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One Bite at a Time


Dr. David G. Williams

With the start of a new year, the holiday season often causes us to reflect on our many blessings, as well as on the various challenges we face. It's a time to reflect, forgive both ourselves and others, and make the necessary adjustments to improve our lives. Making these adjustments isn't always easy, particularly when it comes to health habits.

For the most part, health problems don't arise overnight. Rather, they develop over a long period of time. It's not the one or two episodes of eating too much of the wrong foods; instead, it's the everyday, routine habits that eventually get us into trouble. For example, the first symptom of clogged arteries might be a bout of angina—or even a full-blown heart attack—but it takes years for your circulatory system to deteriorate to that point.

Once a major health problem rears its ugly head, dealing with the situation might seem overwhelming—or even hopeless. Rather than trying to address the problem with changes in our routine daily habits, we tend to revert to a crisis mode: one where only drastic measures are considered. Granted, drastic measures may initially be necessary in the case of heart attack or other immediate life-threatening situations. But in the majority of circumstances, actually restoring your health will require adjustments or readjustments of your daily routines.

It reminds me of the question, "How do you eat an elephant?" The answer is, "One bite at a time." To complete the biggest of tasks, we still have to focus on the smallest of details. We seem to have forgotten this, particularly when it comes to our health.

Everyone knows that heart disease is the biggest killer in this country. But when talking about treating heart disease, most people refer to bypass surgery, cardiovascular stents, various drugs, and restrictive diets. They've become brainwashed into believing that the problem can be solved by simply increasing the blood flow to the heart muscle. The fact of the matter, however, is that we all need to be focusing on the smaller details—in this case, circulation in the microvessels throughout the body.

Clear Signs, Silent Clues

Medically, we focus primarily on "macro" circulation. This involves the larger arteries and veins. By "micro" circulation, I'm referring to the much smaller arteries, arterioles, and capillaries that supply each and every individual cell within the body. There are over 50 trillion cells in your body, and every cell is less than 1/500th of an inch from a capillary. All told, the body has more than 60,000 miles of capillaries, which make up the "business end" of the cardiovascular system. This is the area of the circulatory system where vital gases, nutrients, and waste materials are exchanged. It's also the area that determines whether cells will live or die, and, ultimately, the degree of health or disease present in an individual.

The capillaries are so narrow that oxygen-carrying red blood cells have to line up single file to move through. Malfunctions in this area can be disastrous.

If you have any hint of clogging in the arteries feeding the heart, then rest assured you also have major problems with microvascular circulation. I would say that at

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

least 80 percent of the population over the age of 40 has moderately to extremely serious microvascular problems. No one, however, seems to recognize the problem. We've been somewhat blinded, so we see only the much more obvious problems that stem from poor microvascular circulation. We "can't see the forest for the trees."

Only since about the 1950s has there been any real Western interest in microcirculation. That hasn't been the case in the East. Traditional Eastern medicine has placed a great emphasis on this aspect of health for thousands of years. In my travels and studies with healing practitioners from India to China, microcirculation was analyzed and manipulated through the use of various herbs, acupuncture, hot/cold therapy, and magnetic fields. And even with new discoveries in the area, the difficulty in this country seems to be in transferring any findings into some form of clinical practice or treatment.

For example, it's well known that many individuals who suffer from cardiovascular complaints like chest pain and then later suffer from heart attacks have no blockage in the large arteries supplying the heart. It's only in the last 10 years or so that microvascular dysfunction has been recognized as the causative factor. Some researchers are even beginning to wonder whether microvascular problems cause more heart trouble than blockage of the major arteries of the heart. (*Ital Heart J 02;3:230–236*)

As we age, malfunctions at the microvascular level become more common. These microscopic vessels begin to break down due to blockages, leaks, and breaks. When you lose these "feeder" vessels, the cells of the various organs receive less in the way of nutrients, proteins, essential amino acid building blocks, minerals, essential fatty acids, protective antioxidants, oxygen, et cetera. The cells obviously begin to lose their ability to function properly. Their immune and reparative capabilities become impaired. When the microcirculation of an area begins to fail, the organ or tissue being supplied also begins to fail. Poor microcirculation has been implicated as a factor in Alzheimer's disease, senility, kidney dysfunction, numerous eye diseases, and the progression of diabetes complications. (*Prog Neurobiol 01;64:575–611*)

The list goes on and on, but, again, therapeutically dealing with microcirculation is outside the realm of most doctors in this country. They are too busy trying to deal with the aftermath. Most treat the symptoms of disease and not the disease itself. Most wouldn't even know what microvascular circulation is if you asked them. Unfortunately, they weren't trained to look at, or to treat, the underlying problem. Let me give you a glaring example.

