

Alternatives[®]

FOR THE HEALTH-CONSCIOUS INDIVIDUAL

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Dr. David G. Williams

A Trace of Support for Nerve Problems

Of all the research I do, there always seems to be a void when it comes to breakthroughs or any new treatment options for ALS (amyotrophic lateral sclerosis, or Lou Gehrig's disease). I'm always on the lookout, because it has to be one of the worst diseases imaginable. My brother-in-law died of the disease, and I pray I never experience the suffering he endured or the day-to-day heartbreak and helplessness my sister and their family lived through.

Most victims deteriorate rapidly, beginning with progressive weakness, progressing to total paralysis, and succumbing to the disease in a couple of years or so. You would expect that any breakthrough, no matter how small, would be worthy of at least a mention on the nightly news, or a sub-headline in major newspapers, or a short article in every health publication. Sadly, that's not the case. Researchers at the University of Pisa, in Italy, recently revealed that the trace mineral lithium could significantly delay the progression of ALS, yet it still remains an unreported story. If you know of anyone with ALS, please pass this information along.

Two groups of ALS patients were involved in the study. One group of 16 patients took 150 mg of lithium carbonate twice daily along with the medication riluzole, which has become the standard drug of choice for treating ALS. Another group of 32 patients just took the riluzole. At the end of the 15-month study, 30 percent of the patients taking only riluzole had died—and all of those taking the lithium were still living. What made the results even more exciting was that in those taking the lithium the disease progressed very slowly, if at all, while the condition of those on just riluzole had continued to worsen. *In effect, the lithium practically stopped the progression of ALS in its tracks. (Proc Natl Acad Sci USA 08;105:2052–2057)*

Keep in mind that the dosage of lithium used in this study, 150 mg twice daily, is quite high. It's definitely not a dose you would want to self-medicate with or give to a loved one without being monitored by a doctor familiar with the therapy. It shouldn't be a problem for most adults, but it definitely needs to be monitored. (To put this higher dosage in perspective, I've recommended dosages of 50 *micrograms* three times a day for treating depression. Other doctors have routinely used what they consider low-dose lithium therapy [1 to 4 mg a day] successfully for depression as well.)

The results of this study should be shouted from the rooftops, both here and abroad. We now have a safe therapy that can potentially halt the progression of this horrible disease. Let's just hope it gets a lot more attention and follow-up research than other therapies have.

I should mention that I don't think lithium is the "cure" for ALS. Rather than being a cure, lithium apparently negates or protects against the effects of various toxins. From what I've seen and researched, it appears that various chemicals and toxins trigger the breakdown of the nervous system. One of the latest chemicals to be implicated is formaldehyde. Researchers at Harvard reported



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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

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that individuals regularly exposed to formaldehyde were 34 percent more likely to develop ALS than those not exposed. Most people associate formaldehyde with its role as the primary preservative in medical laboratories, but it's also used as a component of or in the manufacture of cosmetics, shampoos, glues, and permanent-press fabrics. Formaldehyde has been used for decades, and we're just now learning that it could be a problem. We're exposed to thousands of chemicals these days, and formaldehyde is just the start of the list of nerve-damaging compounds. Others include pesticides and herbicides; aluminum; and heavy metals such as mercury and lead.

Keep the Switchboard Clean

When it comes to treating or preventing neurological diseases such as ALS, Alzheimer's, Parkinson's, senile dementia, et cetera, it's important to keep in mind that nerves are living tissue. It seems that, in an effort to simplify matters, most people equate nerves with insulated electrical wire. If one gets cut, pinched, crimped, or damaged, nerve signals are interrupted and problems result. Nerves, however, are a little more complex. Just like every other living tissue in the body, they require proper nutrition, raw materials, and the removal of waste material in order to stay alive, repair themselves, and continue working properly.

