REVEALED

8 foods that can actually help cure diabetes and heart disease

What I'm about to tell you will seem radical to the mainstream government-medical-industrial complex. But for those of us who have been paying attention to the recent science, it's obvious.

For decades, we were told that these diseases were a one-way street—that once you're diagnosed with type 2 diabetes or heart disease, that's it. There's no going back. There's no cure.

But in recent years, there's growing evidence that this fallacy is simply not true. Study after study is showing how, with proper diet, nutrition, and dietary supplementation, the body can actually *reverse* heart disease and diabetes.

And, of course, when you reverse a chronic condition like diabetes... or heart disease (or Alzheimer's, as I discuss in my *Complete Alzheimer's Cure* online learning protocol) then we can call that a cure.

How you can help your body rejuvenate itself

Sadly, many doctors still believe this type of cure is impossible—because they rely on looking at tissues under a microscope for "end-stage" disease.

But the body is a living, dynamic organism, carrying on metabolic activities in every cell at every moment. And it's replacing its old,

tired cells with "new models" on a periodic basis.

And a balanced diet and proper nutrition (from food and, in many cases, nutritional supplements) is critical for that process.

Of course, if you've been reading *Insiders' Cures* for a while, this comes as no surprise to you. But mainstream medicine insists on over-complicating the picture, focusing on single-ingredient drugs to address disease symptoms without reversing or curing the underlying conditions. They simply don't seem to understand that this approach is in fact a dead end, and will virtually *ensure* that your condition <u>remains</u> "end-stage."

Major new study shows strong links between diet and diabetes and heart disease

Maybe a new study of more than 700,000 people, published in the prestigious *Journal of the American Medical Association*, will change these deluded doctors' minds (although I'm not holding my breath in anticipation).¹

Why is this study so important? Well, it all has to do with mortality.

When it comes to medical research, there are lots of statistical observations and manipulations regarding clinical goals and

assessments, as well as "intermediate endpoints" and the ability of various treatments to affect them.

However, as I have said before, there is nothing more clear and concrete than mortality—and the ability to prevent demise from chronic diseases. When a factor or treatment reduces death rates, it is showing the ability to prevent and reverse that condition.

That's just what the new *JAMA* study does. It provides definitive medical evidence for what has long been obvious—about *half* of all deaths from diabetes, heart disease, and stroke are linked to diet and nutrition.

Diet should be more about do's than don'ts

The study authors noted that "insufficient healthier foods/nutrients remained *at least as substantial* as those related to excess unhealthful foods/nutrients."

In this issue:

How to get some fresh air this summer—and avoid being overwhelmed by pollution 5

 Marc S. Micozzi, M.D., Ph.D., is a worldwide leader in nutritional and complementary/alternative medicine. He has had a distinguished career as a researcher and physician executive at the National Institutes of Health and Walter Reed National Military Medical Center in Washington, DC, and the College of Physicians in Philadelphia PA. He has published over 30 medical and trade books, and founded and edited the first scientific journal, and the first textbook, on complementary/ alternative and nutritional medicine, now going into a 6th edition (2018) and continuously in print since 1995.

Dr. Micozzi's *Insiders'* Cures is published monthly by OmniVista Health Media, L.L.C., 100 W. Monument St., Baltimore, MD 21201 for \$74 per year (\$6.16 an issue).

POSTMASTER: Send address changes to Insiders' Cures, 100 W. Monument St. Baltimore, MD 21201.

Author: Marc S. Micozzi, M.D., Ph.D. Publisher: Katherine Wheeler Executive Editor: Amanda Angelini

All material in this publication is provided for information only and may not be construed as medical advice or instruction. No action should be taken based solely on the contents of this publication; readers should consult appropriate health professionals on any matter relating to their health and wellbeing. The information provided in this publication is believed to be accurate and sound, based on the best judgment available to the authors, but readers who fail to consult with appropriate health authorities assume the risk of any injuries. The opinions expressed here do not necessarily reflect the views of the publisher. The publisher is not responsible for errors or omissions.

For questions regarding your subscription, please contact reader services at www.drmicozzi.com.

Copyright © 2017 OmniVista Health Media, L.L.C., 100 W. Monument St., Baltimore, MD 21201. Reproduction in whole or in part is prohibited without written permission of the publisher.

