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Dr. David G. Williams

Health by the Foot

I warned about the coming diabetes epidemic years ago, and if there was ever an instance where I wish I had been proven wrong, it would definitely be this one. Unfortunately, I was right.

If you or any of your loved ones have diabetes, it's imperative that you take exceptionally good care of your feet. A primary complication of the disease is foot ulcers. Approximately 25 percent of individuals with diabetes will develop a foot ulcer, and adults with foot ulcers are 24 times as likely to be hospitalized for limb amputations compared to individuals without diabetes.

Doctors should be regularly screening for foot problems with all their diabetes patients, but unfortunately that isn't happening. You must also examine your feet at home, perhaps with the help of someone else in the family, as well as strictly follow a few guidelines to make sure you're not in the group that someday requires hospitalization or, God forbid, amputation.

Most of the problems stem from either poor circulation or diabetes-induced nerve problems that result in a loss of sensation.

Studies show that one out of every three diabetics over the age of 50 have peripheral artery disease (PAD), where the arteries to the feet are so clogged that circulation is severely limited. The basic test for PAD can be performed by your doctor. It requires comparing the blood pressure in the arm and the ankle. The test, known as the ankle-brachial index, uses a regular blood pressure cuff to take the pressure in your arm, but requires a Doppler ultrasound device to get the pressure in your ankle.

To improve blood flow in PAD cases, surgeons are now starting to recommend bypass procedures, stents, "roto-rootering," and other procedures similar to those used in heart surgery. All the high-tech interventions

may not be necessary, however. One of the best adjunctive therapies for PAD is the Tibetan-formula product called Padma. I've written extensively about Padma in the past, so I won't go into all the details here. It's available from EcoNugenics, at 800-308-5518 or www.econugenics.com. [Editor's note: See Vol. 9, No. 6 for details about Padma. That issue is available in the Subscriber Center of the Alternatives Web site, www.drdauidwilliams.com.]

Keep a Step Ahead of Foot Care

Begin your foot inspection by checking for dry spots and calluses on the bottom of the foot, where the bones can be easily felt through the skin. The dryness often indicates a lack of pressure sensation. If you notice a darker discoloration under the spot or callus it's an even more ominous sign that there is a bruise (hematoma), which can develop into an ulcer.

Make sure to thoroughly dry and powder your feet after bathing or whenever they get wet. Wet feet can be a fertile ground for fungal infections, which are almost always difficult to treat.



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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

You can treat a fungus-infected nail with neem oil or tea tree oil. Using a cotton swab, apply the oil to the base of the nail where it emerges from the toe and at the end of the toenail. Use this daily, until the entire infected area has grown out—which may take several months.

Also, the use of lotions can be helpful to prevent the formation of cracks or crevices, which, as open wounds, can provide fertile ground for infections. Any cuts or scrapes must be treated quickly. I highly recommend applying topical dressings using a gauze pad and honey or, as a second choice, a paste of sugar and liquid iodine (over-the-counter Betadine).

Every diabetic should have honey on hand as their first-line treatment for ulcerations. Although most any honey will be beneficial, I recommend manuka honey for two primary reasons. First, research shows it kills more varieties of pathogens than other types of honey. Second, as a matter of convenience, it's one of the few types of honey I have found that will remain in a liquid state almost indefinitely and not crystallize.

It's also important for diabetics to take great care in cutting their toenails. The nails need to be cut straight and filed smooth afterwards. An ingrown toenail needs immediate attention, which is best handled by a podiatrist. If your nails are hard, thick, yellow, and brittle you may need a podiatrist to cut your nails in the first place. (A nail in this condition may have a fungal infection.)

A lack of sensation also means you need to be very careful to avoid exposing your feet to excessive heat from heaters, hot pavement or other surfaces, open fires, heating pads, water bottles, and even the sun. Instead, use socks to keep your feet warm. I don't recommend using thermal creams, which may give the sensation of warmth but not the reality.

It should go without saying that it's just as important to keep your feet from getting too cold.

If your shoes don't fit properly, blisters can be another serious problem. Ask your doctor about special fitted shoes available for diabetics.

