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Dr. David G. Williams

Fight Bacteria with Bacteria

Despite reams of research showing that the excess use of antibiotics causes many problems, doctors continue to promote these substances as the ultimate answer to a long list of common diseases. For instance, not too long ago, there was big push in medical circles to use antibiotics in the treatment of stomach (peptic) and small intestinal (duodenal) ulcers. Since higher than normal concentrations of the bacteria *helicobacter pylori* (*H. pylori*) were found in the ulcerated areas, doctors believed that antibiotics could eradicate the bacteria and fix the problem. In the short term, this practice often works. However, the problem often recurs in just a few months.

Now, the latest trend is to use antibiotics to treat another gastrointestinal problem called irritable bowel syndrome (IBS). IBS is the most frequently diagnosed gastrointestinal condition in the United States. Between 30 percent and 50 percent of all referrals to gastroenterologists are because of IBS. It is estimated that as many as 35 million people have IBS in this country alone.

IBS is one of the so-called "syndromes." When a condition is described as a syndrome, it's usually because the condition is associated with a wide variety of symptoms, and there is no test or procedure that can definitively conclude that the individual has or doesn't have the problem. Syndromes become "catch-all" problems where doctors end up treating the symptoms, usually without any real knowledge of their cause.

Some of the symptoms that have been associated with IBS include abdominal pain and distention, cramps, bloating, diarrhea, constipation, nausea, flatulence, anorexia, and depression. Physicians arrive at a diagnosis of IBS by the process of elimination (no pun intended). In other words, they rule out problems like colon cancer, intestinal blockage, structural defects in the bowel, bacterial infections, lactose intolerance, diverticulitis, laxative abuse, pancreatitis, and thyroid problems. If none of these problems can be identified, IBS often becomes the default diagnosis.

The conventional treatment for IBS has been any medication that gives symptomatic relief. Examples have ranged from antacids to drugs that slow the movement of the intestinal tract, to antidepressants. The role of antibiotics as one of the preferred treatment solutions is relatively recent.

Using More Antibiotics Isn't the Answer

Generally, there aren't many bacteria that reside in the small intestine. The major colonies of bacteria reside in the large intestine. The new theory is that these bacteria back up into the small intestine and set up residence there. The fermentation created by these misplaced bacteria then causes the

In This Issue

You will observe with concern how long a useful truth may be known and exist, before it is generally received and practiced on.

–Benjamin Franklin

wide range of symptoms mentioned previously. This over-growth of bacteria supposedly must be eliminated through the use of antibiotics.

This theory and this new "cure" for IBS are largely based on a recent study performed at Cedars-Sinai Medical Center in California. Subjects were given special sugar syrup, which the body can't digest but bacteria break down to produce hydrogen. The amount of hydrogen produced was then measured with a breathalyzer test, to determine just how many bacteria were present. Of the 202 individuals tested, 157 had an overload of bacteria based on this testing procedure. These people were treated with a 10-day course of antibiotics and 47 came back for follow-up care. Of the 47, further testing indicated that the bacteria had been eradicated in 25, whose IBS symptoms had either disappeared or improved. In the remaining 22 individuals, the antibiotics apparently killed only a portion of the bacteria. However, many of these people felt that their condition had improved also. *(Am J Gastroenterol 00;95(12):3503-6)*

This study is being hailed in several medical journals as having uncovered the latest method to treat IBS. But, obviously, there are numerous questions that need to be resolved before 15 percent of the entire population of the U.S. is put on antibiotics. As a side note, I've learned that several of the subjects who initially experienced dramatic improvement suffered relapses within a few months of their initial treatment.

I can't help but believe that treating chronic problems by eradicating this or that strain of bacteria in the gastrointestinal tract will always result in only temporary relief. This latest therapy is just another case of treating the symptoms of the problem and not the underlying cause.