Purple Spots Are Red Flags

One of the more common problems you'll see in the elderly is that of spontaneous bruising. They bruise easily without knowing the cause. Oftentimes the backs of their hands, arms, and elsewhere are covered with black-and-blue spots. It's so common that most doctors consider it a normal part of the aging process. The real problem is microvascular weakness.

After years of poor circulation, the problems begin to develop: leakage, clogging in the microvascular circulation, high blood pressure, heart disease, et cetera. In response, doctors prescribe aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs), "blood thinners" like Coumadin, blood pressure medications, steroids, statins, and other drugs. These medications make the blood cells less sticky, reducing their ability to clot, so they can line up and pass single file through the capillaries more easily. One of the big downsides, however, is that with a reduced ability to clot, even the smallest leakage in a capillary leads to uncontrolled blood flow—which shows up as spontaneous bruises. Capillary leakage in muscle tissue results in chronic soreness. Leakage in organs can result in scar tissue and malfunctions. And leakage in the capillaries of the brain can result in either major strokes or "mini" strokes—also referred to as TIAs (or transient ischemic attacks).

When you see the extensive bruising on a person's arms, hands, et cetera, what you're seeing is only the tip of the iceberg. If capillaries are breaking open and blood is leaking there, you can be sure that the same thing is happening throughout the body.

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The Many Signs of Poor Circulation

Spontaneous bruising is just one of many signs that indicate microvascular dysfunction. Here are some other common related symptoms.

High blood pressure: Studies have shown that, while at rest only 5 percent of the total blood volume is in the microcirculatory system, over 60 percent of the resistance to blood flow arises at the microcirculation level. (*J Hypertens Suppl 06;24:S10–S16*)(*J Hypertens Suppl 06;24:56–59*)(*Curr Med Res Opin 05;21(Suppl 5):S1–S6*)

In other words, blockages or leaks in the small capillary beds make it harder for the heart to pump blood through the body, and require higher blood pressures. The small blood vessels react to the higher pressures by continuing to increase the thickness of their walls, which in turn narrows the opening and eventually causes a blockage. As more small vessels become blocked, the blood pressure increases even more.

When functioning properly, the microvascular circulation also provides a cushioning effect during brief periods of elevated pressure, such as during stress—exercise, fright, et cetera. The capillaries can dilate and absorb the extra pressure from a pounding heart, preventing a rupture in blood vessels. This dilation becomes evident when a person's skin becomes flushed due to heat, exercise, or even embarrassment. When the system is damaged, we lose that ability and the risk increases for stroke and other blood vessel ruptures.

Kidney disorders: One of the functions of the kidney is to help control blood pressure by regulating the amount of sodium and potassium that leaves through the urinary tract. The high blood pressure events I described above, however, can destroy the microcirculation within the kidney and lead to a loss of this ability.

Diseases of the retina: The retina, at the back of the eye, can be very sensitive to higher blood pressures. The retina's small blood vessels are both plentiful and fragile. It is also one of the few areas where a part of the body's microvascular bed can be openly viewed. Skilled doctors can often detect changes in this area before symptoms begin to show up elsewhere.

Varicose veins: Backpressure from blockage in the capillaries causes a buildup of pressure in the veins feeding the heart. This results in a pooling of blood in the veins, particularly those more distant from the heart like those of the legs, ankles, and feet.

Fluid retention in the fingers, hands, and/or feet: When blood passes through the small capillaries, blood serum leaks out into the surrounding tissue. Normally, this is captured by the lymph vessels and returned to the circulation. When the microvascular system fails, the amount of blood serum lost can overwhelm the capabilities of the lymph system. This will result in fluid accumulation in the tissues, often referred to as edema. [*Editor's note: For more about the importance of the lymph system, refer to* Alternatives, *Vol. 11, Nos. 7 and 8.*]

Cold hands and/or feet: Obviously, vascular blockage and leakage result in poor circulation that limits the body's ability to warm itself.