In other words: It is just as important to include the right foods as it is to simply avoid or eliminate the wrong foods—if not more so.

This finding brings home several points, starting with the importance of a balanced diet.

But that doesn't mean you need to run screaming from every "unhealthful" speck of food that may appear on your plate. Your body is equipped to handle some unhealthy foods, as long as you consume adequate amounts of healthy nutrients as well.

Having a frantic attitude about whether a food is "good for you" can create anxiety, fear, and loathing when it comes to eating—which is one of the most normal and necessary behaviors that all of us can and should enjoy.

And what is "unhealthy" food anyway? The mainstream government-industrial-medical complex certainly can't seem to get that definition right. For decades, all of their long-term dietary recommendations have been shown to be completely wrong, mostly wrong, or partly wrong.

So while they continue to dither about what foods to avoid, you and I should instead focus on what we have known all along: We need food that provides optimal levels of vitamins, minerals, and other nutrients for good health.

And when it comes to diabetes and heart disease prevention—or reversal—we particularly need more B, C, D, and E vitamins; magnesium; selenium; and omega-3 fatty acids.

Of course, today, thanks to a number of factors, it can be difficult to get optimal levels of all these nutrients from food alone—which is where nutritional supplements come in. But it can be difficult to know where to start.

That's why I've started developing two new, in-depth protocols that can not only help prevent heart disease and diabetes, but may even reverse these so-called "chronic" conditions in many cases.

And a significant portion of my new diabetes protocol in particular will be based on the latest scientific evidence regarding diet. I'm still in the early stages of gathering all of the research for these new protocols, but will continue to keep you posted on my progress. And you will be the first to know when they're ready.

In the meantime, I can give you a sneak preview of some of the specific foods you should be eating on a regular basis to keep your heart and your blood sugar healthy.

My top 8 cardio-metabolic disease-fighting foods

Hopefully you're already eating many—if not all—of these foods on a regular basis. But there are a few surprise foods that I've discovered during my extensive research into diabetes and heart disease cures.

So let's dive in, starting with...

Seafood. The *JAMA* study recommends that everyone get 250 mg of omega-3 fatty acids daily from fatty fish like salmon, mackerel, tuna, herring, sardines, and trout, and seafood like oysters, mussels, clams, crab, and lobster.

So how much fish does that mean you need to eat? I like to consult Seafood Health Facts, a handy guide developed by the nonprofit Community Seafood Initiative along with Oregon State, Cornell, Delaware, Rhode Island, Florida, and

California universities, for omega-3 counts in specific types of seafood.²

But a good rule of thumb is two servings of wild—not farmed—seafood a week.

Along with the omega-3s you get from eating seafood, you'll also be getting vitamins A, B, and D. Not to mention a whole host of minerals, including selenium, magnesium, phosphorous, potassium, zinc, copper, and iodine.

Meat. Mainstream medicine doesn't like to admit it, but both seafood <u>and</u> meat are sources of most of the same complete proteins and bioavailable vitamins and minerals.

As I first pointed out to National Institutes of Health researchers back in the mid-1980s, seafood was a more "natural" source of nutrients, compared to most meat, in light of the artificial circumstances for producing meat products. In other words, meat is farmed, and frequently processed, and seafood was not. But since that time, we have seen the advent of farmed and processed seafood as well, which severely diminishes its nutrient content.

The JAMA researchers still seem to be stuck in the past when it comes to the health value of meat, however. They claim that eating unprocessed meat led to 0.4% more deaths from cardio-metabolic diseases. While I doubt that their data even allows that level of precision with any meaning, they should probably have rounded it off to zero effect. But the politically correct war against meat must continue regardless of the data, or lack of it.

I recommend 3 to 4 servings of organic, grass-fed meat per week to boost your levels of omega-3s, vitamins B and E, and calcium, magnesium, and potassium.

Fruit. The *JAMA* study results dismantled the myth that people with diabetes and heart disease need to reduce fruit consumption because of the natural fructose, or fruit sugar.