Prevention Is Easier than Treatment

Checking someone's feet isn't too appealing to most doctors. That's probably why most avoid doing so. Take the initiative and make them do it; take off your socks and shoes at every single doctor visit and insist that they examine your feet. Ignoring the initial signs and symptoms of a foot ulcer can quickly cascade into an irreversible situation. Surgeons hear the same story time and time again. For a diabetic, what looks like a minor problem one day quickly turns into gangrene and an infected wound requiring amputation three days later.

The last report I saw estimated that in this country alone over 600,000 diabetics would develop foot ulcers this year. Over 80,000 of those would require amputations of the toe, foot, or leg, which becomes the start of a continuing nightmare. I can't think of anything more discouraging than to have to lose a foot a couple inches at a time. Not only is it difficult to get the amputation to ever heal, half of those individuals develop additional infections/ulcerations and require that the other foot be amputated. And within five years, over 40 percent of these amputees are dead.

During the next few years, millions of diabetics will come to realize that avoiding the life-threatening effects of diabetes involves more than just popping their medication or shooting up insulin. Don't be one of them.

You Are What Your Food Eats

Over the last 20-plus years that I've been writing *Alternatives*, I've probably shared far more of my personal history and background than I ever imagined. You might recall that I was raised in the Texas panhandle region, an area known for friendly, hard-working individuals, windy and wild weather, and cattle feedlots. It's probably the feedlot capital of the world. Feedlots are abundant throughout the region—so much so that, depending on the direction of the wind, on most days you can “smell the money,” as the locals often say. Feedlots thrive and help boost the local economy, due to



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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.

the abundance of locally grown grains like corn and the proximity of so many major meat-packing plants.

Feedlots are used for the “finishing” stage in cattle production. Cattle are first allowed to graze on pasture, primarily wheat grass, until they reach about 600 to 800 pounds, at which point they’re moved to a feedlot. There, they are fed high-energy feeds (hay, corn, sorghum, sugar beet waste, molasses, soybean and/or cottonseed meal, et cetera) where they can gain an additional 400 pounds in a three- to four-month period before slaughter. The diet also increases the marbling or fat within the meat, making it juicer and more tender—which the US consumer has become accustomed to eating.

From a health standpoint, one downside of corn- and grain-fed cattle compared to grass-fed is that the naturally predominant omega-3 fatty acids in the meat are replaced with omega-6 fatty acids. Omega-3s are the fatty acids found in wild fish and grass-fed animals and their byproducts; they reduce inflammation and protect the cardiovascular system. Excess omega-6 fatty acids promote inflammation throughout the body and lead to cardiovascular damage and disease.

Finishing cattle on grain diets started here in the US and, with the exception of Australia and parts of South America, remains mostly an American activity. If you’ve had the opportunity of tasting various beef products in different parts of the world, the taste difference is readily apparent. Most people accustomed to the beef in this country find the grass-fed beef elsewhere to be tougher and to have a subtle, somewhat fish-like taste.

Feedlot finishing of cattle has become such a cost-effective production technique that now the same idea has been adopted in feeding pigs, goats, sheep, chickens, and even fish. The extensive use of corn in these feeds has homogenized the flavor of these meats to the point that all practically all pork tastes the same, all chicken tastes the same, et cetera. In earlier times, and still to this day in other countries of the world, the taste of meat would vary greatly depending on where the animal was raised and what it grazed upon. That has quickly become a thing of the past.

Maintaining a Balance

I’m not advocating that everyone become vegetarians and avoid meat products. I think meat can be an integral part of a healthy diet, and for many body types it’s practically essential. The problem lies with the fact that certain meats that were excellent sources of natural omega-3 fatty acids, CLA (conjugated linoleic acid), and other beneficial components have become exceedingly difficult to obtain for most people. When you combine this with

the phenomenal increase in grains and grain-containing products that we’ve added to our food supply over the last century, it obviously has a tremendous effect on the overall health picture of our society. This is undoubtedly one of the contributing factors for the increase we continue to see in obesity, heart disease, cancer, diabetes, arthritis and many other inflammation-related diseases.

Our food supply is becoming so lopsided toward omega-6 fatty acids that, at this point, every one of us should be consciously making a strong effort to increase our omega-3 consumption. The best, most available, and most affordable sources include flax and chia seed, walnuts, and sardines. If you can afford it, wild salmon, grass-fed beef, lamb (which is almost always grass-fed), eggs from free-range chickens, cod liver oil, and fish oil supplements are also excellent sources.

