Alternatives®
FOR THE HEALTH-CONSCIOUS INDIVIDUAL
December 2007 Volume 12, No. 6

It's Here...


Dr. David G. Williams

For more than 15 years I've been discussing the dangers of antibiotic overuse and the ultimate consequences.

Your body ordinarily does an effective job of protecting you; the immune system produces natural antibodies to recognize and destroy foreign bacteria. Indiscriminate use of antibiotics, however, can both weaken your immune system and create the antibiotic-resistant "superbugs" that have begun to surface over the last several decades.

Under normal circumstances, your immune system becomes stronger and more able to adapt after each successful encounter with pathogenic bacteria. Studies have shown, however, that white blood cells are less active in attacking bacteria that have been treated with antibiotics. And lower numbers of natural antibodies are produced. It's as though the immune system is being told to step back because the problem is under control.

Antibiotics don't kill all the targeted bacteria right away. Instead, some survive a bit longer, perhaps for a few hours or a few days. And when patients who are given antibiotics don't take the drug properly—in particular, stopping the drug when they begin to feel better, instead of finishing the entire prescribed course—the more resistant bacteria that survived the initial exposure are the ones left to reproduce. Repeating the process in hundreds or thousands of patients produces a new, mutated strain of bacteria that's completely resistant to the given drug.

To make matters worse, livestock and poultry are routinely given antibiotics to promote growth and to prevent infections from spreading through a herd or flock. The constant low level of antibiotics is effective at picking off the weaker bacteria, but again the result is that the remaining bacteria are stronger and more resistant. It doesn't take long for bacteria to migrate from the barnyard into human populations.

Although just recently there has been an enormous amount of coverage in the media about drug-resistant infections, it isn't a new problem. In fact, penicillin was introduced in the mid-1940s, and by the 1960s there were already reports of bacterial strains that had mutated to the point that they were resistant to its effects. While it may have taken 20 years with this first antibiotic, resistance to other antibiotics has come much quicker.

Penicillin was initially considered a medical miracle and used quite sparingly. That's not the case with antibiotics anymore. They're prescribed at the first sign of a sniffle, before and after dental work, and even to "prevent" secondary infections with a viral infection. They are even sold over-the-counter. Probably half of all kitchen, bath, and bathroom soaps now contain antibiotic compounds and are marketed as antibacterial or bactericidal.

(If you'll recall, some years ago I told *Alternatives* readers how to buy the antibiotic Terramycin 343 over the counter at animal supply stores. But remember, I recommended it for use only in extraordinary situations. On top of that, if you're reading *Alternatives*, you're likely to have more common sense than the average person.)

Over the years I've focused on providing information on natural, safe, and effective ways to knock out bacte-

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

rial infections without the need for antibiotics. There are far too many to cover here, but if you've kept your back issues they will be easy to find (Xlear, neem, propolis, Citricidal, castor oil, hydrogen peroxide, PAV tree pitch, eucalyptus oil, zinc, vitamins A, D, C, et cetera). Antibiotics, and all drugs for that matter, shouldn't be used casually. They all come with a hidden cost down the road. [*Editor's note: For a rundown of Dr. Williams' recommendations to fight infection, see the Subscriber Center of the* Alternatives *Web site,* www.drdavidwilliams.com.]

The other aspect of antibiotic misuse, one that never seems to garner any attention, is that of destroying the beneficial bacteria in the lower bowel. Antibiotics are indiscriminate. They kill all forms of bacteria, even those in the colon that are essential for:

- forming certain vitamins and enzymes;
- deactivating cancer-causing compounds;
- detoxifying toxic environmental compounds;
- regulating hormone and cholesterol levels; and
- preventing the imbalance and overgrowth of disease-producing bacteria and fungi.

Always keep in mind that your colon houses your second immune system. If your colon isn't in the best of shape, then neither is your immune system.

