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Dr. David G. Williams

The Clock Is Ticking

Over the past couple of months I have discussed what I feel are the primary areas that need to be addressed to both prevent disease and slow the aging process. If you recall, regulating your insulin levels was top on the list. Primarily this involves lowering your intake of refined carbohydrates (sugar, corn syrup sweeteners, etc.) and highly processed grain products, such as white flour in the form of breads, pastas, crackers and the like. (I've discussed this principle in past issues, particularly May 2004.)

Since then many readers commented that writing about anti-aging was quite a departure for me. I guess that's true. I normally don't spend a lot of time or space outlining the latest anti-aging news or so-called breakthroughs on reversing the aging process. This isn't because I don't find them interesting; quite the contrary.

We just had a new baby last November and I want to be around as long as possible to enjoy life with him, as well as with my wife, my other children, family, and friends. Like everyone else I would like to live a longer, healthier life. Anti-aging "breakthroughs," however, seldom prove to have any lasting merit. Despite what you may read or hear on television, so far there is no magic pill, formula, or technology that will "save the day."

Health and longevity are related to numerous factors such as genetics, diet, hormones, attitude, exercise, quality of sleep, environment, elimination of toxins, and the ability to handle stress, among other things. But simply manipulating any *one* of these won't lead you to the fountain of youth. For optimal *health and longevity* you have to address several areas.

Medical scientists tend to work in very specialized and detailed fields. Oftentimes, it may take decades to see any practical application for their findings. It may be even harder to see how their discoveries fit into the overall picture. This seems to be particularly true for work on aging. There are dozens of theories on aging and the possible methods that might slow or even stop the process. Being able to prove they actually work, however, has been another matter. To date, the only thing that has been demonstrated to increase lifespan is calorie restriction.

Drastically reducing caloric intake, by roughly 30 percent of what is considered normal, has been shown to lengthen the life of every species tested, including worms, spiders, rodents, dogs, cows, and monkeys. It stands to reason that the same thing will occur in humans, and there are ongoing studies investigating the question, but it will take years before we have the results. Even if it works, being constantly cold, fatigued, and hungry, and having the physical appearance of someone starving isn't my vision of a life-extension program. I speak from experience. Years ago, during my many travels for this newsletter, I had the opportunity to practice this form of life extension, with dozens of new-found "friends." Unfortunately I wasn't enrolled in some nicely-controlled medical study. Instead I was thrown into a

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

remote Central American jail compound. (In the 1980s, getting information out of Marxist countries was a hazardous undertaking.) I can tell you, caloric restriction is not all it's cracked up to be. Personally, trying to subsist for a lifetime on a near-starvation diet would fall more under the heading of a life sentence rather than life extension. Fortunately, some of the latest research suggests there may be a far easier way to get the benefits of caloric restriction without resorting to such drastic measures.

Just last year, Cynthia Kenyon, a biochemist at the University of California in San Francisco, uncovered a crucial piece of the puzzle dealing with aging. It caught my attention when I saw the connection it had with insulin and low-glycemic foods. And when you combine her discovery with the latest research of pathologist David Sinclair, a professor at Harvard, we may very well have an extremely simple tool to manipulate certain enzymes that help regulate lifespan. The ramifications of these two findings are immense.

It appears we may have a very easy way to add 5 to 10 years to our lifespan immediately and, in the process, prevent some of the most common diseases of our time. It may take the next 10 or 15 years to totally understand the exact details of how this all works, but there's no need for you to wait that long. This is information you can and should put to good use right now. When the details finally do come out in a few years, I suspect it may very well be one of the biggest breakthroughs ever in anti-aging research.

Worm Your Way In

In simple terms, Cynthia Kenyon has demonstrated that hormones control aging…in worms. The process is obviously complex, but the hormones involved are insulin and one called IGF-1 (insulin-like growth factor-1). By eliminating the gene responsible for conveying the hormones' message across the cell wall, she has been able to increase the worms' lifespan by six-fold.