A month or two ago I explained that many fish products are now being made from the fast-growing tropical fish called tilapia. But with a corn-based farmed diet, their meat composition gets transformed from what would be omega-3-rich fish in the wild to meat that closely resembles chicken. As such, don’t count on most fish dishes to improve your omega-3 status unless you’re eating wild species, particularly the cold-water and/or oily types such as salmon, sardines, and herring.

I’m always getting questions about where to find and purchase the best and most nutritious foods. These are not always easy questions to answer, because some of the best products are usually locally grown or produced and not available throughout the country. One of the best tools I’ve found for discovering exactly what’s available in your area is the Web site www.localharvest.org. It’s not perfect, but give it a try. I think you’ll be pleasantly surprised to discover everything from honey and organic meats and seafood to produce and dairy products in your area. And many of these food producers are set up to ship their products to you.

The Great-for-You Outdoors

As springtime comes to most of the country, many people are turning to thoughts of outdoor activities. Whether those activities include gardening, playing with the dog or your grandchildren, or just plain going for a walk, they carry benefits beyond what you’d get by performing those same activities indoors. The primary advantage of being outdoors, of course, is that you get exposed to sunshine, so you’re constantly making vitamin D—which supports your cardiovascular system, your immune system, and your bones.

(Outdoors continued on page 173)



NEWS TO USE FROM AROUND THE WORLD

Personal Care Is the Best Care

JERUSALEM, ISRAEL—With all the cutbacks in our health care system that are coming, here's a little tidbit that you may want to keep in mind.

Any type of medical imaging, including X-rays, PET scans, CAT scans, and MRIs, is sent to a radiologist for reading and interpretation. To save costs, many hospitals and medical facilities send the images by computer to overseas radiologists who charge far less than those in this country. An interesting study by Dr. Yehonatan Turner of Shaare Zedek Medical Center in Jerusalem showed that radiology is just another area where the quality of the care suffers with continued "depersonalization" of the relationship between the patient and those who diagnose and provide the care.

Before 318 patients underwent CAT scans, their photographs were added to the hospital files in such a manner that every time a record was accessed it was accompanied by the patient's picture. Fifteen different radiologists who evaluated the scans were surveyed, and all said they felt more empathy toward the patients after seeing their photos. The researchers also found the radiologists performed more meticulous readings of the scans when a photo of the patient was present, without lengthening the time they spent on each case. (*Paper presented at the 94th Scientific Assembly and Annual Meeting, Radiological Society of North America, Chicago, November 29-December 4, 2008.*)

Ninety days later the researchers submitted the same CAT scans to the radiologists without any photographs. The readings that came back were quite different. I personally find it more than a little scary that roughly 80 percent of the radiological incidental findings that were reported in the initial readings were not reported when the patients' photographs were not present.

Viewing the patient as a human being and not just a case can make a huge difference in the diagnosis and treatment recommendations.

Unless a hospital changes their record-keeping system so a photo accompanies every file, I don't know how you can hope to gain this extra bit of empathy and concern for your particular health problem. I found it strange that most doctors responding to this research thought the system was working okay as it is and no additional changes are necessary.

As our health care system becomes more automated and "depersonalized," it will pay to be more picky when it comes to choosing your doctors. Recommendations from your friends and family are a great starting point. You can also check with a company called Health Grades, which rates the quality of care in 30 areas at all of the nation's more than 5,000 non-federal hospitals. Their Web address is www.healthgrades.com.

Metal-Mouth

DALLAS, TEXAS—Researchers have discovered that denture adhesives could result in chronic problems associated with copper deficiencies.

Popular denture adhesives contain high levels of zinc. Fixodent and PoliGrip were found to contain zinc concentrations ranging from 17,000 to 34,000 mcg/gram. In this study, researchers found that it wasn't that uncommon for individuals to use two tubes of adhesive a week—which would translate to a zinc exposure of 330 mg a day. (*Am J Neuroradiol* 06;27:2112–2114) (*Neurology* 08;71:639–643)

If one also took zinc supplements, a multi-vitamin/mineral containing zinc, over-the-counter zinc lozenges, or other zinc-containing products, the exposure would be even greater.