One critical factor regarding nerves, and most other tissues as well, is the damage that occurs from the buildup of "garbage" at the cellular level. Our ability to survive is dependent on how efficiently we're able to remove this garbage from inside each of our cells. The technical term for this process is "autophagy" (*AW-toe-fah-gee*), which translates as "self-digestion" or "eating one's own body."

As bad as this sounds, it actually refers to the way enzymes break down excess protein, damaged components, and other compounds in the fluid inside the cell membrane. Dieting (or starvation) could also be called a form of autophagy. When food supplies are restricted, your body begins to feed itself from its own tissues. (The reported benefits of fasting have much to do with the breakdown and removal of waste material in this same

fashion.) Recent studies have revealed several interesting findings when it comes to autophagy.

First, our autophagy function declines with age and, in fact, has been revealed as a *primary* factor in the aging process. Cellular aging is characterized by the progressive accumulation of waste material and non-functioning cellular components. These waste materials begin to oxidize and create havoc and damage inside the cells. (*Hormones* 08;7:46–61)

Research also indicates that, in addition to causing one to age more rapidly, the buildup of various altered proteins and toxic complexes is associated with cancer, nerve degeneration, and death, as well as viral and other types of infections. (*Nature* 08;451:1069–1075) (*Cell* 08;132:27–42) (*Lancet Neurol* 07;6:352–361)

Lithium's Benefits

As you might suspect, the buildup of waste material is accelerated during a disease process like ALS. This latest study found that lithium dramatically increases autophagy. Lithium also has been found to protect nervous tissue in both the brain and the peripheral nerves from internal and external toxins such as aluminum. Lithium also increases the regeneration of axons, the extensions or branches of nerves cells that link our nervous system together. In simple terms, lithium can increase the actual number of brain cells—which is a rare and valuable feat to say the least. (*Neuroscience* 03;117:55–61) (*Neuropsychopharmacology* 00;23(S2):S39) (*Lancet* 00;356:1241–1242)

Lithium hasn't received much praise in medical circles, primarily because it is not, as most people believe, a drug. It's a mineral that is generally needed in only trace amounts by the human body. Far more has been written about the dangers of toxicity than about the problems associated with a deficiency. I'm sure this has more to do with the fact that there are patentable forms sold as drugs than with its efficacy.

Possible signs of a lithium deficiency include mental problems, of course, but also manic depression, impotency,



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Dr. Williams works closely with Mountain Home Nutritionals, a division of Doctors' Preferred, LLC and subsidiary of Healthy Directions, LLC, developing his unique formulations that supply many of the hard-to-find nutrients he recommends. Dr. Williams is compensated by Doctors' Preferred, LLC on the sales of these nutritional supplements and health products, which allows him to continue devoting his life to worldwide research and the development of innovative, effective health solutions.

alcohol cravings, and poor immune function. Some research suggests that deficiency problems may even be pandemic in nature.

Although there haven't been that many studies focusing on this aspect, it appears that violent activity in certain regions of the world could possibly be related to widespread deficiencies of lithium or other minerals in the overall diet. In the early 1990s, researchers at the Biology Department of the University of California–San Diego analyzed the mineral status of populations based on hair samples that had been collected from individuals in various countries around the world. Studies showed there was a significant correlation between lower lithium levels and the rates of mental hospital admissions, suicides, homicides, rapes, other crime, arrests, alcoholism, and drug use.

Individuals in Serbia were found to have widespread deficiencies in both lithium and selenium. Researchers felt that these combined deficiencies could in part help explain the extreme violence taking place at the time.