Atherosclerosis (clogging of the arteries): Atherosclerosis is a systemic problem. In other words, it isn't isolated to just one area of the body. Unfortunately, the problem may not be discovered until some debilitating event like angina or a heart attack occurs. The blockage of a major artery will usually get everyone's attention, whereas smaller blockages throughout the 60,000 miles of capillaries might not be noticed as quickly.

Erectile dysfunction: I've mentioned this problem in the past. There are several causes of ED, including nerve, psychological, or circulatory disorders. Knowing that circulatory problems are one of the leading causes of death, it stands to reason that most cases of ED are related to circulation. It's also only reasonable that anyone with ED should be evaluated for microvascular disease. Odds are greatly in favor of it being present with ED.

One Final Sign

While it seems that most scientists are still trying to figure out the ramifications of microvascular disease and how to deal with it, those concerned with anti-aging are taking a more pro-active approach. Although one might fault them for not refuting the idea that "beauty is only skin deep," they are partially on the right track.

They realize that to achieve visible rejuvenation of the skin, they first have to find a way to rebuild the skin's microvascular system. And, surprisingly, they've done quite a bit of research in this regard.

They also understand that the skin is an organ like any other in the body. And, for it to react to other forms of treatment and not restrict its healing and rejuvenation properties, the vascular integrity of the skin must be optimal so it can deliver the necessary materials, energy, and oxygen needed for repair and regrowth.

One of the primary tools to accomplish this has been vitamin A in the form of retinoic acid (Retin-A and other similar products). They discovered that retinoic acid causes macrophage cells to produce chemicals that trigger angiogenesis and vascular endothelial growth factor (VEGF). Angiogenesis is the formation of new blood

NEWS TO USE FROM AROUND THE WORLD

A Bright Answer to Prostate Cancer

DETROIT, MICHIGAN—It's sad but true that one attitude among many health professionals is that if they don't know *how* something works, then it must *not* work. I doubt that we'll ever be able to change that attitude, so it's fortunate that ongoing research is beginning to reveal some of the mechanisms behind many beneficial foods and supplements.

A group of researchers at Wayne State University has been looking into the mechanism of DIM, or diindolylmethane, a substance found in cruciferous vegetables such as broccoli, cauliflower, and Brussels sprouts. They believe that they have discovered how DIM works to stimulate apoptosis (scheduled cell death) and inhibit angiogenesis (the growth of new blood vessels) in prostate cancer. (*J Biol Chem 07;282:21542–21550*)(*Cancer Res 07;67:3310–3319*)

DIM is already well known for its effects on hormone balance in women. Research on the effects on hormones in men is relatively recent, however. To date there are no published studies using men, and only two using male mice. I have a feeling all that will change, however, once word of these studies gets around.

While the research was somewhat specialized—involving an alphabet soup of chemicals including FOXO3a, NFκB, GSK-3beta, and uPA—the results appear conclusive enough to convince even the most skeptical of cancer specialists.

The Wayne State studies were both performed in the lab on human cells, but they help explain the results seen in an earlier unpublished study. In a group of 12 men taking 100 mg of DIM daily for three months, PSA levels decreased in 11. Two of the men had what's known as PIN, or prostatic intraepithelial neoplasia, essentially cancer that hasn't yet invaded the main tissue of the gland. By the end of the study, the PIN had disappeared in both men.

(Readers who have been with me for a while may remember that I'm not a big fan of the PSA test, because isolated readings can be deceptive. In this instance, however, I believe the test results are accurate, because they reflect changes over time.)

So far, all the clinical research on DIM has been conducted using one product, known as BioResponse DIM, that combines the DIM with other compounds, including vitamin E, to improve absorption. Because 3/4 of the complex is these "other compounds," you'd need to take 400 mg of the product to get the full 100 mg of DIM. (This is the same DIM product I've been recommending for years under its old name, PhytoSorb.) BioResponse DIM is available from the manufacturer at *www.bioresponse.com* or 877-312-5777.

vessels, and VEGF causes the formation of the cells that line blood vessels. These same processes occur naturally whenever the vascular system of the skin is damaged.

In one study, daily topical application of retinoic acid resulted in an 89 percent increase in the skin's microvascular circulation after only 6 months. Even 12 months after the applications were stopped, 23 percent of the positive effects were still there.