A Clear and Present Danger

What triggered all the recent publicity was the result of a 2005 survey reported in an article in the *Journal of the American Medical Association* (*JAMA 07;298(15):1763–1771*).

The research investigated the prevalence of a bacterium known as MRSA (methicillin-resistant *Staphylococcus aureus*). The more common form of the bacteria *S. aureus* is something most of us are exposed to on a very regular basis. It's one your immune system is capable of handling. The antibiotic-resistant form, however, can be deadly if it gains entry through a break in the skin (cut, scrape, wound, et cetera).

According to the report, the number of MRSA infections in this country is three times higher than previously thought. Conservative estimates are that each year over 94,000 individuals in the US develop one of these antibiotic-resistant infections—directly resulting in over 18,000 deaths. MRSA kills more people in this country than HIV/AIDs.

(I should mention at this point that the term "methicillin resistant" is somewhat of an understatement. Methicillin itself has long ago gone out of favor in this country, so most of the MRSA bacteria have never been exposed to it. In fact, they have become resistant to *all* the various penicillin-type drugs.)

MRSA infection can start in a small cut, with the typical inflammation, swelling, redness, and pain, and quickly develop into a systemic infection. Blood poisoning (septicemia), heart valve damage or failure, and the massive infection can inhibit the blood's ability to clot—resulting in unstoppable internal bleeding and death.

A Little Common Sense, Please

What has probably shocked the public the most about MRSA is not that it's been caused by antibiotic use, but rather that its transmission can generally be prevented simply through improved hygiene.

Years ago when I was alerting *Alternatives* readers to the problem, I cited a study showing that 12 percent of all stethoscopes tested harbored the virulent MRSA. And not only were the stethoscope heads not cleaned before being used on the next patient, they weren't routinely cleaned at all. MRSA can live on the sleeve of a lab coat, stethoscope, bed rail, gym bench, moist towel, et cetera for weeks. Simply washing hands and instruments in hospitals would make a tremendous difference, since 85 percent of all MRSA infections begin in hospitals. Sadly, hand washing still isn't something being enforced in most hospitals. (The obvious lesson here is that hospitals are dangerous places that need to be avoided if at all possible.)

The 15 percent of infections occurring outside hospital settings is what has everyone worried. The public is just now being alerted to the fact that thousands of

ALTERNATIVES® **Author: Dr. David Williams; Publisher: Robert Kroening; Editor: Bill Todd**
ISSN# 0893-5025. Published monthly for $69.99/yr. by Mountain Home Publishing at 7811 Montrose Road, Potomac, MD 20854. Editorial Office: 7811 Montrose Road, Potomac, MD 20854. Periodicals postage paid at Rockville, MD and at additional mailing offices.

POSTMASTER: Send address changes to *Alternatives*, PO Box 2050, Forrester Center, WV 25438.

individuals in schools, day care centers, and other community facilities have died after contracting MRSA.

An Ounce of Prevention

Like nearly all infections, MRSA causes more fatalities in the elderly, the very young, and others with weaker immune systems. So the practical solution for protecting yourself is multi-fold.

I hate to say it, but there's a term we'll be hearing more and more often in the years to come: isolation. If you hear of any outbreak in your area, it's best if you can avoid those areas and stay primarily at home until the problem passes. (MRSA is generally passed through physical contact with an infected person or object, so isolation isn't that important, but the precaution will be necessary for other infections that can be spread by airborne droplets—such as the flu, SARS, bird flu, et cetera.)

Anything you can do to improve your immune function will put you at an advantage. Eating fermented foods, taking a high quality probiotic, and keeping your colon in top shape are imperative. (In the September 2007 *Alternatives* issue, I wrote about the product XPC from Diamond V Mills, which is another product I highly recommend for keeping your immune system in top shape. And it costs less than a penny a day. As I mentioned last month, it's available from Wholesale Feeds, at 319-377-5528. Remember that the product is sold for animal use, so you can't ask them questions about use for humans.)