The researchers performed another study comparing the lithium levels in drinking water supplies of 27 different counties here in Texas to the incidences of crimes, suicides, and arrests related to drug addictions. They found that, without question, small amounts of lithium in the municipal water supply have a generally beneficial effect on human behavior. Areas where the water supply contained little or no lithium had significantly higher rates of robbery, burglary, theft, suicide, and violent criminal behavior, and also a significantly increased number of arrests for possession of opium, cocaine, heroin, et cetera. (*Biol Trace Elem Res* 90;25:105–113) (*Lithium in Biology and Medicine*. Weinheim: VCH Verlag; 1991, pp 171–187) (*Biol Trace Elem Res* 94;40:89–101)

I think it would be a little naive to blame all the violence in the world on mineral deficiencies. However, numerous studies substantiate the fact that violence and altered mental states can be a direct result of mineral imbalance, blood sugar fluctuations, hormonal irregularities, et cetera. I find it absurd that most people can accept the idea that various drugs that alter brain chemistry are legitimate, whereas balancing brain chemistry with minerals, herbs, or nutritional supplements is quackery.

The researchers in the above study found the evidence of lithium's mood-improving and -stabilizing effect so compelling that they suggested adding it to the drinking water supplies as a way of decreasing crime, suicide, and drug dependency. That may be an extreme solution, but I feel it would certainly be effective.

Lithium's Not Alone

Lithium is one of several trace minerals that are essential for human health. I feel very strongly that trace minerals are, for the most part, largely overlooked in most diets and nutrition programs today. They are found in minute amounts in most rocks, and eventually enter the soil and water as the rocks break down. That's why the best sources are generally drinking water, vegetables, and grains, but the mineral content of these can vary greatly around the world. Arizona and Illinois, for example, generally have higher levels of lithium in their water, and Texas has low levels. Relying solely on your diet and drinking water to get enough lithium nowadays is probably a crap shoot. I suspect this may be one of the reasons we're starting to see an increase in diseases like Alzheimer's—lithium protects against the effects of aluminum, which has been linked to Alzheimer's, depression, Parkinson's, and even ALS.

(Alzheimer's disease is somewhat complicated, but, if you recall, the two major findings associated with this disease are amyloid plaques and neurofibrillary tangles. Both of these are found in the brains of people without the disease, but in Alzheimer's patients they occur in abnormally large amounts. Studies have now shown that lithium inhibits amyloid production and also prevents the formation of neurofibrillary tangles and could be a viable treatment for the disease.) (*Neurodegener Dis* 08;5:247–249) (*Expert Opin Drug Saf* 07;6:375–383)

In the daily supplements I've formulated, I've relied on a base material of the algae spirulina, which contains lithium and other trace minerals. I would suggest checking the possible trace mineral content of whatever daily supplements you take as well. [Editor's note: For more information about trace minerals, visit the Subscriber Center of the Alternatives Web site, www.drddavidwilliams.com.]

I would also strongly suggest that, as a preventive tool, someone with a family history of diseases like Alzheimer's, Parkinson's, bipolar disorder, or other neurological problems take a "low dose" of around 10 to 20 mg a day. Individuals have been taking this low-dose lithium for decades without reports of any problems whatsoever. Lithium is available in the chelated form of lithium orotate or lithium aspartate from various companies. One brand of lithium orotate is Nutrient Carriers, available at www.iberb.com; or from The Vitamin Shoppe at 866-293-3367 or www.vitaminshoppe.com. (When you're looking at lithium supplements, be sure to check the amount of elemental lithium they contain, rather than the amount of raw ingredient. For example, a

(*Lithium continued on page 103*)



NEWS TO USE FROM AROUND THE WORLD

Cutting Cancer's Spread

TOKYO, JAPAN—In last month's issue (June 2008) I explained how metastases (tumors that have spread from the original cancer site) are the primary cause of cancer deaths and not the original tumor. And, I showed exactly how the product Modified Citrus Pectin could be used to help prevent cancer metastases. There's some new research that sheds even more light on how to prevent cancer metastases.

Dr. Judah Folkman is considered to be the father of anti-angiogenic therapy. I first spoke with him in the late 1980s and early 1990s about his theories, and many have since been proven accurate. One of his early observations was that once a primary tumor was removed surgically it often seemed to trigger the sudden growth of distant metastases that had previously been inactive. It was his theory that the primary tumor apparently secreted some type of anti-angiogenic compound that kept the distant tumors from growing. Once the primary tumor was removed, however, the distant metastases were free to begin making new blood vessels and growing rapidly. This theory has now been shown to be on target as well. (*Gene Ther* 03;10:1903–1909) (*Clin Cancer Res* 08;14:1159–1166) (*Cancer Res* 03;63:308–311)

As a practical matter, it now appears that what you do after a primary tumor has been removed can have an enormous influence on your ability to survive.