Even many of the so-called natural therapies attack the problem in the same way–they address only the symptoms. Therapies like peppermint oil (or peppermint and caraway oil combinations), herbal formulas, hypnosis, and psychological counseling are all being used in this way. While it's true that mental stress and other factors can play a role in ulcer development, the root of the problem stems from an imbalance of normal bacteria in the gastrointestinal tract.

Under normal circumstances, the beneficial bacteria in the body will keep disease-causing bacteria in check. This explains why almost everyone harbors the *H. pylori* organism, but only a small percent of the population suffers from ulcers. It also explains why some of the individuals treated in the IBS study experienced relapses within a few months. When either of these problems occurs, you can safely assume that levels of bacterial flora in your gastrointestinal tract have fallen below normal levels. If you want to permanently eliminate these problems, you have to re-establish the good bacteria in your G.I. tract. This is best accomplished through the use of fermented foods.

Living Foods for Better Living

In the last 100 years, most of the more beneficial fermented foods have practically been eliminated from our diet. Much of the problem has to do with the way we now preserve foods, particularly vegetables.

When fresh vegetables weren't as readily available throughout the year, they were often preserved through fermentation. Nowadays, thanks to improved transportation and storage techniques, we can buy various vegetables all year around. And when it comes to preserving vegetables, freezing and canning have become the methods of choice. While these techniques help retain vitamin content and provide a high degree of convenience, they do little to provide beneficial bacteria for your system. This fact should be fairly evident when you consider the 35 million people in this country alone who suffer from IBS, and the millions more who suffer from ulcers, indigestion, recurring vaginal infections, chronic constipation or diarrhea, and dozens of other related health problems.

These problems occur when the balance between the beneficial bacteria and disease-causing bacteria in your gastrointestinal tract shifts toward the disease-causing variety. Your colon is like a constant bacterial war zone. There is a continuous battle going on between the beneficial bacterial flora in your bowel, and a massive quantity of germs and harmful bacteria that not only enter the colon daily through your food and water supply, but constantly reside there throughout your lifetime. All remains well until the beneficial flora encounter a new form of bacteria or toxin, or are reduced to an ineffective level through the use of drugs like antibiotics. In either circumstance, the harmful bacteria multiply unchecked and cause severe local distress (in the colon, small intestine, stomach, etc.), or

break through the protective barrier of the colon wall, enter the bloodstream, and trigger infections throughout the body.

If you have gastrointestinal problems, it will be almost impossible to permanently eliminate them unless you improve the bacterial flora in your system. And, if you're interested in maintaining proper health, it's imperative that you help supply your intestinal tract with beneficial bacteria.

These bacteria originate in the soil, and the species of plants that grow closest to the soil are richest in these forms of bacteria, called lactic-acid bacteria.

Lactic-acid bacteria play a key role in the making of a majority of fermented food products. The salts of lactic acid are known as "lactates." As I'm sure you're aware, the word lactate also refers to the process of secreting milk. Lactic-acid bacteria is what makes milk undergo natural fermentation. Lactic-acid bacteria changes milk sugars into lactic acids, which protect unpasteurized milk from undesirable organisms that would otherwise cause it to spoil. Nature's way of preserving milk is to let it sour. (I'm talking about whole, raw milk. Once it has been pasteurized, homogenized, defatted, etc., milk doesn't sour. It simply spoils.)

Sour milk products have been part of our ancestors' diets ever since the collecting of milk from animals began. Lactic acid-fermented foods have also been dietary staples for thousands of years. Early writings show that Chinese workers ate acid-fermented vegetables while building the Great Wall of China. The Japanese have routinely served a small serving of pickled vegetable with their meals. Centuries ago, the Koreans developed *kimchi* by acid-fermenting cabbage and other vegetables. In fact, lactic acid-fermented cabbage has been revered as one of the most beneficial healing agents since early man.