Make sure your doctor washes his/her hands and any equipment used before any examination. There's no need to become fanatical, but don't share soap, toothbrushes, towels, et cetera. Keep cuts or wounds covered. Use skin creams, particularly after shaving, because they help provide an oil-based protective barrier on the skin. Keep in mind that several of the MRSA infections originating in schools were thought to be transmitted by changing benches in the gym or through the community use of gym equipment. These items should be wiped down, disinfected, and cleaned regularly.

Disinfecting certain items around the house is basically common sense. In addition to hand washing for everyone, if someone is sick then obviously everything they touch needs to be disinfected—doorknobs, phones, computer keyboards, remote controls, and other items.

Around the house you can use diluted chlorine bleach or hydrogen peroxide, both of which are effective, inexpensive, and readily available. They are both hard to beat, but they do have a few downsides. Some people don't like the idea of using bleach or worry about the bleaching or whitening action of each product. And the handling and mixing can be an issue for some. Keep in mind also that chronic exposure to bleach may be related to increased rates of asthma and chronic bronchitis.

My Disinfectant of Choice

Another great tool to use for disinfecting hospitals, houses, gyms, et cetera is ozonated water. It's non-toxic, non-staining, and works great.

I first saw ozonation being used on a wide scale when I worked with doctors some years ago in Cuban hospitals. They were working on very limited budgets, but their ability to "superoxygenate" water and other liquids was put to good use.

Most commonly, oxygen is found in a molecule consisting of two atoms, O_2. Ozone is the triatomic form of oxygen (tri meaning three), or O_3. The downside of ozone is that it is very unstable—that is, it breaks down very quickly back into oxygen. This reaction can be slowed by dissolving the ozone in water (ozone is 13 times more soluble in water than oxygen).

One the best things about ozone is that it disinfects 3,100 times faster than chlorine. Over the last decade or so, ozone generators have become more cost effective, to the point that water treatment plants and pool owners are starting to use ozone instead of chlorine to purify water.

Several of the hospitals and doctors I deal with in Canada recently told me about an Ontario company that produces small-scale ozone generators. Tersano, a company in St. Catharines, Ontario, developed the Lotus Sanitizing System. One of the doctors I spoke with was originally from Ghana, and was taking several units back to hospitals in his home country.

I had a chance to test one of the units. Not only are these being used in local hospitals for sanitizing, but the unit is also small and economical enough for home use.

The entire sanitizing system generally sells for between $149 and $169. I'll admit that would buy a lot of bleach and/or hydrogen peroxide, but with this unit you can make a quart of sanitizing spray from regular tap water for pennies. And, it can be used to disinfect practically anything from toilets to baby bottles without worry about stains, bleaching, or chemical residue. Best of all, Tersano couldn't have designed this thing to be any easier to use.

The unit consists of a base unit that sits on the counter. You can place a spray bottle or a multi-purpose bowl and lid into the base. To make the ozone spray, just fill the

(*Disinfectant continued on page 45*)

NEWS TO USE FROM AROUND THE WORLD

Help for Parkinson's

HAIFA, ISRAEL—Researchers at the Technion Institute of Science have shown that feeding green tea extract to mice with Parkinson's and Alzheimer's disease not only protects brain cells from dying, but also helps restore damaged brain cells. If you're not already drinking green tea, it's probably time to start.

We've known for some time that drinking green tea has a distinct positive effect on brain function as we age. The incidence of age-related neurological disorders, Alzheimer's, and Parkinson's is significantly lower among the tea-drinking Asian cultures than in both Europeans and Americans. This is the first study, however, that shows the actual effects of EGCG, the primary antioxidant in green tea, in the brain on a molecular level. The report was presented this past September at a tea symposium in Washington, DC.

A few milligrams per kilogram of bodyweight were given daily to mice with induced Parkinson's disease. (The dosage was comparable to what you would get from drinking two to four cups of green tea a day.)