In other words, *impeding* the worms' insulin and IGF-1 pathways increased their lifespan dramatically. And what was even more amazing was that the worms weren't just surviving, they were thriving. *They weren't just healthier for a longer period of time, they were younger for a longer period of time*. The older worms were still active and healthy long after the normal worms were frail or dead. Kenyon has described the treated worms as 90-year-old people that looked and acted like 45-year-old people.

At first glance this might not be too exciting, since Kenyon's work dealt with worms. That's what I thought, too…until I dug a little deeper.

Worms are commonly used in studying genetics for three reasons. First, they are easy to manipulate genetically. Second, they have short life spans (about 20 days, compared to mice which can live anywhere from two to four years), which allows experiments to be conducted quickly. Third, worms also have endocrine or hormone systems. And although it might seem like a stretch to think that what works in worms might have an effect on humans, it's not as far-fetched as it might sound. In genetics, every basic system that has been found to exist in flies, worms, and mice has also been found in humans. And this same hormone system and its mechanisms for controlling aging have now been found in both fruit flies and mice.

Based on Kenyon's earlier work, a researcher in France, Martin Holzenberger, recently genetically altered mice so they would respond to the IGF-1 hormone poorly and found these IGF-1–impaired mice lived 26 percent longer than normal mice. (*Nature 03;421(6919):182-7*)

In a related study, Ronald Kahn with Boston's Joslin Diabetes Center released data showing that mice genetically altered to respond poorly to insulin lived 18 percent longer than normal mice. (*Sci 03;299(5606):572-4*)

Confirmation that the insulin/IGF-1 system helps control the aging process in mammals has sent shock waves through the anti-aging research community. Nobody I spoke with thought discoveries like these would appear so quickly.

There are variations of course, but, based on what we've learned about genetics, the odds are very high that the insulin/IGF-1 system helps control the aging process in humans.

Obviously it's not feasible, or even advisable at this point, for us to start trying to manipulate our genes to alter this insulin/IGF-1 pathway. But new research shows that there are some simple methods we can use to achieve pretty much the same effects as genetic modification.

First let's look at insulin. Insulin has to be one of the most-researched hormones in medical

science. Practically every day we're learning more about the importance of insulin regulation and the effects it has on problems like obesity, blindness, heart and vascular diseases, neurological abnormalities, and now aging. In a strange turn of events, the growing epidemic of diabetes appears to have been instrumental in stimulating research that has helped uncover simple dietary changes that can slow the aging process.

Sugar—A Not-so-Slow Suicide

As you know, insulin is released by the pancreas when sugar or glucose levels in the bloodstream rise. Insulin helps move the glucose out of the bloodstream by "opening" microscopic channels or gates in cell walls. Once the glucose enters various cells it can be used for energy. One of insulin's other primary functions is to promote the storage of fat in the fat cells of the body. *As your insulin levels increase, more calories are easily stored as fat.* Under ideal circumstances this stored fat can later be used as a secondary energy source for the cells in the form of fatty acids. However, in people who overeat (especially high-glycemic carbohydrates, which trigger even more insulin and more fat storage) and don't exercise, this fat just continues to accumulate.

Basically, this new research indicates that if you modify your diet so that you produce less insulin, it becomes an effective anti-aging tool. There are many diets like this these days. They are referred to as low-carb diets (Atkins, South Beach, etc.), but more specifically the anti-aging diet should be a *low glycemic index–carb diet*. You can eat plenty of carbohydrates in the form of vegetables, just not the starchy ones or the refined sugars or grains that turn into sugar quickly in the bloodstream and trigger additional insulin release. (There's a good chart of high- vs. low-glycemic index foods at *www.mendosa.com* [click the "Food" link at the left].)

There are other ways, which I've explained in the past, to lower the release and need for insulin. Most recently, I explained how researchers uncovered that adding just a little cinnamon to your daily diet can reduce the need for insulin. Other compounds that help include chromium, alpha lipoic acid and vanadium. And don't forget that regular exercise and correcting a hypothyroid situation will also have a dramatic impact.

While this may sound like the same old story—cut out the sugars and the sweets if you want to stay healthy—this new research shows there's much more to the story. We're not just talking about preventing disease, we're now talking about actually slowing the aging process.