It's apparent that the researchers into skin rejuvenation are partially on the right track. They realize that the microvascular system that feeds and protects the largest organ in the body, the skin, has to be in the best possible working order for any therapy to make a *visible* difference. For a skin product to sell successfully, people have to see the difference it makes.

If those researching skin rejuvenation fall short in any respect, it's by overlooking the actual care and feeding of the skin—the same failure seen in treatment of other diseases. Once the microvasculature is re-established, one needs to focus on supplying the proper nutrients—minerals, essential fatty acids, and other necessary building blocks—to the organ. These can rarely be supplied by topical creams and ointments; instead, they require a change in the diet. I've been covering these various foods, herbs, vitamins, and supplements for years. Keep in mind that none of these will work their best unless your microvascular circulation is working properly. Fortunately, we have the tools and know-how to do just that.

Treating the Hidden Problem

If you're treating any circulation-related condition or disease, or if you want to prevent that disease, these are essential steps you need to take.

Reverse blood flow obstructions. As we age, blockages begin to form in small vessels of our microvascular system. To a degree, our bodies can compensate for this. Through the process of angiogenesis, new blood vessels can form to replace those with blockages. Other blood vessels can dilate to help compensate for those that are blocked. Unfortunately, both of these compensation mechanisms decrease with age. Angiogenesis, for all practical purposes, shuts down after puberty, and, with age, blood vessels become stiffer and less elastic.

The enzyme nattokinase can be used to clear these blockages. It is truly a remarkable supplement, one I highly recommend taking daily if you're over age 40. (I

HEALTH HINTS FROM READERS

Sore Throat Remedy

With cold and flu season upon us, I thought I'd pass along my remedy for relieving a sore throat.

I'm a relatively new subscriber, but I have several of your reports and back issues to Alternatives *and I know you're a fan of turmeric, so you should like this remedy.*

I mix bulk powdered turmeric with raw honey to make a thick paste. As soon as I notice my throat becoming sore I take a heaping teaspoon of the paste and slowly let it dissolve in my mouth and trickle down my throat. After each spoonful I'm careful not to drink anything or rinse my mouth for 15 or 20 minutes.

The combination of the turmeric and honey works like a dream.

Adam K., Eugene, Oregon

Sink a Migraine

My doctor taught me a cool (I should say hot) technique to stop my migraine headaches as soon as I experience the "aura." Other readers might find it useful as well.

Just as soon as I notice the headache starting, I fill the kitchen sink full of the hottest water I can stand to put my hands in. As it is filling I place my hands and forearms in the water at least up to my elbows. I have to keep the water just as hot as I can stand it without burning myself, of course, so I usually have to keep adding hot water. It's slightly uncomfortable, but within 8 or 10 minutes my headache stops.

I'm not sure why it works, and I know it's not a cure because my headaches always come back another day. Even so, it's been a lifesaver.

Janet W., Indianapolis, Indiana

This technique works by redirecting blood flow away to the hands and arms. It normally only works for the "vascular" form of migraines. The extreme heat causes the blood vessels in the hands and arms to dilate and flood with blood in an attempt to cool the area.

Although most headaches are truly neurological in nature, it's not uncommon to experience vascular changes when they occur. Many individuals with vascular migraines such as you describe will experience cold hands when they first notice the aura, or period immediately preceding the headache. Some individuals who are skilled in biofeedback are able to mentally increase the blood flow to the hands and arms without the hot water and have been able to stop their headaches in that manner. It obviously takes some practice and training, but it would certainly be worth a try if the hot water wasn't available.

Fighting Fungus

I want to let other readers know that for ringworm we apply the dandruff shampoo called Selsun Blue. It works rather quickly, particularly if you're able to leave it on overnight.

S.G., Everett, Washington

Ringworm, as you probably know, is a fungal problem, not some kind of worm. Many people don't understand this. Other treatments I've found to work include the tree pitch known as PAV from NATR and a paste made from pascalite clay and either honey or water. PAV can be found at *www.natrhealth.com* or 800-422-4716. You can get pascalite clay from the Pendergraft family, the original operators of the pascalite mine, at *www.pascalite.com* or 307-347-3872.