The EGCG prevented additional brain cells from dying, and also reduced compounds that lead to lesions in the brain. Follow-up studies found that, in addition to preventing further damage, EGCG triggered the regeneration of nerve cells that were already damaged. Prior to this study, the general feeling was that once a neuron or nerve cell was damaged there was no way it could be repaired.

Although these studies involved mice, the findings have led to ongoing tests in China involving humans to see if EGCG can slow the progression of the disease. (As I mention in the longer article about butyrate, many pathways in the mouse brain mimic ones found in humans.)

I would strongly suggest not waiting for the results. There's no downside to including two to four cups of green tea in your current regimen. We already know about its protective effects when it comes to cardiovascular disease, cancer, and diabetes. Knowing that it might be the first natural substance to both prevent destruction and restore neuron function in the brain should be an incentive to start drinking green tea now.

A Honey of a Bandage

IZMIR, TURKEY—Researchers at the Ege University School of Nursing have found that using honey to treat skin ulcers is more effective than using the conventional treatment of ethoxy-diaminoacridine plus the antibiotic nitrofurazone. In the study of 26 patients with 50 advanced pressure ulcers, the wounds treated with the honey healed roughly four times faster than the conventionally treated ones. (*J Wound Ostomy Continence Nurs 07;34:184–190*)

Skin ulcers are notoriously difficult to treat and slow to heal, particularly if a bacterial infection with either *S. aureus* or *Pseudomonas aeruginosa* sets in. The wound can result from constant pressure, poor circulation, or a prior infection. Pressure ulcers are what are often called bedsores (also known as *decubitus* ulcers), but they can also arise from long-term sitting in a poorly fitted wheelchair, or the use of a poorly fitted orthotic or other orthopedic device.

In another trial, nurses at the Katharine House Hospice in Adderbury, England applied a type of honey known as manuka to skin ulcers that had become infected with MRSA in three patients, all of whom were in the facility for end-of-life care. The honey produced healing in all three, including the reduction of odor that can come from an infected wound. (*Palliat Med 06;20:557*)

Now a company in Princeton, New Jersey, Derma Sciences, has introduced a line of bandages impregnated with manuka honey. The company received FDA approval in July to market the bandages for the care of surgical wounds, but I imagine they would work just as well for the care of nearly any type of wound or sore.

MediHoney bandages are available now from The Wound Care Shop. You can contact them at *woundcareshop.safeshopper.com* (note there's no *www.* at the beginning) or call them at 866-207-5909. The bandages are somewhat expensive, at around $125 for a box of 10 of the two-inch by two-inch size. It would be cheaper, if a bit messier, to make your own. Simply soak a gauze pad in the honey, then cover it with a second pad and secure the dressing as you would any other.

Manuka honey, from the *Leptospermum scoparium* tree found in New Zealand, has antibacterial properties, in addition to the wound-healing ability of regular honey that I've written about in the past. In fact, manuka honey comes with a rating of its antibacterial strength, which can vary depending on the specific area the trees came from. The rating system is known as unique manuka factor, or UMF. Look for a honey with a UMF of at least 10.

Manuka honey is available in nearly any health food store, though it is expensive compared to other honeys. You can also find it, in strengths from UMF 10 to UMF25+, from Oraganics, at *www.oraganics.com* or 800-991-8871.

I'm sure the folks at Derma Sciences would say that their product is better because it's sterile, but after all the whole point of the honey is to kill bacteria, so I don't see that as much of an advantage.

(*Disinfectant continued from page 43*)
bowl or bottle up to the proper level, place it on the base, and hit the button. In a couple of minutes—it shows you when—you have superoxygenated water for cleaning; removing stains from clothes, carpets, or furniture; and sanitizing countertops, vegetables, or whatever.

This is the same unit now being used in hospitals, commercial kitchens, and other areas that require frequent and verifiable sanitation.