There's a tremendous amount of research underway now in which anti-angiogenic drugs (drugs that block the formation of new blood vessels) are being given immediately before and after a primary tumor is removed. It will probably be years, if not decades, before all the research is finished and evaluated, and at least that long again before this type of therapy becomes commonplace.

Fortunately, we have a long list of safe and natural anti-angiogenic products available to us now. If I had to have any cancerous tumor removed, I would personally be taking a wide variety of them before, during, and after the procedure. And if, God forbid, it happens to you or your loved one, you should consider anti-angiogenic therapy and discuss it with your doctor as well.

There are probably dozens of natural products that can prevent new blood vessel formation and help keep metastases from growing. It would be hard to recommend exactly which one would be best for an individual, since everyone's situation and makeup will vary tremendously. A few of the better known products are: shark cartilage, curcumin, the omega-3 fatty acid DHA, the omega-6 fatty acid GLA, green tea and its extracts, licorice, quercetin, squalane (extract from dogfish shark

liver, and from plant sources), vitamin D3, selenium, melatonin, and resveratrol. Personally, I recommend and take several of these on a regular basis and would simply add a greater variety and higher dosages.

Staying Healthy in Hospitals

TORONTO, CANADA—I doubt the following will trigger any improvements in hospital menus, but researchers in Saudi Arabia reported that in hospital patients recovering from critical illnesses, fluctuations in their blood sugar levels increased the risk of dying by 12 percent. The risk of developing secondary infections unrelated to the illness also increased significantly. (*Am Thoracic Society International Conference, May 16, 2008*)

When you have control over your diet, eliminating refined carbohydrates is probably one of the best anti-aging tools ever—and also a key to living a longer, healthier life. Not surprisingly, it also looks like it could be a crucial determining factor as to whether you survive a critical illness.

If you or a loved one are ever subjected to a long hospital stay, please don't give in to the temptation of "treats." Hospital diets aren't the tastiest in the world, and often provide only the most basic nutrition. Sneaking in candy, chips, or other items, however, is sure to create imbalances in blood sugar levels—and ultimately cause harm for the patient.

Who Are They Looking Out For?

ATLANTA, GEORGIA—By now you've probably heard that last year's flu shots didn't contain either of the two strains of flu that were associated with almost half of all flu-related illnesses last winter. Each year virus experts pick three strains of flu that they feel represent the best odds of surfacing the next winter and put them in a vaccine. From all the research data I studied, I'm of the firm opinion that the vaccinations do far more harm than good. The annual program is nothing more than a government-sponsored windfall for the pharmaceutical industry, and a colossal waste of money.

Now the Centers for Disease Control and Prevention has increased their recommendation concerning who should get flu vaccinations. In recent years, flu shots have been recommended for children ages 6 months to 5 years and adults 50 and older. The new recommendation calls for vaccinations of all children up to age 18. According to the US Census, there are 61.3 million children age 5 to 19. I've seen cost estimates for vaccinating these additional children that run anywhere from \$560 million to over a billion dollars annually. For that kind of money you could probably furnish every family in the country with a winter's supply of vitamin D, Diamond V's XPC, and other products that have been proven to

NEWS TO USE (CONTINUED)

boost the immune system. At these costs, it's little wonder that our health care system is in trouble.

I realize that it's the height of summer right now, and you might not be thinking about preventing colds and flu. But it's never too late—or too early—to begin practicing good habits. Everyone should be boosting their vitamin D levels through either time in the sun (20 minutes of unprotected exposure a day is enough during the summer) or supplementation (1,000–4,000 IU daily). With XPC, 3/4 to 1 tsp. daily is plenty. (Note that this is a higher amount than I recommended when I first wrote about XPC in September 2007. It's still the two to three grams I suggested at the time, but I've recalculated the measurement needed to get that amount.)