Before Christ, the Greeks wrote about the health benefits of fermented cabbage. The Romans used sauerkraut to treat and prevent intestinal infections. Captain Cook utilized sauerkraut and lime juice to prevent scurvy on his three-year journey around the world. Throughout Europe, Russia, and the Balkans, sauerkraut and other lactic acid-fermented foods (kefir, yogurt, buttermilk, kapusta, kvass, borscht, etc.) have become entrenched in the diet after centuries of use. Many African cultures still routinely use lactic acid-fermentation as a way of preserving gruels made from corn and sorghum. Even the people of India use a food paste made from the juice of sauerkraut.

In this country, about the only fermented food we continue to eat with any regularity is pickles made from fermented cucumbers. But commercial pickles are made using vinegar instead of just salt and water. And then they are pasteurized, which kills all the lactic-acid-producing bacteria. This process, in effect, renders the product nearly useless when it comes to improving health.

Can you remember the last time you had any real sauerkraut, buttermilk, or yogurt? Unless you've traveled extensively outside of this country or you're over the age of 70, it's unlikely that you've ever had the opportunity to eat these foods on a regular basis. I've had the good fortune to enjoy the most wonderful natural Australian and New Zealand yogurts, as well as numerous other fermented products. Unfortunately, the last couple of generations of Americans probably don't have a clue what I'm talking about. Trying buttermilk would be out of the question, and their experience with yogurt would be limited to either the sugar-laden garbage sold in grocery stores, or "yogurt ice cream."

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The Cost of a Diet Without Fermented Foods

Believe me, not being able to include these fermented foods in the diet is more than just a minor inconvenience. Our immune system, much of which is concentrated in the gastrointestinal tract, is being assaulted daily by unfamiliar microbes carried on foods grown around the world, increasingly polluted water supplies, and travelers from every corner of the globe. Much of our ability to effectively ward off these microbes seems to be compromised. IBS is on the increase worldwide. Not surprisingly, it seems to be more prevalent in Western-type societies and among those in the middle and upper classes. In less industrialized areas, where lactic acid-fermented foods are still staples in the diet, the incidence of IBS and other related gastrointestinal problems is about one-tenth that of Western societies.

A closer look at the long list of health benefits provided by lactic acid-fermented products helps explain why they are so crucial to good health. They:

1. Help to balance the production of acid in the stomach
2. Produce acetylcholine
3. Can be beneficial for diabetics
4. Can help in both the prevention and treatment of cancer
5. Produce numerous unknown compounds that both inhibit the growth of and destroy pathogenic bacteria.

Here's how lactic acid-fermented products accomplish each of these highly desirable health benefits:

Balancing the production of acid in the stomach. When the production of hydrochloric acid by the stomach declines, fermented foods help increase the acidity of the gastric juices. When there is an overproduction of acid, these foods help provide protection to the stomach and intestinal lining.

Early practitioners knew that lactic acid-fermented products seemed to be especially helpful to the frail and elderly. Much of the benefit, I'm sure, was due to the improvement in their digestion. As we get older, our production of both the digestive juices and the enzymes required for proper digestion begin to decrease. Foods like sauerkraut, buttermilk, and pickled vegetables can help make up for this loss. *The key here is not to eat a large helping once or twice a week, but a small portion on a very regular basis. Once or twice daily with meals is best.* One of the dietary habits consistent with each of the "lost societies," whose members often lived into their 100s, was the *regular* intake of small amounts of lactic acid-fermented foods.

Folk healers in the past knew that lactic acid-fermented foods could also cure ulcers. Decades before antibiotics, cabbage juice was successfully used to prevent or heal peptic and duodenal ulcers.