I've also successfully used various honey preparations containing bee propolis, and even various diaper rash creams when I was away from home and couldn't get the propolis. If those aren't available, then Aveeno makes a very gentle oatmeal anti-itch cream that helps, but it may take a week or two to resolve the problem completely.

Canker Sore Fix

All of my problems with canker sores stopped after I started reading labels and made sure none of the toothpastes I used contained sodium lauryl sulfate. I now use Sensodyne.

M.G., Alameda, California

Sodium lauryl sulfate is classified as a "foaming agent" that's often added to products like shampoo and toothpaste. Many people find that it is an irritant and causes everything from eczema to canker sores.

personally do.) Nattokinase is one of the few compounds that can effectively remove fibrous tissue and other clotting components anywhere in the body. I call it the "poor man's clot buster." [*Editor's note: For more about the benefits of nattokinase, visit the Subscriber Center of the* Alternatives *Web site,* www.drdavidwilliams.com.]

Strengthen the microvascular blood vessels. The underlying cause of spontaneous bruising is capillary fragility due to a deficiency of vitamin C and bioflavonoids. Blood thinners only make the problem worse. When the capillaries and veins break down and leak, the blood has lost some of its ability to clot and stop the bleeding.

Whole, particularly raw, foods rich in the vitamin C complex are deficient in today's diet. When it comes to maintaining blood vessel integrity, vitamin C requires the help of bioflavonoids such as quercetin and rutin. While the public now has a better understanding of the need for vitamin C, very few are familiar with its intensified healing powers when combined with bioflavonoids.

Research seems to indicate that an adequate dose of bioflavonoids to maintain vessel integrity is about 1/10 the amount of vitamin C consumed. For example, if you already have bruising or capillary fragility, something along the lines of 3 to 5 grams of vitamin C daily should be taken with 500 mg of mixed bioflavonoids.

Berries are packed with a wide variety of various bioflavonoids and are an excellent source of these compounds. I highly recommend that you include them in your diet whenever you can. Black currants and bilberries, both native to Europe, have been shown to be particularly effective at improving microcirculation. Extracts of each are now available in most health food stores.

Increase microvascular elasticity. Over ten years ago I reported on some research performed by Dr. Anoop Chauhan. I thought it was some of the most important and useful work I'd seen in decades, but apparently I was one of the only ones who thought so.

Dr. Chauhan confirmed that the ability of our microvascular system to dilate decreases with age. More importantly, however, he demonstrated that we could reverse this impairment with the amino acid L-arginine. (*J Am Coll Cardiol 96;28:1796–1804*)

You would have thought that cardiologists around the world would have shouted this information from rooftops. As we say in Texas, they should have been "on it like a duck on a June bug."

Dr. Chauhan found that by increasing blood levels of L-arginine, which is converted to nitric acid, even older blood vessels will relax and dilate, dramatically increasing blood flow through them. Just a small increase in diameter translates into a huge improvement in blood flow. For example, if you double the radius of a vessel, your blood flow is four times as great.

Pharmaceutical research scientists are constantly looking for compounds that can safely trigger arteries to increase in diameter. L-arginine fits the bill, but there's obviously not been interest in promoting it because it's inexpensive, readily available, and nonpatentable.

If you want to improve elasticity in your microvascular vessels, L-arginine is the miracle substance that can do it. A dose of about 6 grams (3 grams taken twice daily) has been shown to double blood plasma levels in just a few weeks. L-arginine is available from Jo Mar Labs, at *www.jomarlabs.com* or 800-538-4545.

Improve poor microvascular blood flow. Increasing blood flow increases the exchange of oxygen for carbon dioxide and of nutrients and necessary raw materials for waste products. This speeds the healing process in any condition. The easiest, least expensive way to increase blood flow is through exercise. That's why it will always be essential for optimal health.

The B vitamin niacin is also an effective way to increase microvascular blood flow. Niacin is the vitamin that creates a "flushing" in the skin when taken in larger amounts. If you've experienced the niacin flush (which must be something like the hot flashes of menopause) you know what I'm talking about. Some people dislike the temporary (15–20 minutes) noticeable surge in blood flow to the face, chest, and/or hands, but I like it.