The multi-purpose bowl is used to clean and sanitize small items. The company recommends using it to sanitize everything from fruit and vegetables to baby toys. They claim that using the system on fruit helps extend its shelf life, but I didn't find that to be true. All of the other claims, however, concerning deodorizing, sanitizing, stain removal, and cleaning did pan out. In fact, I think this is an amazing product. The only real downside was the size—about 11 inches across. Like everything else, it takes up counter space and the accessories are fairly large and need to be stored somewhere.

I really don't consider this much of a problem by any means, but once you make the superoxygenated water it stays at full strength for only 15 minutes. This is understandable, considering it is an unstable form of oxygen, and it's by releasing this extra oxygen molecule that the ozone is able to destroy pathogens (bacteria, viruses, fungi, mold, et cetera). It's easy enough, however, to make one batch, clean with it, and if you need more just make another.

You can also order separate attachments for cleaning baby bottles and to treat drinking water. The water purification system would be one of the more inexpensive methods to help purify drinking water, but keep in mind it has it limitations. In most circumstances it would be far better than simple filtration systems, and may be adequate under many circumstances, depending on your water quality to start with. It works well on pathogens and certain classes of toxic chemicals, but it doesn't remove minerals like fluoride. The company provides test data on just what contaminants it can neutralize. This would also be an effective alternative to those emergency events where the water is contaminated and must be boiled before use. Assuming you still have electrical power, the water purification system will produce a half gallon of purified water in about 10 minutes.

If this is of interest to you, you can go to the company's Web site at *www.tersano.com* and get more details, or call them at 800-808-1724. I believe so strongly in the benefits and value of this product that I've arranged for a special deal through Mountain Home Solutions. Call them at 800-211-8562 and mention the Service Code found on the back page of this issue, and you'll get the discounted price.

There's More On the Way

Unfortunately, antibiotic-resistant bacteria and more virulent strains of pathogens are something we're going to have to deal with for the foreseeable future. So far I've mentioned only the MRSA strain of bacteria. There are others now starting to spread.

Two others that are just as virulent as MRSA that you'll be hearing more about in the future are *Acinetobacter baumannii* and *Enterococcus faecium*.

Experts are saying the increase in *A. baumannii* cases being reported is "just the tip of the iceberg." There's currently only one antibiotic that works on this strain, and it's only a matter of time before the bacteria will mutate and make that drug ineffective. This drug-resistant, "flesh-eating" bug is spreading quickly, primarily within military hospitals, and has a mortality rate that ranges between 10 and 60 percent.

The other worrisome bacteria, *Enterococcus faecium*, is associated with urinary tract infections, meningitis, inflammation of the heart, and blood poisoning. Just as with *S. aureus*, *E. faecium* has developed resistance to the primary drug used to treat it, the antibiotic vancomycin. This new form is known as VRE, or vancomycin-resistant *Enterococcus*. In their 2003 report on *E. faecium* infection, the CDC came right to the point, acknowledging "the possibility of a postantibiotic era." To me, that sounds like the bureaucratic equivalent of throwing up their hands. (*Emerg Infect Dis 03:9; 1108–1115*)

Making matters worse, there's evidence that genetic material is being transferred between VRE and MRSA, conferring vancomycin resistance on *S. aureus*. And, as you might have guessed, the number-one treatment for MRSA infection is...vancomycin.

While there seems to be a great deal of official concern over the development of VRE, one point has gotten lost in the discussion: *E. faecium* is a normal resident in a healthy gut. It's one of many bacteria that are harmless, or even beneficial, when found in their usual environment, but which can be quite harmful when they migrate into other parts of the body. The most effective control for potentially bad bacteria is good bacteria. You can understand the value of maintaining the bacterial balance in your GI tract. Taking a high-quality probiotic product, or eating fermented foods regularly, turns out to be an important step in preventing infections.