To put it simply, when it comes to absorption in the intestinal tract, zinc competes with copper. Zinc wins. Excess zinc can result in a copper deficiency.

In the above study, doctors discovered that in four patients the use of dental adhesive eventually depleted copper levels to the point they developed a serious neurological disease called myeloneuropathy. This condition can develop in B12-deficient individuals as well.

The symptoms of B12 deficiency often begin with anemia, then progress to a numbness, tingling, or loss of feeling in the toes and/or fingers that then moves into the legs and/or arms. As in these individuals above, it can eventually lead to muscle weakness—to the point where the individual can no longer stand or walk safely. Fortunately, if the cause of the condition is discovered early enough it can be resolved by stopping the zinc consumption and increasing the intake of copper and vitamin B12, which occurred in the above case.

Chronic hypothyroidism (an underactive thyroid condition) is another commonly overlooked cause of myeloneuropathy that needs to be ruled out. I've written often about hypothyroid conditions. (*Br Med J* 77;1(6067):1005–1006) [Editor's note: *Directions for identifying and correcting hypothyroid conditions can be found in the "More Alternatives" section of the Alternatives Web site, www.drdauidwilliams.com.*]

I'm not sure how much of a problem dental adhesives are at this point, or just how many problems their overuse may be causing. I do know that vitamin B12 deficiencies and hypothyroidism are underdiagnosed and widely overlooked in this country. If you or a loved one have any of the symptoms I've talked about, it's important to rule out zinc toxicity, a B12 deficiency, and an underactive thyroid condition. They are relatively easy to correct and could save you years of uncertainty, suffering, and needless medical procedures.

(Outdoors continued from page 171)

Beyond that, however, you're getting relief from stale recirculated indoor air. Modern buildings, with their airtight construction, trap any pollutants that end up inside, including pesticides and heavy metals that get tracked in from outdoors and volatile compounds that are released from the building materials such as carpet and paint.

As a bonus, you stimulate your brain every time you enter a new environment or encounter a novel situation. A recent study out of the University of Michigan showed that the basic process of interacting with nature improved attention, focus, and memory in older adults. (*Psychol Sci* 08;19:1207–1212)

Preparing for Activity

After a winter-long period of reduced activity, you may need to gradually rebuild your capacity to meet the increased demands on your body.

Last month I wrote about the necessity of maintaining muscle strength, and I described some simple exercises you can do at home to build up that strength, particularly in your legs. Those exercises will go a long way toward restoring and maintaining leg strength. But there's more to mobility than muscle strength. In fact, you need coordination among the various muscle groups, as well as what's known as proprioception: the ability to sense where you are in relation to the space around you. There's just no substitute for actually walking.

Certainly for someone who's unsteady on their feet, a walk should be no more challenging than going up and down a hallway at home. But once you've re-established your balance and strength, you need to constantly challenge yourself—and that means leaving the predictable environment of your home and getting out in the world.

Walking provides head-to-toe benefits. The added exertion increases blood circulation to your brain and vital organs. Higher demands on your respiratory system increase the rate at which you can dump toxins out through your lungs. And the impact with each step puts healthy stress on your bones, reducing your risk of developing osteoporosis.

In a study conducted at the Hong Kong Polytechnic University, 34 women who had Parkinson's disease were compared to 30 women of similar age who didn't have the condition. The results showed that increased muscle strength was associated with a reduced risk for osteoporosis. (*J Rehabil Med* 09;41:223–230)

When you're ready to increase your benefits, you can start using your arms when you walk. The typical advice

you hear is to swing your arms vigorously with each step, or to carry a small weight (two to five pounds) in each hand. For a walk around the neighborhood, these strategies will work fine to improve the cardiovascular benefits of walking, because they get the blood flowing through the arms and chest, in addition to the blood flow you're already promoting in the lower body.