In one study, it was shown that cabbage juice alone had a cure rate of over 92 percent in the treatment of these ulcers. This compared to about a 32 percent cure rate in those using a placebo or other treatment. The dosage in the study consisted of only 50 cc of raw cabbage juice derived from a quart of freshly pressed cabbage. *(Calif Med 56;84(1):39-42)*

Based on numerous studies and early clinical work, researchers have begun to refer to this unknown ulcer-healing factor in cabbage as Vitamin U. *(J Am Dietetic Assoc 50;26:668-672)*

Although in the above studies the cabbage juice wasn't fermented, keep in mind that vegetables that grow close to the soil are naturally rich in lactic-acid bacteria. That's why "starter cultures" aren't needed to ferment these vegetables, only salt and water. Cabbage is also a reliable source of vitamin C, which has been found to be lower in the gastric juice of ulcer patients.

If you have ulcers, indigestion, and/or an overgrowth of *H. pylori*, cabbage juice is a safe, effective and inexpensive remedy. If you "culture" it or give it a chance to ferment, you'll experience even more benefits.

Acetylcholine production. Acetylcholine is a neurotransmitter substance. In simple terms, it facilitates the transmission of nerve impulses. In practical terms, it helps increase the motility of the bowel, and can alleviate constipation problems. It also helps improve the release of digestive juices and enzymes from the stomach, the pancreas, and the gallbladder. This is another reason that fermented foods and vegetables are potent digestive aids.

Acetylcholine is also linked to the phase of sleep called *rapid eye movement* (REM). REM

occurs when you experience the deepest and most beneficial sleep. It stands to reason that by regularly including fermented foods in your diet, you might also improve your sleep habits, which can dramatically improve your overall health.

There's an interesting sidenote concerning the use of fermented foods to increase the production of acetylcholine. In many ways, the drug nicotine mimics many of the actions of acetylcholine. Although I haven't seen any studies pertaining to this subject, logic suggests that using fermented foods might be a way to help minimize the withdrawal symptoms associated with smoking cessation. Since the effects of nicotine last longer than those of acetylcholine, fermented foods probably wouldn't totally eliminate the withdrawal effects–but they might provide enough overall stimulus to help kick the habit. There would certainly be no downside to trying it.

Beneficial foods for diabetic individuals. In addition to improving pancreatic function, the carbohydrates in the lactic acid-fermented foods have been broken down or "pre-digested." As a result, unlike ordinary carbohydrates, they do not place an extra burden on the pancreas.

The prevention and treatment of cancer. I've written in the past about the anti-cancer benefits of the cruciferous family of vegetables, which includes cabbage. (See the September 2000 issue of *Alternatives.*) Numerous compounds (such as sulforaphane, indole-3 carbinol, selenium, glucosinolates, etc.) in these vegetables exhibit anti-cancer activity. *New research has found that fermenting cabbage and other cruciferous vegetables results in the creation of even more anti-cancer agents.*

Researchers at the University of Illinois were curious as to why Polish women who moved to the United States were far more likely to develop breast cancer than their kinfolk who remained in Poland. One of the primary dietary changes associated with the move was their lower consumption of fermented vegetables, particularly cabbage.

They found that very low concentrations of extracts from these vegetables exhibited anti-estrogen effects. Moreover, when purified and separated, these anti-estrogenic compounds were different from anything seen before. New studies are underway to determine if these compounds can be the basis for a new class of drugs that can be used to prevent cancer. (Study to be published by William G. Helferich in an upcoming issue of the *Journal of Agricultural and Food Chemistry*)

Cancer has always been associated with a decrease in the production of hydrochloric acid and digestive enzymes. When such a decrease occurs, improperly digested food overloads the liver and other systems with metabolic toxins. Several doctors, such as the famous cancer specialist Nicholas Gonzales, have found that increasing the enzymes and digestive capabilities of cancer patients can often help the body rid itself of the cancer. NIH cancer studies are currently underway to help validate these findings.

Lactic acid-fermented products, particularly vegetables such as cabbage, can help compensate for the loss of digestive capabilities. Additionally, lactic acid increases vitamin B production by the intestinal flora, increases cell metabolism, and acts as a detoxifier, all of which are beneficial to the cancer patient.

