a Growing Threat." "Severe Flu Flooding ERs." These recent newspaper and web site headlines are undeniably disturbing. They also make it clear that far too many of us have immune systems that are weak and ineffective.

Our immune systems are supposed to prevent disease-causing microbes (bacteria, viruses, parasites, and fungi) from invading our bodies. When microbes manage to get inside, the immune system is responsible for hunting them down and destroying them. We also depend on our immune systems to protect us from illnesses that begin inside us, from either single cells (cancer) or mixed up messages (allergies and autoimmune disease). If that's not enough, we also need our immune systems to support robust colonies of the friendly bacteria Lactobacillus and Bifidobacterium to help protect us from staph infections, colds, cancer, or allergies.1,2

While serious, a weak and vulnerable immune system should not be cause for alarm. Instead, it should be a call to action! When two super-nutritional supplements, lactoferrin and probiotics are taken together, they give a great big boost to weak, under functioning, and vulnerable immune systems.

Q. What exactly are lactoferrin and probiotics?
A. When we break down the word lactoferrin it provides us with an excellent understanding of what it can do for our health. From the Latin lacto, or ‘milk’, and ferrin, which means ‘iron’ - we get lactoferrin, an iron-binding protein that’s found in milk.3 The word probiotic also tells us what these supplements do – pro, means ‘for’ and bios, means ‘life’ – so probiotic literally means ‘for life’ – a very apt description of what these friendly bacteria do for us.4

Q. Aren’t bacteria the germs that cause disease?
A. All bacteria (there are at least 1,000,000 species!) are one-celled organisms that live in huge groups called colonies. Some bacteria, like Group A Streptococcus are well-known for their ability to make us sick. These are the bacteria that cause impetigo, rheumatic fever, and those dreaded and painful strep throat infections.1,2 The overwhelming majority of bacteria, however, are harmless to humans and some are exceedingly beneficial. Lactobacillus acidophilus,
Lactobacillus plantarum, Bifidobacterium longum, and Bifidobacterium lactis are some of the best known and most effective friendly bacteria.  

**Q. What exactly do the friendly bacteria do?**

**A.** There are hundreds and hundreds, and possibly, thousands of ways that friendly bacteria help humans. The probiotics Lactobacillus acidophilus and Bifidobacterium longum act a little like school teachers. An important part of their day is spent making sure that the colonies of friendly bacteria in the intestinal tract do their best to stay strong, stable, and balanced. L. acidophilus and B. longum “weed out” the disease causing bacterium that are living in the colonies and allow the friendly bacteria to thrive. They also prevent the diarrhea that’s common when taking prescribed antibiotics for an infection and significantly reduce the risk of traveler’s diarrhea. Studies have shown that L. acidophilus and B. longum can reduce cold symptoms and in lab studies, they are able to shrink cancerous tumors.

In a study of probiotics and the elderly, milk enriched with Bifidobacterium lactis was given to healthy volunteers ranging from 63 to 84 years in age. The researchers took weekly blood samples and looked at the participants’ white blood cells, the infection fighting cells of the immune system. They discovered that after the participants consumed the Bifidobacterium lactis enriched milk they had significantly increased numbers of disease-fighting white blood cells. The researchers concluded that drinking B. lactis supplemented milk provided a big boost to the immune systems in the elderly.

The frequent use of antibiotics has dramatically increased the incidence of Clostridium difficile, a microbe responsible for a serious infection of the lower intestinal tract. In a recent clinical study of patients with recurrent C. difficile, when they took Lactobacillus plantarum supplements with metronidazole, a powerful antimicrobial medication, only the C. difficile, was eradicated from their intestinal tracts. Their beneficial bacterial was protected by the L. plantarum supplements.

**Q. If lactoferrin is ‘milk iron’ can we get it from drinking milk?**

**A.** Well, you’d have to drink huge amounts. There’s only a trace of lactoferrin in cow’s milk, the kind most adults drink. Breast milk is a better source of lactoferrin with about 125 mg in ½ cup. However, human colostrum or ‘first milk’ is rich in lactoferrin with a whopping 875mg per half cup.

Colostrum is the thick yellow fluid that comes in before breast milk and rapidly activates the immune systems of newborn babies to get them revved up and running well. It contains powerful white blood cells that destroy microbes in the baby’s stomach and send out messages to mobilize newborns’ immune defenses. Colostrum also contains biochemicals that keep harmful cells from passing through the intestinal walls into the baby’s body and help Lactobacillus bifidus, a good bacterium, to colonize in the intestinal tract. Last, but most certainly not least, colostrum is rich in lactoferrin which prevents harmful bacteria from growing.
Lactoferrin is also present in other bodily fluids, including tears, nasal secretions, saliva, bronchial mucus, gastrointestinal juices, vaginal mucus, and semen. At first glance, these secretions may seem pretty unconnected, but they share one important similarity – they are consistently exposed to potentially harmful microbes.18

Q. Is that why it’s found in those fluids? Does lactoferrin protect us from harmful microbes?
A. Yes, to both questions! Lactoferrin has a unique affinity to iron, allowing it to bind to the nutrient. Interestingly, numerous strains of pathogens need an iron-rich environment to reproduce. Lactoferrin limits the availability of iron to bacteria in the intestines, allowing only the beneficial bacteria to thrive.19

While lactoferrin is most certainly impressive on its own, when combined with specific strains of the friendly bacteria, Lactobacillus and Bifidobacterium, it can give a big boost to our immune systems.