As I discussed at length in the May *Insiders' Cures* article "The metabolic poison hiding in plain sight," there is a world of difference between fructose and sucrose (table sugar). And the *JAMA* study backs me up. Its recommended daily fruit consumption (300 grams per day—about 2 cups) is nearly as high as for vegetables (400 mg a day).

Bottom line: Fruits are nutrition powerhouses, rich in vitamins, minerals, phytonutrients, and fiber—which makes them essential for preventing or curing diabetes and heart disease...not to mention virtually every other health condition.

My recommendation has always been to eat plenty of *both* fruits *and* vegetables. Don't undermine this optimal goal by worrying about having "too much" fruit. Just eat whole fruits and berries, and not juices.

Avocados. Along with other fruits, avocados are particularly powerful in the fight against cardio-metabolic diseases.

You may be surprised by this recommendation. After all, because they contain natural fats and oils, and are higher in calories than other "greens," avocados had long been regarded with suspicion by mainstream nutrition "experts."

But recent research is showing the remarkable metabolic benefits of this food. In fact, a new study reports that the nutrients in avocados can help prevent high blood pressure, diabetes, obesity, blood clots, and heart disease.³

Avocados are a good source of carotenoids; fatty acids; vitamins A, B, C, E, and K1; and the minerals calcium, magnesium, phosphorus, potassium, sodium, zinc, copper, manganese, and selenium. They're also high in betaine, which, as I wrote in the November 2015 issue of *Insiders' Cures* ("The heart hazard throwing aging into overdrive"), helps protect against heart disease, cancer, Alzheimer's and Parkinson's. And avocados contain phytosterols and phytostanols, which are important for prostate health.

The natural wonder that helps your blood sugar reach its final destination

A new study out of Norway found that elderberry extract had positive influences on enzymes that help prevent diabetes and other metabolic conditions. And even more importantly, elderberry increased uptake of glucose (blood sugar) into skeletal muscles.

Why is this important? It's a little complicated, so I'll explain.

I often discuss the importance of not letting glucose spike in the blood (which is common when you eat sugar or simple carbs). Well, the other side of the equation is that the glucose in the blood must get into the tissues, where it is needed as fuel for every cell in your body. Sugar does no good when it simply circulates in the blood—it damages the blood vessels in the eyes, heart, kidneys, and peripheral nerves.

Muscles represent the single largest mass of tissue in the body, so measuring the uptake of blood glucose into skeletal muscle (as was done in this study) is a good way of assessing metabolic health.

Along with its benefits for blood sugar, elderberry has also been shown to boost immunity and reduce the severity and duration of colds and flu. Rather than trying to swallow capsules, I prefer elderberry extract brewed in a tea or an infusion with fresh lemon, honey or ginger.

July **2017** 3

In other words, if you want a real daily multivitamin, try eating an avocado instead of taking those useless once-per-day pills.

I recommend you eat 2 to 3 avocados a week. Try them in guacamole with lime, tomatoes, and peppers. Or cube an avocado and add it to any fresh salad for a double dose of disease-fighting nutrients.

Vegetables. Of course, you already know that vegetables are chock full of disease-fighting nutrients. But they also contain another powerful weapon against cardio-metabolic disease: fiber.

While all vegetables (and many fruits) have some fiber, you'll get the most fiber from dark leafy greens, artichokes, carrots, beets, broccoli, and potatoes.

Why does this matter?

It all has to do with the importance of your gastrointestinal microbiome (probiotics). The GI microbiome ensures proper digestion—and nutrient distribution—of the food you eat. To keep your microbiome healthy, you need beneficial bacteria, also known as probiotics.

There is a lot of marketing hype about probiotic supplements. But the concept and the evidence for taking probiotic pills has never impressed me. Instead, I believe in foods that support your natural probiotic microbiome. These foods contain components known as "pre-biotics." Fiber is a key prebiotic. Which leads me to a new study from Finland.

The researchers found that probiotic bacteria in the GI tract produce a metabolite that helps protect against diabetes. And they discovered a strong link between dietary fiber intake and the development of this metabolite.⁴

The study looked at 200 overweight people with impaired blood-sugar metabolism. Over a 20-year period, the researchers compared the study participants who developed type 2 diabetes with the participants who didn't get the disease. They discovered that the people who developed diabetes had lower levels of the anti-diabetic, probiotic metabolite. These findings matched those of two earlier studies, including the Metabolic Syndrome in Men (METSIM) study.