(Years ago I wrote about the extraordinary work that Dr. William Kaufman performed in the 1930s and '40s on niacin's cousin, niacinamide. If you have that issue, I would urge you to read it again. [*Editor's note: For more about the benefits of niacinamide, see "The Test of Time" on the next page.*] Dr. Kaufman's extensive research found that niacinamide was very effective in alleviating problems as varied as depression, anxiety, limited joint mobility, osteoarthritis, fatigue, and liver disease. I have no doubt that much of his success is due to the compound's ability to dilate blood vessels in the microvascular system, immediately improve blood flow, and accelerate healing.)

Niacin is undoubtedly one of the safest, least expensive, most effective, and underutilized vitamins we have. If everyone spent a nickel a day on niacin we'd see a dramatic decrease in our society's overall health problems.

As I mentioned earlier, anticoagulant drugs are the primary method used today to increase blood flow. They can also cause spontaneous bruising and unseen bleeding throughout the body, and their side effects most often outweigh their benefits, considering that there are safer alternatives such as onions, garlic, bromelain, green and black tea, and fish oil.

One of the more powerful tools to safely increase microcirculation is the herb ginkgo. Dozens of research studies have confirmed both its safety and its effectiveness, at a dose of 40 mg taken three times daily of an extract standardized to 24 percent ginkgo flavone glycosides. Nattokinase and ginkgo offer the supplemental one-two punch to knock out microvascular blockages and improve microvascular flow.

(Microcirculation continued on page 56)

The Test of Time: *The Niceties of Niacinamide*

The therapeutic effects of niacinamide were first studied in the mid-to-late 1930s by Dr. William Kaufman. Research at the time revealed that niacinamide was necessary for the formation of two coenzymes. These coenzymes are crucial to over 200 metabolic processes in the human body, including energy production.

As he continued his research, Dr. Kaufman discovered that inadequate amounts of niacinamide in the diet could be directly responsible for a long list of physical and mental problems—ones that were simply considered a "normal" part of the aging process. His list included such varied conditions as nervous system impairment (resulting in depression, anxiety, and personality changes), over-reaction to noise, abnormal skin sensations, changes in mucous membranes, excessive callus formation, and yellowish or brown pigmentation of the skin.

The therapeutic benefits of niacinamide for joint pain are now well known. Taking 1,500 mg daily in 250 mg doses spaced throughout the day can provide relief for even the most extreme examples of the problems I listed. (Taking the 1,500 mg all at once won't give you the same results, however. You need to keep taking it throughout the day to keep the level in your blood fairly stable.) Here are a couple of other ways you can take advantage of niacinamide's benefits.

Fatigue, Muscle Strength, and Working Capacity

To quickly and accurately measure the effect niacinamide had on fatigue, muscle strength, and working capacity, Dr. Kaufman monitored each patient's hand strength with a gripmeter and one of those small handheld counting devices. He found that positive results attained in the small muscles in the hand were consistent with positive changes throughout the body.

Specifically, Dr. Kaufman found that roughly 70 percent of patients who took 100 to 300 mg of niacinamide demonstrated a greater working capacity and less fatigue after only 30 minutes. Muscle strength also improved after 30 minutes in about 30 percent of the patients.

Keep in mind that Dr. Kaufman made these initial findings by monitoring each patient in his office for an hour or longer after they took their very first dose of niacinamide. More pronounced improvement was observed as the patients continued on the therapy over a period of several months.

Loss of Balance

There are three methods Dr. Kaufman used to check for a loss of balance. (If you test yourself using any one of these methods, have someone nearby who can keep you from falling.) In general, the more tests you can pass, the greater your sense of balance.

1) Stand on one foot for at least 15 seconds.

2) Next, stand on the same foot with your eyes closed for a minimum of 15 seconds.

3) Finally, while standing on the right foot, raise your left foot up and place your left heel one inch in front of your right knee. Keep your hands at your sides the entire time. If you can stand in that position with your eyes open for at least 15 seconds, then repeat the test with your eyes closed.

Each of these tests should be done twice, once balancing on the right foot and once on the left.

In part, being able to balance yourself properly involves certain nerve fibers running up and down the spinal column that tell the brain the location and angle of each joint in your body. A deficiency of niacinamide has been shown to interfere with these pathways and affect your ability to stay balanced.

Taking niacinamide can have a very positive effect on balance, and most people see gradual improvements over a period of several months. If you want to see if there's any immediate improvement, simply repeat the balance test 30 minutes after taking a dose of niacinamide. Even if you don't see a difference right away, it's well worth sticking with it since it may take up to three months of constant therapy to achieve noticeable progress.