For more vigorous or challenging walking—hiking I guess you could call it—many people find that they prefer to have something with them to use for support and balance. As it turns out, using walking sticks or trekking poles can also improve your fitness level without any perceived increase in exertion. One study performed at James Madison University, in Harrisonburg Virginia, showed that people who used walking poles while hiking over a variety of terrain improved their lung capacity and increased their heart rate (both indicators of cardiovascular health) and burned more calories while on the hike. (*J Strength Cond Res* 08;22:1468–1474)

Even for those who aren't quite ready for vigorous hiking, support can provide meaningful benefits. A study of people who had intermittent claudication (pain in the legs after walking short distances), performed at the Sheffield Hallam University in Sheffield, England, showed that people who used poles to provide assistance as they walked could go about 80 percent farther without discomfort, and could walk considerably farther overall with less leg pain and no increased sense of exertion. (*Eur J Vasc Endovasc Surg* 08;36:689–694)

Walking poles are available from some sporting good stores, or online. Look for a pole that's adjustable to account for your individual height and arm length. Poles are also more convenient to carry if they disassemble into two or three sections. You can get sturdy, lightweight walking poles from Mountain Home Solutions at www.drdauidwilliams.com or 800-211-8562; or from Back Country Gear, at www.backcountrygear.com or 800-953-5499.

Walking may be the most basic human activity. People have all sorts of reasons for walking: to get places, for exercise, and for pleasure. Regardless of your purpose, make a point of getting out in the air, moving around, and enjoying spring as it arrives for you.

Blue Light Special for Infection

I've written several times about the current dangers we face from MRSA (methicillin-resistant *Staphylococcus aureus*) infections. It's a growing problem that you need to be aware of. In earlier days, a staphylococcus infection

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LOSE THE GLUTEN, CUT YOUR CHOLESTEROL

Question: I've struggled with high cholesterol problems for years and have tried practically every type of supplement available without much success. My doctor is strongly pushing statins now. Is there anything I might be overlooking?

—Thomas M.
Phoenix, Arizona

Answer: I'm assuming that you've already been diligent when trying the various supplements out there, including niacin and red rice yeast. If you haven't had any luck with those, then by all means try a gluten-free diet.

I've discussed gluten-free diets in the past and how allergic reactions to gluten can be directly linked to problems like osteoporosis, digestive complaints, anemia, and psoriasis. It's also important to remember that the elimination of wheat (the primary source of gluten) from the diet is probably one of the most powerful techniques you can use to lower harmful forms of cholesterol.

Practically all grains contain gluten, but wheat is one of the most commonly consumed grains found in our food supply—primarily in the form of flour and bread. Cut out the bread and white flour from your diet. (It's not that easy at first.) Depending on your degree of dependency on gluten, you may experience "withdrawal" symptoms for anywhere from a few days to a few weeks.

Most people (doctors included) don't understand that there is a proven additive element to gluten consumption. Gluten is a protein, and when your body isn't able to completely digest and break down the protein you end up with forms of biologically active peptides that interact with opiate receptors in the brain. These are the same receptors associated with extremely addictive opiate drugs like heroin and morphine. Studies have found that there are as many as 15 opioid sequences in a single molecule of gluten, and the peptides in gluten can be as much as 30 times more addictive than morphine. (*FEBS Lett* 92;296:107–111) (*FEBS Lett* 93;316:17–19)

Considering its potential addictive properties, it's understandable that gluten withdrawal may be associated with symptoms like intense food cravings, irritability, depression, mood swings, fatigue, disorientation, insomnia, and brain "fogginess." From my personal experience in utilizing gluten-free diets, the withdrawal symptoms are not that intense in most people. However, keep in mind that a more serious withdrawal is indicative of a stronger addiction to wheat, and all the more reason to stick with a gluten-free diet.

Following this initial period, if you're like the majority of individuals (75–80 percent), you can expect to experience a long list of benefits. Just a few commonly

reported improvements include: fasting blood sugar levels improve, LDL cholesterol and triglyceride levels drop, HDL cholesterol increases, bowel problems disappear, joint pains subside, excess weight begins to fall off, energy levels improve, and headaches subside.



There's no downside to eliminating wheat from your diet, with the possible exception of the withdrawal symptoms I referred to earlier. Stick with the program and I think you'll be very pleasantly surprised in the long run. Let me know how it works. If you don't see a very significant improvement in your cholesterol levels and overall health in a month or sooner, I'll be shocked.