(*MRSA continued on page 47*)

A Touch of the Grape Is Good for Your Brain

Question: My family has a history of developing Alzheimer's disease. I'm only in my 50s, but watching what has happened to other members of my family has me scared. I've read your past issues and recommendations for suggestions on preventing the disease, but I'm always looking for more information that can help prevent the problem. I'm following your suggestions of including curcumin, L-carnitine, lipoic acid, et cetera. Is there anything else you can recommend?

Thanks for all your help.

— Dan K., Fargo, North Dakota

Answer: I wish everyone would take a closer look at their family history and take it into consideration as they develop their nutritional programs. If everyone says you look and act exactly like Uncle Larry, then it should be of interest to know about any health problems Uncle Larry might have. The same holds true for your parents and grandparents. A detailed family health history is the "poor man's genetic testing."

Dozens of factors can cause memory loss like that associated with Alzheimer's disease. I mention a couple elsewhere in this issue. Another one that's currently overlooked is the use of the highly popular statin drugs. One of my first recommendations would be to avoid the use of all drugs if possible. And for any that you decide to take, make sure you know the stated side effects and keep an eye out for those such as dementia and other neurological problems.

The public is constantly being prescribed drugs without being informed of the ultimate consequences. I have serious doubts that "preventive" drug treatment prolongs life; instead, I think it just changes the cause of death. Examples could fill a book.

One example is the anti-cholesterol statin drugs. Two large drug trials come to mind. One trial known as CARE (Cholesterol And Recurrent Events) found that the drug Pravachol reduced the risk of a heart attack by 24 percent. It also found that it increased the risk of women developing breast cancer by 1,100 percent.

The PROSPER trial followed 5,000 participants, aged 70 to 82 years old, who took a statin for three years. The drugs reduced deaths from cardiovascular disease by a remarkable 24 percent. What wasn't well publicized, however, was that those on statins developed cancer at a higher rate, and the drug showed no benefits whatsoever in women.

And statins aren't the only drugs where the patients don't get the full story. The list is seemingly endless.

One of the most common methods of treating high blood pressure is through use of diuretics or "water pills," and hydrochlorothiazide is one of ones most frequently used. Studies have consistently shown that these diuretics significantly increase the likelihood of developing diabetes. How many doctors tell their patients that?

I'll step off my soapbox now and get back to your initial question.

Back to the Brain

Along with the supplements and dietary changes you've already made, one of the best things you can do is start taking resveratrol.

The long-term treatment of so many patients with Alzheimer's has the potential to bankrupt this country, and the pharmaceutical companies know there's a fortune to make if they can come up with a drug to treat it. Researchers, however, have already learned that resveratrol appears to be one of the most powerful substances ever discovered for both the prevention and treatment of the disease.

In Alzheimer's patients, amyloid peptides bind together into plaques that embed themselves between brain cells. The peptides and plaques are toxic and cause brain cells to die. Researchers have tested dozens of antioxidants to see if any would have an effect on the plaques. Resveratrol had a profound effect.

While it doesn't appear that resveratrol can prevent the plaques from forming, it activates a natural "protein-eating" compound within the brain. These compounds called proteasomes break up and remove the plaques. (The proteasomes are able to distinguish between proteins that should be present, such as neurotransmitters, and those that shouldn't.) Further research found that resveratrol delivers a second punch to the disease as well, by actually neutralizing the brain cell–killing effects of the plaques. (*Brain Res Rev 06;52:316–326*) (*J Biol Chem 05;280:37377–382*) (*J Neurochem 06;96:305–313*) (*Br J Pharmacol 00:131:711–720*)

This is obviously the type of news that should make headlines on every newspaper in the country and the opening story on the evening news. It hasn't and it won't. Resveratrol is a natural product. Until some pharmaceutical company comes up with a patentable, synthetic, prescription drug based on resveratrol, this story will remain buried. And while the researchers I spoke with were elated with their findings, in their published reports they cautioned that resveratrol needs to be researched far more extensively before it can be recommended for use with Alzheimer's disease.