The results Cynthia Kenyon has seen in her lab have dramatically changed her thoughts on the aging process, and her eating habits as well. She found that when she lowered insulin levels in her mice it lengthened their lifespan; she also found that when glucose (sugar) was added to their diet it shortened their lifespan. As a result, she avoids high-glycemic foods in her own diet.

She doesn't eat sweets, potatoes, bread, pasta, or rice. She eats plenty of carbohydrates but not the high-glycemic ones that turn to sugar quickly in the body and raise insulin levels. Her diet includes meats, cheeses, fish, nuts, salads, lots of vegetables, and eggs. She reports that, after eating like this for less than two years, her triglyceride level is 30 mg/dL (triglyceride levels are one indication of insulin and glucose levels; less than 200 is considered good). Her good cholesterol is 86 mg/dL, which is very healthy.

The second hormone we need to look at is insulin-like growth factor-1 (IGF-1). New research shows that it works intimately with insulin to help control the speed at which we age.

IGF-1 stimulates growth and cell division. Like many other hormones, quantities of IGF-1 begin to

(Continued on page 102)

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NEWS TO USE FROM AROUND THE WORLD

It's Only a Patch, Not a Real Fix

TOWNSVILLE, QUEENSLAND—Doctors at James Cook University here have uncovered a serious problem in what proponents of vaccines hoped would help overcome resistance to vaccinations.

As word gets out about the potential dangers of mass vaccinations, more-informed individuals have been questioning the safety of such procedures, and avoiding vaccinations in general. In an effort to make everyone more compliant, pharmaceutical companies have begun testing adhesive patch vaccinations. Avoiding injections and the associated pain, they feel, will make more people opt for vaccinations. The patch wouldn't need refrigeration or any medical skill to apply.

Estimates are that, within five years, seven out of every ten vaccinations will be administered by an adhesive patch. Clinical trials are already underway here in the US. I can only imagine the marketing potential of being able to sell vaccines directly and sending them through the mail to everyone's home.

In addition to either the virus or bacteria found in conventional vaccines, these patches also contain accelerants that increase the body's response to the vaccine. Doctors in Australia have found that, as well as speeding up the response to the vaccine, the accelerants also speed up any other ongoing tissue damage that happens to be occurring in the person.

They specifically found the accelerants increased the likelihood of bringing out underlying problems like type 1 diabetes and multiple sclerosis. This probably holds true for numerous other auto-immune type diseases where the accelerants amplify the response of the immune system.

The response from the patch vaccine manufacturers apparently was that broader segments of the population need to be tested. In other words, it would seem they hope that the larger the group you tested the smaller the problem might seem to be.

I am not a proponent of vaccinations, and giving them by way of an adhesive patch instead of a needle may make them even more dangerous.

Think Globally, Act Locally

NEW YORK—When you read about HIV/AIDS these days, it seems most of the stories involve Africa, Southeast Asia, or South America. In this country we've been lulled into thinking it has somehow become a third-world problem, and one that is under control in this country. In many parts of the US this may be true, but not in New York City.

Epidemiologists with the New York Academy of Medicine reported that HIV remains the leading cause of death among New Yorkers 25 to 44 years of age.

Currently, more than 75,000 people in New York are known to be infected with HIV or have AIDS. Another 15,000 have the infection, but don't know it, which brings the number to as high as 90,000. That makes roughly 1 percent of the population living with HIV. Almost 3 percent of all the men in the city have the disease, and almost 4 percent of all the men between the ages of 40 and 49. (Of the total infections reported in 2001, roughly 65 percent involved men.)

While New York contains just 3 percent of the US population, it accounted for 15 percent of the nation's AIDS cases and 18 percent of the AIDS-related deaths.

Obviously, prevention is key to resolving the AIDS epidemic, but part of the problem with the continued spread of the disease is the difficulty, cost, and embarrassment of getting tested for HIV. There is one test that utilizes a saliva sample and can be done in the privacy of your home. It doesn't involve lancets, needles, or even a blood sample. It checks for HIV-1, and the results are available within 20 minutes. The test, called OraQuick, isn't sold over-the-counter or through the mail but can be ordered over the Internet from Canada for about $35. The information can be found at the Web site *home-hiv-test.com* (note there's no *www*).