Dr. Johannes Kuhl of Germany has reported using lactic acid-fermented products in the treatment of colon polyps. He reports that these precancerous growths in the colon will disappear after four to six weeks of heavy ingestion of lactic acid-fermented vegetables, and will not recur as long as the vegetables are used on a regular basis. *(Krebs und Bestrahlung: Ein Irrtum Moderner Medizin 66; Viadrina Verlag)*

Production of unknown compounds that both inhibit the growth of and destroy pathogenic bacteria. Many pathogenic forms of bacteria are sensitive to acidic environments. This is true of both cholera and typhoid. In the early 1950s, during a European epidemic of typhoid fever, reports emerged showing that fresh sauerkraut was an effective agent for killing the bacteria. I'm not sure how or to exactly what extent it was used at that time.

More recently, German scientists were working with a strain of lactic-acid bacteria found in sourdough bread, and found that it seemed to be more effective than past strains at killing other microbes. Further investigation revealed that the bacterium being studied was a previously unreported strain. In early lab results it quickly eliminated the super-bugs currently resistant to most antibiotics. As you might expect, efforts are underway to turn this microbe into a new antibiotic. *(Angewandte Chemi Internazional August 2000)*

The concept of using naturally occurring "bugs" to eliminate harmful bacteria is an idea that is finally catching on in the scientific community. Unfortunately, however, more effort seems to be directed at finding alternatives to antibiotic use in animals than in humans.

The dangerous *E. coli* 0157:H7 is the strain of bacteria that has caused numerous outbreaks of food poisoning and several deaths over the last few years. *E. coli* normally occurs in the intestines and manure of cattle, and, with the exception of this one particular strain, is relatively harmless. Recently, rather than resort to antibiotics, scientists at the University of Georgia isolated other strains of *E. coli* that kill the 0157 strain, and sprayed it onto the cattle feed. Within just two weeks, the new *E. coli* outcompeted the 0157 strain and eliminated it completely in about 90 percent of the cattle.

It's baffling to me why conventional medicine hasn't been able to grasp or accept this concept. Obviously, the pharmaceutical companies stand to make a lot more money selling antibiotics and other medications than recommending a daily dose of fermented cabbage.

How to Make Your Own Fermented Foods

If you have access to real, live yogurt, then make it a regular part of your diet. As I write this issue, I've been drinking a jar of White Mountain premium Bulgarian yogurt. It contains live bacteria cultures, no preservatives, no flavorings and no stabilizers. I know it has live cultures because I've used it numerous times in the past as a starter for making yogurt at home.

Making and using lactic acid-fermented cabbage and other vegetables is much less expensive than using yogurt. It's also an easy and fun process that I encourage everyone to do. As my dad always says, "It's cheap insurance." It will turn out to be one of the most effective methods of protecting yourself against the onslaught of new "super bugs," cancer, and the ever-growing list of digestive complaints associated with our aging population.

There are several books currently in print on the subject of lactic acid-fermentation as a method of preserving food. However, some are quite complicated and intimidating, to say the least. The following recipe is from Sally Fallon's excellent book, *Nourishing Traditions*. If you don't have her book in your health library, I highly recommend that you purchase it. It has a wealth of information on various health topics, and dozens of great recipes. Only one chapter deals with lactic acid-fermented foods, but it contains numerous recipes, including not only sauerkraut, but also pickled cucumbers, garlic, beets, radish, corn relish, potatoes, various chutneys, Korean kimchi, and more.