Q. What kind of boost do lactoferrin and the probiotics give to the immune system?
A. To microbes that cause disease, the human body is very attractive. They hide under fingernails, lurk between teeth, and live in hair. Our insides provide warmth, darkness, moisture, and protection – the perfect environment to make us sick. Bacteria love living in the spaces between cells because they provide a protected place for rapid growth.1,4 Viruses must enter our cells to survive, thrive, and cause infections. Other microbes, such as parasites, can live either inside our cells, like malaria, or outside our cells, such as pinworms.2

When taken together, lactoferrin and the probiotics provide a synergistic effect (synergism occurs when two or more nutrients work together to create a more powerful effect than they could alone) to the immune system. Lactoferrin, L. acidophilus and B. longum work together to:

- Prevent chronic inflammation, a condition often associated with a poorly functioning immune system.
- Alert the white blood cells (the body’s premier disease fighting cells) when harmful microbes invade the body.
- Interfere with viruses’ ability to attach to target cells, preventing infection with herpes, polio, and hepatitis.
- Limit the spread of cancer cells by preventing the formation of blood vessels necessary for tumor growth.
- Limit microbe spread by limiting the availability of iron.
- Weed out the disease causing bacteria living in the intestinal tract.
- Prevent antibacterial resistance by stabilizing the colonies of friendly bacteria.20-29,33
However, in order for the probiotics and lactoferrin to reach the small intestine (where nutrients are digested and released into the bloodstream), they must be able to survive the trip through the harsh stomach fluids.

**Q. Should I buy lactoferrin and probiotic supplements with enteric coatings?**

**A.** No, traditional enteric coatings are ineffective. That’s because enteric coatings are only designed to keep the tablet contents intact. They are not, however, designed to keep stomach contents from entering the tablet.

**Q. Then what should I look for? And how can I buy the best lactoferrin product for my money?**

**A.** Both lactoferrin and probiotic supplements need to be protected from the environment. Make sure they haven’t been exposed to air, sunshine, artificial light, or moisture. In addition, probiotic bacteria and lactoferrin need to be protected from the digestive juices and enzymes in the stomach. Research into this problem has resulted in a unique coating technology, which has been scientifically proven to protect both probiotics and lactoferrin from these conditions.

A recent lab analysis compared the survival rate of five top-selling brands of probiotic supplements. For two hours, the probiotic supplements were placed in harsh simulated stomach fluids with a pH of 1.2 (the same acidity of actual stomach juices). While all five supplements promised that 100% of their bacteria would survive, drastically different results were obtained. One brand had a 6 percent survival rate, two brands had a 5 percent survival rate, and only three percent of the promised bacteria survived the test in the fourth brand. But in the fifth brand tested, the one that used the unique coating technology, 99 percent survived the acid test.

A similar test was performed with a protected and an unprotected lactoferrin supplement. Like the gastric-stable probiotics, the lactoferrin supplement utilizing the unique coating technology was far superior to the unprotected form. The study found that the protected lactoferrin was 167 times more effective (more potent) than the unprotected supplement.

Read the label. Try to determine what type of delivery system the manufacturer is using. Reputable probiotic supplement makers will guarantee that the bacteria will reach the intestines alive, vibrant, and raring-to-go.

**Q. What else can I do to boost my immune system?**

**A.** Bacterial and viral illnesses are often spread by respiratory droplets — sneezing, coughing, or hand contact with an infected person. This is why it’s a good idea to stay home if you feel ill and cover your nose and mouth when you’re coughing or sneezing.

Take all antimicrobial (antibiotic, antiviral, etc.) medications exactly as your doctor or other healthcare practitioner has prescribed. For a stronger immune system, get plenty of sleep, be
physically active, manage your stress, drink plenty of fluids, and eat a diet that’s high in fiber, fresh fruits, and vegetables.¹ ²

Most importantly, teach your children how to wash their hands. Hand washing, when done properly, is one of the best ways to avoid getting sick. The following Web sites might be helpful:

The Scrub Club by NSF International
http://www.scrubclub.org/home.aspx

Henry the Hand-From Dr. William Sawyer
http://www.henrythehand.com

Handwashing Links-From the Centers for Disease Control
http://www.cdc.gov/foodsafety/hotandwash.htm

The Adventures of Jean and Gene (poster)-by the Wyoming Department of Health
http://ddd.state.wy.us/Documents/hygiene1.pdf

**Conclusion**
While it might be some time before we see headlines like these:

“Eradication of the Common Cold Celebrates its Tenth Birthday;” “Infectious Diseases and Cancer Rates Down Due to Increased Lactoferrin and Probiotic Use;” “Antibiotic Resistance Resolved Due to Use of Lactoferrin;” “Probiotic Balance Resulting in Fewer Hospital Admissions” – they actually aren’t too farfetched. Good health depends on good nutrition. And good nutrition includes the use of probiotic and lactoferrin nutritional supplements to provide superior support, strength, stability, and balance to the immune system.

To find a naturopathic doctor in your area for information on supporting health digestion, visit our Find a Doctor page.

**References**