Pass the Gumbo, Please

WADENSWIL, SWITZERLAND—If ulcers are a recurring problem and you're still planting a summer garden, you might want to include a row of okra. Okra is more of a Southern dish, one that I've eaten since childhood and a particular favorite as an ingredient in gumbo, a Cajun soup. If it's new to you, there's good reason to try it now.

Researchers here found that extracts of the plant appear to gum up the surface of *Helicobacter pylori*, the bacterium associated with ulcers, and prevent it from sticking to the stomach wall. The sticky goo in okra that does the trick is apparently rich in sugar-coated proteins and complex sugar compounds. When they tried to isolate and purify the preparation, it didn't work as well. *(J Agric Food Chem 04;52(6):1495-503)*

Here's another example of the healing powers of complex sugars and/or glycoproteins, as we've discussed many times in the past. (The simple sugars such as sucrose and fructose are the ones to avoid.)

A Good Head on Its Shoulders

DUBLIN, IRELAND—My wife and I had the good fortune to be in Dublin two years ago on St. Patrick's Day. It was quite a celebration, and the party starts early. The locals of all ages were drinking their Guinness for breakfast that morning, and the Guinness flowed non-stop throughout the day and night. For some reason none of the pubs ran out of beer, but every pub, restaurant, fast-food outlet, and grocery store ran out of food that evening. I'm sure it had something to do with Irish priorities.

Years earlier, I learned from doctors there that they often prescribed Guinness to their patients following surgery, to prevent anemia. Apparently, it has a high iron content. Newer research has also found that it is twice as effective at preventing blood platelets from clumping as traditional lighter beers. I assume that doctors in Ireland now will be prescribing Guinness for their heart patients as well. It sounds like a recommendation I could also support.

Sunshine—the Other Vitamin

LOS ANGELES, CALIFORNIA—I've harped on the need for additional vitamin D, from both sunlight and diet, for years. Since I've written extensively on the subject in the past, I'll make this rather brief.

In addition to all the problems associated with vitamin D deficiency I talked about before (chronic muscle and joint pain, various cancers, hip and other bone fractures, osteoporosis, multiple sclerosis), it now looks like it may be associated with insulin resistance. Insulin resistance, as you know, can lead to diabetes.

In a recent study, researchers at the University of California found that low vitamin D levels resulted in insulin resistance and improper function of the pancreatic cells that help produce insulin.

If you, or your family, have a history of type 2 diabetes, insulin resistance, or hypoglycemia (low blood sugar), then adequate amounts of vitamin D are even more important. At least 30 minutes a day in the sunshine (without a sunscreen) would be helpful, and a daily multivitamin that includes a minimum of 400 IU of vitamin D would be highly recommended. *(Am J Clin Nutr 04;79(5):820-5)*

Antibiotics and Breast Health

SEATTLE, WASHINGTON—Researchers at the Fred Hutchinson Cancer Research Center found that there is a strong correlation between a history of antibiotic use and breast cancer in women.

When the records of 2,266 women with breast cancer were compared to those of 7,953 randomly-selected women, those using antibiotics for a total of at least 500 days during a 20-year period had double the risk of developing breast cancer compared with those using antibiotics for less than 100 days total. However, even use for just 1 to 100 days over the 20-year period provoked a modest increase in breast cancer risk compared with those who never used the drugs.

Antibiotics can be lifesavers, but, like all drugs, they do carry side effects. It might take years before those effects appear. Unfortunately, after such a delay it's very likely that no one will ever make the connection.

In this case, no one is certain what the connection might be between antibiotic use and breast cancer, or even if there is one. It could be that women with more inflammation might be more susceptible to the cancer, or maybe these women have a weaker immune system. Personally, I think the connection isn't that far-fetched.