Sauerkraut (Makes 1 quart)

- 4 cups of shredded cabbage, loosely packed
- 1 teaspoon juniper berries
- Ω teaspoon cumin seeds
- Ω teaspoon mustard seeds
- 2 teaspoons sea salt
- 2 tablespoons whey (if not available, add an additional 1 teaspoon salt) *see note below
- 1 cup filtered water **see note below

In a bowl, mix cabbage with juniper berries, cumin, and mustard seeds. Mash or pound with a wooden pounder for several minutes to release juices. Place in a quart-sized wide-mouth Mason jar and pack down with the pounder. Mix water with salt and whey and pour into jar. Add more water if needed to bring liquid to top of cabbage. There should be about one inch of space between the top of the cabbage and the top of the jar. Place a lid on the jar and close very tightly. Lacto-fermentation is an anaerobic (without oxygen) process and the presence of oxygen, once fermentation has begun, will ruin the final product. Keep at room temperature for about 3 days. Transfer to a root cellar or the top shelf of your refrigerator. The sauerkraut can be eaten immediately but it improves with age.

* If you use whey, it must be in the liquid form, not powdered. You can make your own whey by pouring yogurt into cheesecloth, a coffee filter, or a clean kitchen towel. Capture the whey liquid as it drips into another container. Using whey allows you to decrease the amount of salt needed and will improve consistency. It is naturally rich in both lactic acid and lactic acid-producing bacteria.

** Don't use tap water if it is chlorinated. The chlorine can destroy the lactic microbial organisms and prevent the fermentation.

Note: It's normal for white spots or a white film to form on the surface of the liquid covering the sauerkraut. It's a form of yeast called kahm. Although it's totally harmless, it can impart a bad taste to the cabbage so I would recommend simply removing it gently with a spoon before removing any of the sauerkraut.

You can order *Nourishing Traditions* from Amazon.com, Barnes & Noble (www.bn.com or 800-843-2665) or the book's publisher at 877-707-1776. At the time of this writing, Barnes & Noble is offering a 20 percent discount off the normal $25 cost of the book.

Lactic-acid fermentation is good way to preserve foods, and the flavor of vegetables preserved in this manner improves with time. While this sauerkraut can be eaten after only 3 days, some say that sauerkraut doesn't fully mature for at least six months. Whenever you decide to eat it, you'll start to reap the benefits.

Keep in mind that, due to their acidity, lactic acid-fermented vegetables should be used as a complement to meals and not eaten in large quantities. Consistency is the key, so eat small amounts (3 or 4 tablespoons) on a daily basis.

The acidity of these fermented foods is such that bacteria strains that cause spoilage are unable to grow. This principle has made fermentation a safe, low-cost method of preserving foods which has been used effectively for thousands of years. *Don't think, however, that canned or commercially-prepared products (like sauerkraut) provide anywhere near the same health benefits as the raw product you can make at home. The FDA requires commercial sauerkraut to be pasteurized, which effectively destroys all the bacteria, including the beneficial lactic acid-producing strains.*

Raw sauerkraut juice also confers health benefits. It can be used in place of vinegar. You can also dilute it with water and drink it (if you remove any of the juice from vegetables you intend to continue to store, just make sure that you add enough additional water to cover the cabbage or other vegetables). Sauerkraut juice has been used extensively as a remedy to rid the body of various intestinal worms (pinworms, roundworms, and tapeworms), especially in children. The recommended dosage is one-half cup before each meal, in addition to one-half cup of sauerkraut each morning on an empty stomach until the problem is resolved.

Help for Those Who Don't Want to Roll Their Own

While we're on the topic of lactic acid, there is a commercial product you should be aware of called Lactic Acid Yeast. It is a wafer made by Standard Process Laboratories in Palmyra, Wisconsin.

These wafers contain a blend of ingredients, including a mycellium type of yeast (*Saccharomyces cerevisiae*) that converts all forms of carbohydrates into lactic acid. The product has been around since 1939, and I've never found another supplement to be as effective when it comes to stopping diarrhea and helping re-establish the bacteria flora of the lower bowel.