Ironing Out Attention Problems

PARIS, FRANCE—Here's more very useful information from France that will probably never see the light of day in this country.

Researchers found that one of the primary causes of attention deficit/hyperactivity disorder (ADHD) is a lack of iron, and that iron supplementation works just as well as Ritalin and other stimulant drugs to relieve the symptoms of ADHD.

The rapid growth that takes place during childhood requires extra oxygen to support the new growth and increased activity. This oxygen arrives courtesy of an increased number of red blood cells with their iron-rich hemoglobin. With insufficient iron storage levels, children are in an anemic or pre-anemic state—and experience constant fatigue, brain fog, and erratic behavior. The pharmaceutical answer has been to place these kids on stimulants.

Researchers at Hôpital Robert Debré instead placed children who had ADHD on iron supplements for 12 weeks and compared their behavior to another group taking a placebo. During the period of the study there was a significant decrease in the ADHA Rating Scale and other criteria used to assess the severity of ADHD. *In this study iron supplementation was well-tolerated, and its effectiveness was comparable to that of drug stimulants.* Those children (age 5 to 8 years) given an iron supplement of 80 mg a day showed remarkable improvements in behavior, ability to focus attention, and learning ability—while there was no change in the group given a placebo. (While this may seem like a high dosage of iron for young children, it was for a short time only—and if the diet is corrected to include more foods that contain high levels of iron, it's possible that the supplementation could be stopped after a period of a few months.) (*Pediatr Neurol* 08;38:20–26)

Other studies have shown that ADHD children routinely have below-normal levels of iron in their blood,

but for some reason iron supplements are rarely even mentioned in the treatment of ADHD.

Adrenal fatigue, blood sugar-handling problems, and deficiencies in the omega-3 fatty acids DHA and EPA also contribute to attention deficit problems.

If you have preteen or teenage children who seem to be “walking zombies” throughout the day or who are having behavior problems, adding an iron supplement and addressing the other items I just mentioned will often change their lives in a matter of weeks.

Summertime Allergy Relief

CHUNGJU, SOUTH KOREA—Allergies are commonly considered to be more of a concern during the spring and fall, but in fact they can be a problem at any time of year if the proper allergens are in the air. During the summer months, the most common allergens are mold and grass pollen.

For many people their symptoms are what's known as “allergic rhinitis,” or a stuffed nose. Tissues in the airways become inflamed in response to the presence of allergens, gradually closing off the nasal breathing passages. If there's a runny nose involved as well, it can be difficult to distinguish between allergic rhinitis and a common summer cold. (Other common allergy symptoms include sneezing; itchy, watery eyes; post-nasal drip; and an itchy feeling in either the back of the throat or deep in the ears.) One cue is the length of onset: Colds take a few days to reach full power, while if your problem is an allergy the symptoms appear in as little as 15 minutes.

Numerous herbs are used in Traditional Chinese Medicine (TCM) to treat allergies and other upper-respiratory ailments. Most work by regulating the flow of Qi (energy) through the Lung meridian (energy pathway). One plant in particular is the areca nut, or betel nut—traditionally used to promote the downward movement of Qi, meaning that it relieves congestion in the upper parts of the respiratory tract. A study performed some years ago at the Bio-Food and Drug Research Center of Konkuk University showed that the betel nut inhibits the release of several compounds that are involved in allergic reactions—particularly TNF-alpha and an enzyme known as ERK1/2. (*J Pharm Pharmacol* 04;56:927–933)

The same group did similar research on chrysanthemum flowers, and found that they, too, inhibited both TNF-alpha and ERK1/2. Chrysanthemum is used in TCM to release toxins and dispel wind, which makes it suitable for treating upper respiratory conditions. (*J Ethnopharmacol* 04;95:425–430)

Chinese herbs are most often available in combinations, using proportions that have been carefully researched to provide maximum effectiveness.