The truth is, however, it's totally safe, effective, and available. Use it now.

(MRSA continued from page 45)

And no one else seems to be talking about tuberculosis (TB). This disease is an old problem with a new twist. It has now mutated to the point that very few drugs work on the pathogen. While the number of cases in the US seems to be stable at this point, an extremely drug-resistant strain of TB known as XDR (for *extremely drug-resistant*) is currently spreading to practically every part of the globe—including the US.

The new strain of TB started in southern Africa and is virtually untreatable. In one outbreak, it killed 52 of 53 infected patients. It's thought to be spreading quickly in the hundreds of thousands of immune-compromised HIV and AIDs patients. Those people aren't the only potential victims, however. Just as with MRSA and the other resistant bugs, anyone with a weakened immune system is at increased risk of infection. The new TB problem is a time bomb just waiting to explode.

Better Safe Than Sorry

I still believe it's not a matter of if, but rather when, we have a large-scale epidemic with one of these drug-resistant pathogens. When it does happen, being able to sanitize and disinfect your immediate environment is one crucial step that will make a significant difference on how it affects you and those around you. And disinfecting with an inexpensive, easily renewable form of water is going to be far more convenient that messing with bleach or hydrogen peroxide.

Personally I think the Lotus Sanitizing System is one tool that could benefit every household. I know $150 or so isn't cheap, but, if you actually put it to use, it might turn out to be worth its weight in gold. (And keep in mind that, while they may be more messy and less convenient, 3 percent hydrogen peroxide and diluted chlorine bleach can also be utilized. And those liquids can be used when the power isn't on.)

I guess this sort of blows the surprise, but I plan on ordering a unit for my parents for Christmas.

Broccoli and Your Brain

We often use the term "lost" when referring to one's memory. Based on a recent study at MIT, however, it appears that we don't really lose our memory; rather, it can become inaccessible due to either nerve damage or, more commonly, a chemical derangement that impairs the transmission of nerve impulses within the brain. (I'll tell that to my wife the next time I misplace the car keys.)

The research, involving mice, has found what could be one of the keys to recovering memory and enhancing our ability to learn. (It has been accepted for some time now that the mechanisms for learning and memory in mice are much the same as those in humans.)

Their research was quite detailed and complicated, but the one "pearl" that can be extracted from their work has to do with the compound butyrate (or butyric acid). It's a compound I've talked about before as a very successful method of treating IBS (irritable bowel syndrome).

Butyrate is a fatty acid that's produced in your colon when beneficial bacteria ferment dietary fiber.

How Fiber Fights Cancer

The cells lining the colon wall use butyrate for energy, as do the beneficial bacteria that reside there. Increased butyrate production is also one of the primary reasons high-fiber diets are effective in preventing colon cancer.

We hear a lot in the news about how taking the painkillers aspirin and ibuprofen can help prevent colon cancer. Cancer cells contain abnormally high amounts of the protein called interleukin-6 (IL-6), which interferes with natural cell suicide and makes them practically immortal. Nonsteroidal anti-inflammatory drugs like aspirin and ibuprofen block the actions of IL-6. Butyrate does the same thing, but without the side effects of aspirin and NSAIDs such as intestinal bleeding.

So if you want the same anticancer benefits of aspirin, without the dangerous side effects, increase your butyrate levels through a high-fiber diet.

As a side note, one of the downsides to staying on many of the popular low-carbohydrate diets is a decrease in butyrate production. Diets low in complex carbohydrates (that is, low-fiber, low-roughage diets) are a surefire way to increase your risk for colon cancer. This new research indicates that the diets also have a detrimental effect on your memory and learning ability.