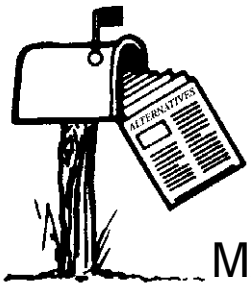
Keep in mind that good bacteria in your lower bowel are a crucial part of your immune system, and vital to remaining healthy. The friendly bacteria produced are necessary to keep bowel movements regular and remove toxins that would otherwise continue to circulate and create problems throughout the body. If excess estrogen isn't eliminated from the body through this channel, it's possible increased levels could "fuel" estrogen-dependent cancers like those of the breast.

Most doctors fail to realize that, in addition to killing the "bad" bacteria, antibiotics can also wipe out the beneficial flora in the gut. This is why probiotics and naturally fermented, unpasteurized foods are so important. When the natural, protective barrier of bacterial flora in your lower bowel is disturbed, it opens the gates to allow all types of pathogens and toxins to enter your bloodstream and wreak havoc anywhere in your body.

There are times when you may need antibiotics, but those are the times you need to make certain you're also increasing the amounts of probiotics and/or fermented foods in your diet. And it would be wise to continue the increased usage for at least a month after stopping the antibiotics. Doctors shouldn't be giving antibiotics without stressing and prescribing the latter.

Hopefully, there will be follow-up research in this area. As it stands right now, researchers consider these findings a fluke and are still scratching their heads, puzzled over their results. If they would go back to their basic physiology texts and review what they were supposed to have learned earlier about how the human body works, it might not be such a puzzle at all.

I probably don't have to say it again, but…it's my firm opinion that the fewer drugs you have to use during your lifetime, the better off you'll be in the long run.



MAILBOX

Question: I was motivated by your article last year and subsequently changed my diet and started exercising regularly. I've been losing weight and feel a thousand times better. I have one problem, however. After I walk vigorously for several blocks I begin to experience breathing problems. It seems like asthma and I find it very difficult to breathe. From my checkups I know it's not my heart, but maybe I'm developing asthma. Any thoughts? *Todd V., Ogden, Utah*

Answer: It sounds to me like you might be experiencing a condition called exercise-induced bronchoconstriction (EIB). If that's the case, it can usually be resolved quite easily by adding fish oil capsules to your daily supplement program. I would suggest taking one 500-mg capsule with lunch and another with dinner. Research has shown that the anti-inflammatory effects of the oil will very often stop the breathing problems. Keep in mind, however, that it will probably take at least 3 to 4 weeks to get enough in your system to know if this is going to solve the problem.

After the problem subsides, you can probably reduce your intake to one capsule with the evening meal.

(Continued from page 99)

decline as we age. Holzenberger's team found that with lower IGF-1 levels mice were more protected against various chemicals and other compounds that generated free radicals. There was less damage to their DNA, proteins, and cell membranes than animals with higher IGF-1 levels.

Lately, particularly in anti-aging circles, the reasoning seems to be that when levels of any particular hormone are higher during youth, an increase when we're older will help reverse the aging process. Based on this premise, some companies are selling products to help increase your IGF-1 levels. In reality, the research I cited earlier indicates that, just as with insulin, less IGF-1 rather than more can increase your longevity.

This newly discovered fact is just another example of the extreme complexity and dangers that can be associated with artificially manipulating hormones. For years, some doctors have been promoting human growth hormone as the fountain of youth. We now know that any positive results from such activity are usually short-lived and may trigger even worse problems, such as increased levels of insulin and sex hormones.

Now Harvard Professor Sinclair's research supports Kenyon's work that this insulin/IGF-1 pathway can be altered naturally without venturing into the minefields of hormone use. Late last year his team identified a group of organic molecules that were capable of extending lifespan. He found that a compound in red wine increased the activity of a longevity protein that affects the insulin/IGF-1 system. The compound, resveratrol (pronounced rez-VER-a-trawl), is a polyphenol that has already been shown to mitigate various age-related problems like arteriosclerosis (clogging of the arteries), nerve degeneration, and cancer formation.

What's French for "Longevity"?