MORE HELP FOR MIGRAINES

Question: I have migraine headaches. I've followed several of your suggestions, and the headaches are not as frequent, but I still have them. The suggestion of yours that worked the best was to increase my water intake and get my bowels moving through the use of probiotics, sauerkraut, and more fiber. This alone cut both the frequency and severity in half. Thank you. And for the headaches that seem to be allergy-related, your butterbur suggestion helped as well. Can you offer any additional help?

—Sharon D.
Kirkland, Quebec

Answer: Without knowing the circumstances of an individual's health picture, it's difficult to make a specific recommendation for stopping migraines, because there are so many possible causes. For example, whereas constipation and the resulting toxicity might be one of your underlying problems, someone else might be dealing with a hormone imbalance.

I won't go into all the various remedies that I've covered in past issues. There are a couple, however, that might be of help—ones which most doctors and individuals still aren't aware of. [Editor's note: A run-down of migraine remedies can be found in the "More Alternatives" section of the Alternatives Subscriber Center, www.drdauidwilliams.com.]

The first one is coenzyme Q-10 (CoQ10). A study out of Belgium involving 42 migraine sufferers found that 300 mg a day of CoQ10 had a dramatic influence on the frequency of the headaches in the majority of the patients. (*Neurology* 05;64:713–715)

The depletion of CoQ10 is important nowadays because several groups of the most widely prescribed medications deplete this compound. That's undoubtedly one of the very reasons migraines are more common than ever.

(Mailbox continued on next page)

The following types of drugs deplete CoQ10:

- antidepressants;
- antidiabetics;
- cardiovascular medications to lower blood pressure and treat angina or arrhythmia;
- cholesterol-lowering drugs, particularly the statins; and
- diuretics.

If you take any of the above medications, you need to be taking a CoQ10 supplement—whether or not you suffer from migraines.

Another overlooked nutrient that can stop migraines is alpha-lipoic acid. A second study, also from Belgium, discovered that giving 600 mg of alpha-lipoic acid a day for three months also reduced the frequency of migraine headaches. (*Headache* 07;47:52–57)

In both of the above studies, the nutrients were given for a three-month period. As such, you shouldn't look at either of these as being the treatment for stopping an acute headache. Deficiencies in many nutrients can take a while to replenish. This is particularly true when the nutrients are fat-like in nature and someone continues to take the drugs that are known to deplete them. If you decide to try these nutrients, then prepare to take them faithfully for at least three months to achieve the maximum effect.

Normally, defeating migraines requires multiple approaches. One of the most effective therapies I've seen is chiropractic adjustments to the cervical region (the neck). If caught early enough, this will often stop the headache from progressing—and continued treatments will often stop the migraines altogether.

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could be quickly cured with a single round of antibiotics, but nowadays that's not always the case. These bacteria have mutated and become resistant to semi-synthetic penicillins like methicillin, and infections can be fatal.

To make matters worse, most MRSA infections used to be acquired nearly exclusively in hospitals, but these resistant forms of bacteria have now spread into the general community—particularly schools, locker rooms, and sporting arenas.

Keep in mind that the first signs of MRSA are usually skin conditions that don't look that serious. They may resemble a spider bite, a boil, or acne. If untreated, these lesions can become abscessed and the bacteria can enter the bloodstream—where they can spread to vital internal organs like the heart or lungs. Current treatment may consist of draining the abscesses in an attempt to prevent the spread of the bacteria, plus treatment with powerful

Intravenous magnesium has also been effective at aborting a migraine. Magnesium deficiencies seem to be an increasing problem in this country, and it's easy to see why. The following types of drugs can lead to deficiencies:

- birth control pills,
- insulin,
- antibiotics,
- antacids,
- cortisone,
- diuretics (water pills), and
- numerous drugs used for treating cardiovascular disease.

And don't forget that adequate amounts of stomach acid are required for you to properly absorb magnesium.

Your diet can also have a dramatic impact on your magnesium levels. Alcohol blocks magnesium absorption. Coffee is a diuretic that flushes magnesium from the body. Food processing techniques like milling flour and dry roasting nuts remove magnesium from the whole food. Carbonated drinks and processed meats contain phosphates that bind to magnesium and carry it out of the body. It's not hard to see how you might be deficient in magnesium.