But here's the caveat: You can't take the anti-diabetic metabolite, nor the probiotic bacteria that produce it. Instead, you need to "feed" your naturally occurring probiotics with *pre*biotic dietary fiber from vegetables, fruits, and legumes.

To prevent or cure diabetes and heart disease, I recommend you eat at least 400 grams of vegetables a day. That equals about 6 cups of leafy greens, or about 3 cups of other types of veggies.

Legumes. I've written before about how legumes—including beans, lentils, peas, and chickpeas (garbanzo beans)—can reduce the risk of diabetes. And I've also reported on the PREDIMED study, which was started to assess the health benefits of the Mediterranean Diet.

So I paid special attention to a new finding from the PREDIMED researchers. After analyzing 3,349 people for four years, the researchers concluded that the people who ate the most legumes had a whopping 35% lower risk of diabetes.⁵

And here's the factor that really caught my eye—these people had high risk of heart disease. Meaning they likely *already had* metabolic syndrome—a huge risk factor for diabetes. But legumes protected

them from the disease.

Higher consumption of legumes in this study was defined as about 30 grams per day, which is the equivalent of about 1 cup of cooked beans, lentils, peas, or chickpeas per week. You could eat that in just two meals!

It's true that legumes are higher in carbohydrates and calories than vegetables. But they also contain more protein. And when you swap them out for a carb-heavy side dish like rice, they pack a lot of nutritional—and disease-fighting—punch.

Nuts and seeds. Like avocados, nuts have traditionally gotten a bad rap because they can be high in calories and fats. But ounce for ounce, few foods contain as many essential nutrients—especially the ones that are critical in the fight against heart disease and diabetes.

Seeds like pumpkin, sesame, chia, and flax, along with most nuts, are high in vitamin E and omega-3s. In fact, nuts and seeds have the most potent combination of essential fatty acids and vitamin E of *any* food. This is key because these two nutrients work synergistically. The oils help the body absorb vitamin E from foods. In turn, vitamin E helps the essential fatty acids do their job in the cell membranes.

Almonds, cashews, and Brazil nuts are rich in magnesium, which helps fight both diabetes and heart disease. And in a September 2014 *Daily Dispatch* ("Keep these four kinds of foods in your kitchen"), I wrote about research showing that tree nuts (almonds, Brazil nuts, cashews, hazlenuts, macadamias, peanuts, pecans, pistachios, pine nuts or walnuts) improve heart health in people with diabetes.

And the best part is you don't need a lot of nuts or seeds to stay healthy—just a handful (about 1/8 of a cup) a day.

An easy way to eat a balanced diet

So that's it—8 foods that can actually help *cure* diabetes and heart disease. And they couldn't be simpler to work into your daily diet.

For instance, you could start your day with an egg (you should always have some protein for breakfast) and a handful of berries.

For lunch, load up a leafy-green salad with fiber-rich broccoli, carrots, and beets, add a few avocado cubes or slices, some garbanzo beans, and a handful of sliced almonds and pumpkin seeds, and drizzle it with a homemade olive oil-and-vinegar or olive oil-and-lemon salad dressing.

For dinner, what could be tastier than a grilled salmon filet or a

black pepper and herb-crusted steak accompanied by steamed vegetables (maybe with some garlic, curry powder, or other spices for extra flavor) and a bowl of fresh fruit and berries for dessert?

Add plenty of water (preferably mineral) and a glass or two of hearthealthy wine—and avoid sugarsweetened, or artificially sweetened, beverages (soft drinks and so-called sports and hydration beverages), which are *never* good for your health.

Combine this healthy, balanced diet with moderate daily exercise, stress reduction techniques, and smart dietary supplementation and you've discovered what continues to flummox mainstream medicine—an actual *cure* for diabetes, heart disease, and other so-called "chronic" cardiometabolic disorders.

Of course, that may seem easier said than done. But it doesn't have to be. In fact, I'll outline the

specific, step-by-step instructions for preventing—and even reversing heart disease and diabetes—in my two new, upcoming online learning protocols. I'm hard at work on them right now, as I write this newsletter, and will be sure to let you know when they're ready. So stay tuned for more information!