MORE THAN AN AFTERTHOUGHT

Question: My 10-year-old daughter recently experienced a bout of abdominal pain. My doctor told us it was an inflamed appendix, and the pain has subsided with the prescription of antibiotics. He still recommends removing the appendix to prevent any future problems. What are your thoughts?

—M. A.
Seattle, Washington

Answer: Acute appendicitis is something that can turn serious, particularly if the organ gets to the point of rupturing, which can be life-threatening.

Pain in the area of the appendix, however, is often either gas pain or, even more likely, a problem with the ileocecal valve. There are simple, effective techniques to remedy ileocecal valve problems that I've explained in detail in the past. [Editor's note: For more about the importance of the ileocecal valve, visit the Subscriber Center of the Alternatives Web site, www.drdauidwilliams.com.]

I would be very reluctant to remove the appendix in an effort to "prevent any future problems." Most of us were taught that the appendix is a useless structure. We continue to learn just how complex and intertwined the parts of the human body are, however, even after hundreds of years of study.

The appendix organ is an important part of the lymphatic system, which in turn is part of your overall immune system. It is strategically located at the point where the small and large intestines meet, near the ileocecal valve. It provides a "trap" where harmful microorganisms can be captured and destroyed or inactivated by our immune cells. Once you remove the appendix, you lose a part of your immune system.

Newer research also suggests that the appendix may act as a type of "safe house" where beneficial bacteria from the bowels is grown and stored. In an event where the bowel becomes infected with a pathogenic bacteria and is purged, the bacteria from the "safe house" would be used to reinoculate the colon with beneficial bacterial. In earlier times, and even today in many third-world countries where diseases like cholera exist, the ability to quickly recolonize the colon with good bacteria would be crucial to survival. I suspect it's just as critical in individuals who experience food poisoning, heavy antibiotic use, chlorinated water, chemotherapy, radiation therapy, or many forms of chronic prescription drug use.

It would be interesting to see studies on serious food poisoning that compared the survival rates of those individuals who had their appendix to those who didn't. Similar studies on the use of antibiotics, prescription drugs, chemo, and radiation exposure would probably be eye-opening as well.

After thousands of years, the medical field is just starting to learn about the many benefits of probiotics. Making the connection between the appendix, colon health, and a stronger immune system is probably a little bit of a stretch for most doctors at this point. For your daughter's sake, however, I would strongly suggest leaving this little worm-like pouch where it is if possible. It's far more important than most realize.

And for anyone without an appendix, a regular supply of probiotics is a form of cheap insurance. Because you no longer have the reservoir of good bacteria, daily replenishment would be a good idea.



GALLBLADDER PROBLEMS FLUSH AWAY

Question: I just wanted to let you know I performed the gallbladder flush you outlined in a previous issue and it has worked wonders for me. My doctor says the "stones" that were flushed out were probably just congealed globs from the olive oil I drank. Whatever they were, it doesn't matter because I feel great and my digestion has improved tremendously.

—C.C.
Houston, Texas

Answer: In many cases, some of the "stones" will be from the olive oil—but not all. And removing stones from the gallbladder is only one of the benefits and reasons for doing a flush. Many cancer physicians require their patients to use the procedure to clear out cholesterol and bile salts. Following a flush, it's not uncommon at all to see individuals with stubbornly high cholesterol levels improve significantly without any other form of treatment.

SWALLOWING FISH OIL

Question: I know I need to be taking fish oil capsules, and I've tried on several occasions. After a few days, however, I quit because I can't stand burping up the oil for the rest of the day. Do you have any suggestions?

—Robert P.
Rancho Cordova, California

Answer: First, try storing your capsules in the freezer. Swallowing them very cold seems to eliminate this problem for almost everyone. You can also try taking them along with a meal. If neither of these work, you may have a fat digestion problem and be in need of digestive enzymes or possibly a gallbladder flush.