Estimates are that anywhere from 68–80 percent of the population in this country is deficient in magnesium. For migraines, the recommended dosage is usually 600 mg a day taken for several months. For this purpose, it's important to use the form called magnesium citrate on its own and not a blend of magnesium and calcium.

(and quite expensive, I might add) antibiotics like vancomycin. Unfortunately, some strains of the bacteria have become resistant to practically all current antibiotics.

From a practical standpoint, you should know that MRSA infections spread through contact, not through the air. Adopting increased hygienic habits is imperative. Washing your hands frequently and using alcohol-based sanitizers are effective ways to prevent the spread of infections. If you use a locker room or gym, wear protective footwear like flip-flops or Crocs. Don't share personal items like towels, combs, or brushes, which can dramatically increase the risk of transmission.

Shining Light on a Dark Condition

One of the most exciting developments I've seen is some research that was just released by researchers at the New York Institute of Technology. They discovered that exposing these bacteria to a specific wavelength of blue light destroyed them.

MRSA was completely eradicated when it was exposed to light from diodes at a wavelength of 405 nanometers (nm), in the blue range of the light spectrum. There was some concern, however, because the particular diode used in this trial emits light across the range of 390 to 420 nm, which includes some ultraviolet light (UV) that might increase the risk of skin cancer. Using a higher wavelength of 470 nm, however, had the same positive effect of killing the bacteria—but without any UV exposure. (*Lasers Surg Med* 08;40:734–737) (*Photomed Laser Surg* 09 Jan 28; E-pub ahead of print)

This is truly an amazing breakthrough. These researchers have found an inexpensive, naturally visible wavelength of light that destroys both the hospital-acquired form of MRSA (IS-853) and the community-acquired form (US-300).

If your local hospital or clinic doesn't offer this kind of light therapy, or if you or a loved one find yourself in a future situation where it's necessary to supplement your current treatment for an early MRSA infection, this information may end up saving a life. The present antibiotic therapy is becoming less effective every year, and more people are dying.

Get the Real Light

Since most of these infections start on or just below the skin, light therapy seems ideal. The 470 nm wavelength light comes from blue LED bulbs. I found this interesting, because lights of this wavelength are used for a few different things.

Special 470 nm lights are used as substitutes for moonlight in salt-water aquariums. The light promotes lunar spawning cycles in coral and reef life.

Lights using this frequency are being tested to increase the alertness of fatigued or sleep-deprived truck drivers. Reportedly, 30 to 45 minutes of 470 nm blue light exposure increases brain clarity and reaction times, and temporarily resets the brain's internal clock to morning.

It also just happens to be the same wavelength of blue light that's used by forensic labs and investigators

to detect gunshot residue and blood at crime scenes. You may have seen them being used on any one of the popular crime investigation programs on television. At this point I'm not recommending that anyone do so, but, from a practical standpoint, you could purchase a specialized forensic-type flashlight and use that to treat MRSA.

For their experiments, the researchers above used a Dynatron Solaris 708 device fitted with a 470 nm light probe. The company sells the units for roughly \$4,000, which seems very reasonable for hospitals and clinics treating these infections.

A company called Medtech Forensics carries a couple handheld LED units. One, made by Foxfury, is the HammerHead Blue 470 nm, item number 930-312, that sells for \$440. A less-powerful unit is the Scout Forensic Blue 470 nm, item number 300-112, with the same beneficial wavelength for only \$80. You can contact the company at www.medtechforensics.com or 800-596-6420.

The researchers who conducted the study I mentioned earlier held the light directly above the bacterial infections. The time of treatment varied based on the strength of the light, but for their particular instrument, 100 seconds of treatment was all it took. To be on the safe side and achieve the greatest effect, I see no reason why skin lesions couldn't be treated for several minutes, several times a day using any of these other devices. At this wavelength (470 nm) you don't have to worry about over-treatment, since that wavelength doesn't have UV rays or cause any skin damage—and since LEDs are a relatively cool source of light, heat shouldn't be an issue either.

Keep this information handy. MRSA infections are increasing every year, and for the young, the elderly, and those with compromised immune systems, they can rapidly become deadly. I pray you never have to resort to self-treatment in these cases, but at least you'll have the information available if the need arises.

Take care,

Dr. David Williams

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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