How much do you really need to eat?

Nuts/seeds: About 1/8 cup per day

Seafood: Two 3-ounce servings per week of wild-caught fish or seafood

Meat: 3 to 4 servings of organic, grassfed meat per week

Vegetables: 6 cups of leafy greens a day, or 3 cups of other cooked or raw vegetables

Fruit: 2 cups per day

Legumes: 1 cup, cooked, per week; or 2 half-cups twice per week

Avocados: 2 to 3 per week, cubed or sliced in salads, or salsas

How to get some fresh air this summer—and avoid being overwhelmed by pollution

A century ago, people with tuberculosis or other lung diseases were advised to go on an airy mountain retreat, where they could get plenty of fresh air and sunshine.

Naturopaths called it the nature cure. And these fresh "air baths" and "sun baths," (not to mention actual fresh water baths) were credited with healing as many as half of all people with lung diseases.

But of course, modern medicine wanted to treat the other half—and developed antibiotics for the purpose...while leaving behind the

natural healing methods. (Sound familiar?) Fortunately, there's some good news. A trio of recent studies may breathe some new life into freshair nature cures.

The first study shows how you can actually thrive outside in today's toxic world. Researchers discovered that just a few B vitamins a day can protect you from the health problems caused by air pollution.

And a pair of studies shows that getting outside in the mountains—or just away from urban light pollution—for as little as a couple

nights can improve your sleep for weeks afterward.

I'll tell you more about those studies in a moment, but first, let's look at how humans have evolved to breathe fresh—and not-so-fresh—air.

How the nature cure became polluted

I am old enough to remember when everyone still recommended going out and getting some fresh air when you weren't feeling well.

The theory was if you were living inside a poorly ventilated house

July 2017 5

or dwelling, oxygen levels would decrease and carbon dioxide, as well as other unhealthy gases and chemicals, would increase. Going outside would provide a respite from indoor air pollution.

But now, there's pollution both indoors and outdoors. So even if you're fortunate enough to have a doctor who hasn't been seduced by big pharma and still believes in the nature cure, the outside air you breathe will likely be more fetid than fresh

100 million years of oxygen evolution

Of course, humans and our need for oxygen are a relatively new occurrence on Earth. Millions of years ago, our atmosphere used to have much more carbon dioxide, which supported earth's abundant plant life.

Plants convert carbon dioxide to oxygen through photosynthesis. In fact, some scientists think it took 100 million years for plants to make enough oxygen in the atmosphere to support the emergence of animal life from the oceans to the land 300 million years ago.

Plants were *the* terrestrial environment when animal life first emerged onto the planet's dry land—so it is no wonder (or perhaps the greatest wonder of all) that plants provide the foundation of all foods and natural medicines.

One hundred million years of carbonbased plant life went back into the earth, decayed and was compressed over millions of more years into fossil fuels. But for the past two centuries we have also released gases that result from the combustion products of these fossil fuels, contributing to pollution in urban and suburban environments.

What your doctor won't tell you about your lungs and smoke

The worst urban air pollution has been linked to the equivalent of smoking one pack of cigarettes a day. Indeed, smoking is always the mainstream's public enemy No. 1 when it comes to lung health.

But the fact is, we are not completely defenseless against smoke from cigarettes or other sources. Humans have been exposed to smoke for a million years or so since the "invention" of fire—living in caves and other closed dwellings around open fires. That's given our lungs time to develop many enzyme systems that detoxify smoke.

These enzymes include alpha-1 antitrypsin, which I researched in the mid-1970s as a young student investigator on a summer scholarship at City of Hope National Medical Center in California (where they know something about air pollution).

Once upon a time, there was real research taking place about why some people are susceptible to lung diseases that are associated with smoke inhalation, while others are not.

But years ago all that came to a screeching halt when the new behavioral-science bureaucrats at the National Cancer Institute made a politically correct decision to funnel virtually all lung research funding into smoking cessation and prevention.

They ignored individual susceptibility (like the fact that the smokedetoxifying enzymes I mentioned above vary from person to person) and just dumped everyone into the same politically correct, behavioral-control basket. And smokers became the first "basket of deplorables."