Over the years, another product, *Lactobacillus acidophilus*, has gained a reputation as the supplement to take to improve the bacteria of the intestinal flora–but it does have certain limitations. Most importantly, it can change only milk sugar into lactic acid. In other words, if you've been on antibiotics and you want to return the good bacteria and correct the pH of your colon with *Lactobacillus acidophilus*, you need to take milk products along with the supplement.

On the other hand, you can use Lactic Acid Yeast and it will help convert *any* carbohydrate from your diet into lactic acid. Two wafers with each meal for adults will stop diarrhea, often within the same day.

Lactic Acid Yeast wafers work on much the same principle as lactic acid-fermented products. If you begin to include these kinds of foods in your diet, you probably won't need the wafers–but the wafers can sure come in handy when you're traveling.

During travel, especially internationally or to third-world countries, you tend to encounter a wide range of organisms your body may not be used to dealing with. If the bacteria in your lower bowel can't deal with the new organisms, your body proceeds to flush them out as a safety mechanism, which accounts for the diarrhea. Stopping the contractions and movement of the intestinal tract with drugs such as Lomotil may stop the diarrhea, but it also brings the cleansing process to an abrupt halt. This, in turn, can cause a prolonged toxicity problem throughout the body.

In some severely chronic cases of diarrhea, the quickest way to resolve the problem is to do a series of enemas, which actually helps the body remove the toxins and stop the diarrhea. This process should be followed by a diet of home-

made applesauce, chlorophyll liquid, and white rice–all of which help soothe and heal the irritated colon.

Lactic Acid Yeast wafers are also great for small children or elderly adults who won't eat fermented foods for one reason or another. Prolonged diarrhea in either of these age groups can lead to some very serious consequences rather quickly, and needs to be corrected as quickly as possible.

The standard dose of one wafer with each meal can still be used with the frail or the elderly. With young children (under 5), I've used the product hundreds of times to stop diarrhea within a matter of hours. Pulverizing half a wafer and adding it to either a couple of spoonfuls of food or whatever liquid the child will drink usually brings quick relief.

Lactic Acid Yeast wafers can be purchased through your health care professional. Alternatively, you can call Mountain Home Nutritionals at 800-888-1415 to order this product. Just mention code 02125N.

More of a Bad Thing Is Worse

Don't get lured into the trap of thinking that stronger antibiotics are the answer to all the superbugs we're starting to see. The overuse of antibiotics is what started this problem in the first place. Prescriptions for antibiotics are still given out routinely for everything from intestinal complaints to the common cold. They are also being used to accelerate production in the cattle and poultry industry. Even if you use prescription antibiotics only as a last resort, you're still faced with the constant problem of antibiotic residue in the food and water supply. These antibiotics destroy beneficial lactic acid-forming bacteria in the lower bowel, which need to be replaced.

By adding lactic acid-fermented foods to your diet, you can easily accomplish many of the same "miraculous" results that scientists from around the world are just beginning to see in their labs. By using a technique developed thousands of years ago, you'll be decades ahead of the latest research.

Although our ancestors documented and reaped the benefits of lactic acid-fermented foods for centuries, this is something our present society will have to re-discover on its own.

Take care,

PS: It's been a year now since drdavidwilliams.com was launched, and I'd like to express my gratitude to the many readers who have visited the website.

Hopefully, the many services provided at the site have made it more convenient for you to access the kind of unique health information and natural remedies I work to present to you each month in *Alternatives*.

To celebrate this anniversary, Mountain Home Nutritionals is offering free shipping on all nutritional supplements ordered online at drdavidwilliams.com throughout the month of April.

I hope you will continue visiting the website often. It remains a "work-in-progress," with new features and services under development all the time.

We Hope to Hear From You!

Dr. Williams greatly appreciates hearing from you, and gears his research to the concerns you express to him in your letters. Of course, practical and ethical constraints prevent him from answering personal medical questions by mail or email, but he'll answer as many as he can in the Mailbox section of . For our part, we'll do our best to direct you to his issues, reports, and products related to the subject of your interest.

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