Resveratrol has been suspected by many to be the protective factor in red wine responsible for the "French Paradox," a theory about how the French can eat such a high-fat diet and not suffer from heart disease. Any benefits of resveratrol had been attributed to its antioxidant capabilities. Sinclair has now demonstrated that it stimulates an enzyme in yeast that increases the organism's lifespan by 70 percent. (*PloS Biol 04;2(1):E12*)

This enzyme belongs to the same family of proteins that regulates lifespan in worms and cell survival in humans. When he tested it on human cells, it proved to be a potent activator of the human cell-survival enzyme. This same human enzyme is known to increase longevity when activated through restricting caloric intake.

I realize that all this may sound a little confusing, but the bottom line is that several researchers have just proven that in various organisms and animals with the same systems as humans, *longevity can be safely regulated through the insulin/IGF-1 pathway*. Other researchers have found that the insulin/IGF-1 pathway can be modulated by lowering insulin production and taking resveratrol.

Based on all this research, there are at least six pharmaceutical companies trying to develop drugs to modify this insulin/IGF-1 pathway. Several are concentrating their efforts on isolating and purifying compounds similar to resveratrol. Right now the information and research is being kept pretty much under wraps. There's a fortune to be made by the first company that brings a true anti-aging drug to the market. I suspect that within 10 years

HEALTH HINTS FROM READERS

Keep Your Cool This Summer

It looks like it's going to be another very hot summer here in the South. And every summer we hear a lot of tips on how to stay cool, keep our fluid intake up, and avoid heat exhaustion. There's one tip I remember from my childhood days that no one ever seems to mention. I still use it when working in the yard or garden and thought others might find it helpful too.

When you begin to feel drained from the heat, you can cool off quickly by running cold tap water over the inside of your wrists. The blood vessels run near the surface there and the cooling effect from the water will quickly restore your energy level.

Tom T., Mobile, Alabama

Amish Skin Solution

I just wanted to thank you for recommending the tree-pitch products. They are great for treating all kinds of scrapes, cuts, and wounds. With three young kids of our own this stuff has really come in handy.

I wanted to pass along another product that we use all the time with great results. It's chickweed salve. I've seen several different brands for sale, but my favorite is the Amish-made one from Indiana. It's kind of expensive, but their 4-ounce tin seems to last for years.

It's called Chickweed Healing Salve and costs $19.95, which includes shipping and handling, from CHS Laboratory, 202 Rosenburger Road, Ste. 103, Madison, Indiana 47250. Their phone number is 866-244-2593. [Publisher's note: *Alternatives* subscribers can get a $5 discount on an order of one or two tins. Call or write them and mention this offer.]

We mainly use this stuff for insect bites. It works great for bites from mosquitoes, fire ants, chiggers, ticks, and for stings from bees and wasps.

I've heard it is also good for psoriasis and skin rashes, but we haven't had to use it for that yet.

Keep up the good work.

Connie W., Houston, Texas

we'll see such a product on the market. (Keep in mind that it will take three or four years just to complete mouse studies, which, by the way, have begun at the National Institute on Aging. Human studies will have to follow that and, if the past is any indication of the future, there will be other hurdles to overcome.)

I urge you not to wait. You have the tools and knowledge to lower your insulin production. You should be eliminating sugars and refined carbohydrates anyway to prevent diabetes, heart disease, cancer, and other problems. And resveratrol is available as a supplement now.

I don't expect these measures to increase your lifespan six-fold like it did in worms, or even 26 percent as in mice. Since most of the researchers mentioned earlier are now involved with pharmaceutical companies working on anti-aging pills, they seem to be hesitant to discuss just what benefits you might expect from taking resveratrol and eating a low-glycemic diet. In my private conversations, however, most of those I spoke with felt *it wouldn't be unreasonable for someone who started the supplement and diet at age 50 to expect to add at least an extra 10 healthy years to their lifespan*. As I mentioned early on, longevity is related to many other factors, but adding 10 years of life would be phenomenal to say the least.

The beauty of implementing this program is that there are no side effects. In the unlikely event that you don't add 5, 10, or 15 years to your life, the already-proven benefits of resveratrol could prevent dozens of health problems.