Back to the Brain

Mice with genetically severe nervous system degeneration were treated by increasing the level of butyrate in their body, and then compared to untreated mice. While the nervous systems of the untreated mice continued to deteriorate, those given butyrate not only regained their memory, but also exhibited significantly greater brain activity and capacity for learning. (*Nature 07;447:178–182*)

This research could turn out to be a major breakthrough in the treatment of degenerative nerve diseases that are becoming so common in our society. Although

butyrate doesn't appear to repair or regenerate neural pathways, it appears to help re-establish pathways through existing neurons. This could be a true godsend for individuals suffering from dementia, and maybe even from Alzheimer's and other degenerative problems.

It's easy to increase butyrate levels through either the diet or supplementation.

For most of us, a change in diet is all that's necessary. We just need to eat more high-fiber foods (nuts, seeds, bran, oats, whole wheat products, and practically all vegetables and fruits, especially unpeeled and raw).

For even better results, consume more of the cruciferous vegetables. These are high in sulfur, and the sulfur-containing compound that works like butyrate is called sulforaphane. The richest sources are broccoli sprouts and broccoli, but sulforaphane is also present in the other cruciferous vegetables such as cauliflower, cabbage, and kale. The compound is released with chewing, but in the case of broccoli you can maximize the amount released by steaming it lightly for about 3 to 4 minutes until it is crisp-tender. In addition to helping preserve and restore your memory, sulforaphane is one of the most powerful anticancer compounds ever found in food.

Hitting the (Supplement) Bottle

For individuals who are already suffering from noticeable memory or dementia problems, supplements that contain butyrate and/or sulforaphane can be added along with the dietary changes.

Not too many companies market butyrate products. One of most readily available is called Butyrex by T.E. Neesby. One of the least expensive sources I found is a company called Jigsaw Health, which sells a 250-count bottle for just under $30. It's more than a month's supply if you take 2 capsules with each meal. After a month or two most people can begin to taper off to a smaller maintenance dose of a capsule or two daily. They can be contacted at *www.jigsawhealth.com* or by calling 866-601-5800. Use the promotional code "Alternatives" when you order over the phone or on the Web and they'll give you a 15 percent discount on the product.

I should tell you that Butyrex has a really offensive odor. The word butyrate is derived from the Greek word for butter. Butter contains about 2 percent to 3 percent butyrate, and when butter goes rancid butyrate is what gives it the foul smell. The same goes for rancid Parmesan cheese. While we're speaking of unpleasantries, butyric acid also contributes to the distinctive smell associated with vomit. You can lessen the smell of Butyrex by keeping it stored in the freezer.

Sulforaphane supplements generally come in the form of broccoli sprout powders. There are several on the market, available in practically any health food store. Jarrow makes an excellent product, and I'd just recommend following the directions that come with each product since the potencies vary somewhat. It's a lot less expensive, though, to develop a taste for broccoli.

(As I've mentioned before, I make my own sauerkraut and I recommend you do the same if possible. Sulforaphane and butyric acid are just two of the many beneficial components of true live sauerkraut.)

Another, less expensive, method of increasing your levels of butyrate is by consuming gum arabic (also called gum acacia). This is the natural gum, produced in the Middle East, that you see commonly used as a stabilizer in ice cream, chewing gum, and "gummy" candies. One small study using seven patients showed that you can double butyrate levels in only 8 weeks with a dosage of 25 grams a day. (*Kidney Int 06;69(2):257–265*)

At the above dosage gum arabic wouldn't be that inexpensive, but significant increases in butyrate levels could be obtained over a longer period of time using a dose of 5–10 grams of the powder per day. In bulk, a pound (454 grams) sells for less than $10 a pound. I get mine from a company called Liberty Natural Products, at *www.libertynatural.com* or 800-289-8427. Typically they have a $50 minimum on orders, but they'll waive that requirement for first-time buyers.

Take care,

If you have questions or comments for Dr. Williams, please send them to the mail or e-mail addresses listed to the right. Of course, practical and ethical constraints prevent him from answering personal medical questions by mail or e-mail, but he'll answer as many as he can in the Mailbox section of *Alternatives*. 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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