A Word About "Time-Released" Supplements

To make it easier to take high doses of niacinamide, a few companies have come out with time-released niacinamide products. The problem with these time-released products is that they can possibly cause liver problems, so you would need to get periodic tests to monitor liver function. I don't recommend taking these products.

Taking straight niacinamide in smaller doses throughout the day has never caused any liver problems or other side effects. Apparently, the carefully balanced blood levels allow both the liver and the kidneys to deal with the higher levels of niacinamide.

Tip from Vol. 7, November 1997

(Microcirculation continued from page 54)

The Thyroid Connection

I suspect that one of the primary reasons for poor microcirculation and the premature aging and degeneration that accompanies it is an underactive thyroid.

Hypothyroidism is one of the most common problems in our society today. I've discussed the problem on numerous occasions, and explained in great detail ways you can check and treat the problem yourself. The adverse consequences of hypothyroidism are many—including excess weight gain, inability to lose weight, constant fatigue, heart disease, cold hands and feet, irritability, depression, loss of memory, inability to concentrate, and dozens more common symptoms.

While most doctors are familiar with the above symptoms, few realize the link between an underactive thyroid and microcirculation. Research has now shown that the thyroid hormones have a direct dilating, or opening, effect on the smallest blood vessels in the body. (*Am J Physiol Heart Circ Physiol 05;288:H1931–H1936*)

The skin of individuals with hypothyroidism may receive as little as 20 to 40 percent of its normal blood supply. Realizing this, it doesn't take a genius to now understand why these individuals may experience cold extremities, hair loss, dry skin, wrinkling, and other signs of premature aging, in addition to a general weakening of other organs throughout the whole body.

I can't help but believe there will be more interest in microvascular circulation when people begin to understand it better. It doesn't matter, however, whether the mainstream health media and conventional medicine take one year or 20 to discover its importance. The important thing is that you understand how dramatically it affects your health and well-being, and that you start to take the steps I've outlined to protect your own health.

The research on microvascular problems is out there; one just needs to connect the dots. For example, the death rate for women with heart disease hasn't improved the way it has recently for men. In men, the standard tests have been useful at discovering blockages in the coronary arteries, and bypass surgery and similar therapies have prolonged their lives. These same tests routinely find "clear" arteries in women, even in those who have all the symptoms of heart disease and often suffer fatal heart attacks shortly thereafter.

Only now are researchers starting to consider the concept of coronary microvascular disease (coronary MVD) or "non-obstructive" coronary artery disease. Early estimates are that as many as 3 million women in this country are at risk of coronary MVD. Recognizing the problem is certainly a start in the right direction; we can only hope they look a little deeper into some of the available solutions mentioned above rather than wait or experiment with some pharmaceutical "silver bullet."

Earlier I mentioned that the eye is one of the few places where the blood vessels can be viewed directly, and is often the first place where trouble is noted. An Australian study, just released, found that individuals with eye diseases such as cataracts and age-related macular degeneration have a higher likelihood of premature death than individuals who don't have those problems. However, the researchers couldn't figure out why. It apparently didn't dawn on them that not only are the eyes "the window to the soul," they're also a window to the rest of the body. (*Arch Ophthalmol 07;125:917–924*)

Other recent studies have confirmed that damage to the microvascular system in the brain from blood sugar imbalances, elevated homocysteine levels, et cetera, has possible links to dementia in the elderly and Alzheimer's disease. (*Diabetes 06;55:334–340*)(*Am J Clin Nutr 00;71:859–860*)

The writing is on the wall. If you disregard your microvascular system, you do so at your own peril. We know how to restore and protect it with diet and supplements. Remember it's the "business end" of your circulation system. Give it the proper tools and attention so it can continue to do its job.

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.

Here's how you can reach us:

- For Customer Service matters such as address changes, call **800-527-3044** or write to **custsvc@drdavidwilliams.com.**
- If you are a licensed health professional and would like to learn how to begin reselling MHN supplements to your patients, please e-mail practitionerinquiries@davidwilliamsmail.com.
- For back issues or reports, call **800-718-8293.**
- To sign a friend up for *Alternatives*, call **800-219-8591.**

Visit the *Alternatives* Subscriber Center at drdavidwilliams.com

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