Today that stupid and biased political decision has left two-thirds of victims

diagnosed with lung cancer with no options, because the government has nothing else to offer.

But fortunately, there are steps you can take yourself to boost your own natural defenses. Which leads me to the vitamin B study I mentioned earlier

The simple, safe, penniesper-day way to protect yourself against air pollution

All of our cells use vitamins and minerals to protect themselves, carry out metabolic reactions, and detoxify chemical substances. But with our depleted foods, diets, lifestyles, and environment, as well as faulty medical advice, it's no wonder that most people have insufficient levels of the vitamins, minerals, and other nutrients needed for optimal cellular health.

That's why I was so interested in a new study that claims to be the first to research nutritional interventions people can use to minimize or prevent the adverse effects of air pollution.¹

Year after year, decade after decade, the government has spent billions of our dollars on studies about air pollution prevention. This research has spawned entire government-subsidized industries; resulted in reams of printed, tree-killing regulations; and crippled and killed other backbone American industries—costing consumers more hard-earned dollars.

And yet, according to this new clinical trial, everyone can protect themselves from air pollution *for just pennies per day!*

All you need is a high-quality vitamin B complex.

B vitamins can fight pollution at the cellular level

The study involved 10 healthy adults who were either given a placebo or

a supplement containing 2.5 mg of folic acid (vitamin B9), 50 mg of B6, and 1 mg of B12. The researchers took blood samples from all of the participants, and then exposed them to ambient air pollution.

Blood tests taken after the exposure showed that the pollution affected the participants' cellular metabolism—including the all-important mitochondrial respiration of oxygen that creates energy and hydration for the cells.

But here's the really exciting finding. Blood tests from the vitamin B group showed that the supplements actually <u>prevented</u> air pollution from causing these disruptions to cellular metabolism

Of course, this study looked at just a fraction of the B vitamins. Imagine what you can accomplish with a complete B complex—and all of the other vitamins and minerals that are often missing from our diets.

Encouraging each person to spend pennies per day on nutrients looks like an important part of the answer to air pollution. But the mainstream crony-capitalist government-industrial complex doesn't like dietary supplements (except calcium and iron—which I've told you many times to avoid).

Instead, big government prefers to spend billions of dollars on mostly useless research on air pollution, and promoting federal and state regulations that cost the economy trillions more. Not to mention the "global" air-quality agreements that nobody really has to follow except Americans. Something is very polluted alright, and it isn't just urban air.

The other type of pollution to avoid

Another great thing about dietary supplements is that you can take a day's or a week's supply with you wherever you go. Like camping in the mountains.

In fact, the pair of studies I referred to earlier found that spending the night in the mountains—or even in your backyard—can restore restful sleep.

The first study sent volunteers into the Cache la Poudre Wilderness area in Colorado's majestic Rocky Mountains for one week without flashlights.² Not only is the mile-high air free of most air pollutants, but it's also free of artificial light pollution. Only the planets, stars, and Milky Way galaxy are visible and bright in the night sky.

Researchers measured the volunteers' melatonin, the hormone that prepares the body for sleep. They found that the

campers' melatonin levels increased almost two hours earlier at the end of the day, and decreased again two hours earlier at the end of night.

The conclusion? Camping away from artificial light pollution reset the study participants' biological clock to a more normal sleep cycle.

The researchers then conducted a second study to see if melatonin levels would reset over a shorter time period. This time, volunteers spent a weekend in another mountain wilderness area. Their biological clocks shifted 69 percent compared to the week-long campers—leading the researchers to conclude that even a couple days away from light pollution can have a significant impact on sleep.³

Of course, not every insomniac can go camping in the mountains. The researchers suggest increasing your natural light exposure during the day—maybe by taking a long walk or even sitting near a sunny window. And then, decrease your evening light exposure by dimming the lights and turning off electrical devices an hour or two before bedtime.

But if you do go camping this summer, you'll probably want to enjoy sitting around a campfire. So make sure to pack your B vitamins to help your body safely handle all that smoke.

Protect your brain from "type 3 diabetes" at any age

You know how dangerous high blood sugar can be for your brain, as well as your body. In fact, I suggested several years ago that dementia might be considered "type 3 diabetes."