You might also consider switching over to chia seed as a viable alternative to fish oil. I wrote about that in the March 2008 issue of *Alternatives*.

(Lithium continued from page 99)

120-mg tablet of lithium orotate provides about 5 mg of elemental lithium.)

I should also mention that at much higher doses there have been toxicity problems like nausea, diarrhea, muscle weakness, or lack of coordination—but, again, no reports of these problems have been noted at lower dosages of 10 to 20 mg a day. And any adverse effects of lithium toxicity are reversed quickly when one stops taking the mineral. As an extra precaution, however, drinking plenty of water and taking 400 IU of vitamin E and extra essential fatty acids from flax seed or oil, fish oil, or chia seed will prevent these problems of toxicity in the first place.

I didn't want to stray too far away from the main focus of this report, which was a fantastic breakthrough on how lithium can be used to help put the brakes on ALS. It's something every doctor and patient should be made aware of. I'm not aware of any form of treatment, natural or medical, that has been shown to change the course of ALS as much as lithium. This is truly a godsend for ALS sufferers and their loved ones. I did want you to understand, however, how lithium works and why it can be beneficial for other neurological problems as well.

Research data have begun to reveal the potential and even the mechanisms through which inexpensive natural substances like lithium can dramatically prevent or improve some of the most common debilitating diseases of our time. And for some reason, I'm afraid these are topics the mainstream media and most health publications are going to ignore completely.

Tasty Blood Pressure Remedies

Blood pressure is one topic that seems to get lots of attention from researchers, and with good reason. Elevated blood pressure is associated with heart disease and damage to the kidneys and eyes, among other effects. Certainly the most effective way to reduce blood pressure is via consistent exercise. Aerobic exercise tends to increase blood pressure during the actual exercise activity, however, so researchers are always looking for methods to lower blood pressure directly. Two groups have found methods that are simple, inexpensive, and effective.

A Remedy That's Hard to Beet

Researchers at Queen Mary University, in London, have found that simply drinking beet juice can lower blood pressure by as much as 10 points. Their study involved two groups of 14 individuals each. One group drank approximately two cups of water and the other group drank two cups of beet juice (also referred to as

beetroot juice in Britain and Australia). Their blood pressure readings were taken every 15 minutes during the hour before drinking anything, every 15 minutes for three hours following consumption, and every hour for six hours and then at 24 hours following consumption.

In the beet juice drinkers, but not in the water drinkers, blood pressure began to drop after the first hour. It continued to drop for three hours after consumption and then stayed there for about the next 24 hours. Blood pressure dropped by as much as 10 points from the juice alone. (*Hypertension* 08;51:784–790)

It isn't fully understood how the beet juice works, but it's thought that the juice's higher natural nitrate content may be in part responsible. The blood pressure drop correlated with increased blood levels of nitrites.

Mind Your "A's" and "I's"

In the past we've heard a lot about the controversy and possible dangers of nitrates and nitrites. Nitrates are often confused with nitrites.

Nitrites are generally utilized as food preservatives, and personally I believe that far more lives have been saved through their prudent use than have been lost due to any toxicity problems.

Nitrates, on the other hand, are commonly found in vegetables, which account for 70 percent of the nitrates in the typical human diet. (Water accounts for another 21 percent and preservatives in meat and/or meat products make up the rest.)

Toxicity problems generally occur when drinking water is sourced from shallow water wells or public water systems that use surface water contaminated from nitrogen-based fertilizer or animal or human sewage runoff. Vegetables are rarely a source of nitrate contamination.

In the US we typically consume 40–100 mg of nitrates per day, compared to 50–140 mg by Europeans.