Resveratrol helps fight heart disease through its strong antioxidant activity, by increasing nitric oxide to relax blood vessels, and by reducing abnormal blood clotting and blockages. (*Int J Mol Med 03;11:317-20*)

Initial research indicates that resveratrol may be effective against the development of amyloid deposits associated with Alzheimer's disease. (*Free Radic Biol Med 03;34:1100-10*) (*Neuroreport 97;8:1499-502*) And David Sinclair, the Harvard researcher, hopes to publish data supporting the use of pharmaceutical, synthetic molecules derived from resveratrol in the treatment of Alzheimer's later this year.

Resveratrol has shown it can inhibit both the development and growth of cancer cells, as well as kill existing cancer cells. (*Carcinogenesis 01;22:1111-17*) (*Curr Med Chem-Anti-Cancer Agents 03;3:77-93*) (*Pancreas 02;25:e71-e76*)

Resveratrol is often particularly effective in helping to maintain normal estrogen activity. As a phytoestrogen it can help control hot flashes, mood fluctuations, bone loss, and other meno-

pausal symptoms. It appears to also be useful in blocking the onset and progression of estrogen-related cancers such as breast and prostate cancers. It has also been shown to block the ability of cancer cells to metastasize to bone, particularly in pancreas, kidney, and breast cancers. (*Int J Oncol 99;15:955059*)

Resveratrol can also be protective against skin cancer, stomach cancer, liver disease, inflammation, and even pain. (*Neoplasia 03;5:74-82*) (*Am J Gastroenterol 03;98:1440-1*)(*Life Sci 02;70:1669-76*)

Probably the most well-known sources of resveratrol are red wine and grape juice. Other sources include Japanese knotweed (*Polygonum cuspidatum)*, pine trees, eucalyptus, and peanuts. Resveratrol has only become commercially available as a supplement in the last few years, after it was linked to the French Paradox. Prior to that plants containing it had been used in Oriental medicine for heart and liver problems.

Resveratrol is a member of a group of compounds called phytoalexins. Plants produce resveratrol and other phytoalexins as a protective measure during times of stress, bad weather, or poor nutrient availability, or as protection against fungal and other plant diseases. Harsher climates and environmental conditions trigger the increased production of the compound. It is present in the skins of grapes and in higher concentrations in those wines grown in cooler climates. (White wines don't contain much resveratrol, since the grape skins are removed early in production.)

Based on the current research, around 20 mg a day provides the maximum health benefits for resveratrol. Red wine averages around 0.2 mg of resveratrol per ounce, about double the amount found in peanuts, so a glass or two in the evening will help, but you'll have to take a supplement to get the effects discussed here. (After reviewing her findings, even Cynthia Kenyon now includes a daily glass of red wine in her low-glycemic diet.)

Tick Tock, Tick Tock

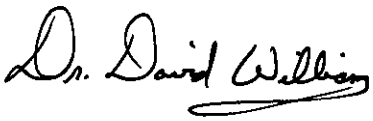
Unfortunately there aren't that many supplements on the market at this time, the quality varies considerably, and the best supplements are still fairly expensive. Because of this, I've been working with a company in Australia for some time on a resveratrol formulation, but it isn't ready yet. (Australia has become one of the largest producers of red wine in the world.)

Until that product becomes available, I recommend one or two capsules a day with meals of a product called Resvert (25 mg resveratrol plus 100 mg of proanthocyanidins) from Young Again Nutrients. They can be reached on the Web at *www.youngagain.com*, by phone at 877-205-0040, or at The Woodlands Center, P.O. Box 8234, Spring, TX 77387. Ask for coupon code YAN002 to receive a ten-percent discount on your order.

(There have been no toxicity problems with resveratrol at 20 mg/day or even higher doses. I haven't known anyone to have problems taking the supplement but, if you're on blood thinners such as Coumadin [warfarin] or have a blood platelet deficiency or blood clotting problems, it would be best to discuss resveratrol use with your doctor and have him or her monitor the situation.)

Up until now, caloric restriction was the only proven method of extending lifespan. Fortunately there's a better way. This latest research adds more and more support to the idea that by following the above recommendations we can trigger the exact same aging-reduction mechanisms as in caloric restriction. In five or ten years this will be considered a breakthrough. During that time before the rest of the world finds out, you may have already added a year or two to your life. The clock is ticking. Why not slow it down a little?

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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