As soon as nitrates are ingested, they are quickly converted by bacteria in the mouth, stomach, and small intestines into nitrites. The nitrites are absorbed into the bloodstream as nitric oxide, a compound I've talked about in the past. Increased levels of nitric oxide help relax blood vessels and decrease platelet aggregation (blood clotting), which in turn improve blood flow and lead to lower blood pressure. As a side note, cocoa-containing foods, the most notable being dark chocolate, have recently been touted as being beneficial in preventing cardiovascular disease. Many of their benefits can also be traced to their ability to increase blood levels of nitric oxide as well. Decreases in blood pressure, however, have generally been quite small. (*JAMA*

07;298:49–60) [Editor's note: For more about the workings of nitric oxide (derived from the amino acid L-arginine), see the November 1994 *Alternatives*. In case you don't have that issue handy, there's a copy placed in the Subscriber Center of the *Alternatives* Web site, www.drdauidwilliams.com.]

As I've discussed in the past, increased pressure in arteries stimulates the conversion of the amino acid L-arginine into nitric oxide. That's why many people with problems like erectile dysfunction have found help by taking the amino acid supplement. The above study also suggests that diets high in vegetables (or vegetable juices, in this case) can be a low-cost method to both treat and prevent various cardiovascular problems.

This study utilized a commercial beet juice product from Planet Organic, which isn't readily available for most people. I recommend juicing your own beets if you have a juicer. Consuming fresh, just-made vegetable juices has enormous health benefits that are difficult to obtain from any other source. The live enzymes and nutrients in the vegetables begin to deteriorate almost as soon as the juice comes out. Look for a high-quality juicer that's easy to clean and that gets as much of the juice as possible out of the raw fruit or vegetable. There are a few things to keep in mind, however.

First, beet juice can have a particularly strong detoxifying effect on the liver. While this is highly desirable, if you're currently overweight, out of shape, or toxic then you'll want to start slowly to avoid releasing too many toxins into your system at one time. And if you're already in some type of detoxification program, you'll want to wait until you have your kidneys and liver in good shape before beginning the beet juice. It's wise to start out with only a couple of ounces of beet juice mixed with about 8 ounces of carrot juice and only gradually work up to larger amounts. If two cups of juice at once seems like a large amount, I expect you'd be able to get similar results with one cup twice a day. Also, remember to peel the skin from the beet roots, as it can be quite bitter.

Beets can also leave permanent stains on any plastic parts of a juicer. This isn't detrimental or really anything to worry about. After juicing most vegetables you can

simply rinse the juicer parts with water, but if you want to avoid stains from beet juice you'll probably need to clean the juicer (and anywhere else the juice splashes) immediately with soapy water.

As with all juices, it is best to consume beet juice as quickly as possible. With time all juices begin to oxidize and lose their potency. Although this study focused solely on beet juice, which has also been used for centuries as a blood and liver cleanser, the juice from spinach, cabbage, and carrots also contains higher levels of nitrites. (V8 juice, by the way, contains beet juice, but I've never been able to determine the exact amount. And, although it has been heated and loses much of the enzymatic activity, the low-sodium variety is still a fairly good method of obtaining many of the benefits of vegetable juices. As I've mentioned in the past, it's a great source of potassium.)

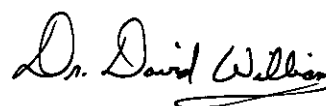
A Sweeter Method

Researchers in Finland have found another similar technique to help lower blood pressure.

Berries are some of the richest sources of antioxidants and bioflavonoids (the compounds that provide flavor and color in fruits and vegetables). They are also capable of boosting nitric oxide levels. Researchers in Helsinki had test subjects eat ½ cup of berries following lunch and dinner for a period of eight weeks. During that short period their blood pressure dropped as much as 7 points and triggered favorable changes in platelet activity and significant increases in HDL cholesterol levels as well. (*Am J Clin Nutr* 08;87:323–331)

It's common for physicians to resort to drug solutions at the drop of a hat. Even though treatment guidelines for high blood pressure say to "begin with diet and exercise," the drugs get mentioned very early on. Don't get taken in by the conventional line; simple methods often are the best.

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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