So while it is important to support and protect your cognitive function

at all times, it is particularly critical if you are struggling with high blood sugar or type 2 diabetes.

Here's a look at new research showing how some surprising nutrients can help boost your brain health...especially as you age.

Lutein and zeaxanthin not just for eye heath

Many studies show the carotenoids lutein and zeaxanthin are effective for macular degeneration and other eye issues—including those caused by diabetes.

July 2017

And now, researchers have discovered that these versatile carotenoids can support better cognitive function as well. Although it's a wonder that this research even occurred at all.

Back in the 1980s, the National Cancer Institute science bureaucrats I had to work with were focused on just one carotenoid: beta-carotene. Fortunately, I helped convince them to fund some real research with some real nutritional scientists at the USDA Human Nutrition Research Lab.

Working with this new team, I discovered that the carotenoids of real importance for human nutrition were ones that the NCI had never heard of—including lutein, lycopene, and zeaxanthin. But the NCI would not allow me to publish these blockbuster findings on carotenoids. I finally got them published when I went to work at Walter Reed Army Medical Center—where they awarded me the Young Scientific Investigator prize for my work on carotenoids.

Lutein, zeaxanthin, and lycopene have gone on to show numerous health benefits in scientific studies (and spawned entire new natural products industries—whether they pay attention to the science or not. In fact, trying to find good-quality, science-based supplements from the natural products industry is a crapshoot. That's why I created my own Smart Science Nutritionals supplement line). Which leads me to the latest research on lutein and zeaxanthin's effects on brain health.

Studies have found that lutein makes up 60% of the carotenoids that pass through the blood-brain barrier. But lutein comprises only about 12% of dietary carotenoids. In other words, your brain needs lots of lutein, but chances are you aren't getting enough of it.

Not getting enough lutein may also be a big problem for normal cognitive development during childhood. And studies in middleaged and elderly adults also support the importance of lutein for cognitive function.

In one new study, Irish researchers analyzed data from 4,076 adults age 50 or older. They discovered that higher levels of lutein and zeaxanthin in the blood were associated with better scores on tests of cognitive function, memory, and executive function.¹

The researchers cited the antioxidant and anti-inflammatory activities of these carotenoids for these benefits.

Another new study showed that lutein and zeaxanthin may reduce stress—which, as you know, is a major factor in chronic diseases of the body and brain...including dementia and Alzheimer's.

Observations from the LAMA Trial (Lutein Vision and Mental Acuity) indicated that six months of supplementation with these two carotenoids led to improvements in cortisol (a stress hormone), as well as measures of emotional and physical health.² (I published a paper with Dr. Ken Seaton in 1999 proposing that cortisol is the stress *and* aging hormone.)

Researchers recruited 59 healthy, young adults to participate in the trial. They discovered that reductions in cortisol lasted for as long as a year, at doses of 2 mg of zeaxanthin/10 mg of lutein, as well as 4 mg of zeaxanthin/20 mg of lutein.

Exercise and beetroot juice can make your brain younger

Another new study that intrigued me looked at the effects of exercise and beetroot juice on the aging brain.³

Amazingly, the researchers discovered that the beetroot-exercise combo helped the older adults' brains not only perform more efficiently, but actually mirror the operations of a younger brain.

Exercise has been observed to have a positive effect on older people's brains, most likely by stimulating blood circulation.

Beetroot juice has also been found to increase blood flow to the brain. And since beetroot juice has been shown to enhance exercise performance, researchers proposed that drinking beetroot juice and then exercising may be hard to beat when it comes to beating dementia.

Researchers gathered 26 participants with an average age of 65, and divided them into two groups. Both groups did a moderately intense, 50-minute walk on a treadmill three times a week for six weeks. One group drank beetroot juice an hour before they exercised, while the other group drank a placebo.

The researchers discovered that the participants who exercised and consumed beetroot juice showed greater function within the motor regions of their brains. They also had brain networks that more closely resembled those of younger adults.

As I've pointed out before, when it comes to maintaining your health, exercise alone will not get you there. You can't outrun a deficient diet. But eating the right foods (including beets) and taking the right nutrients along with exercise will create positive results and keep you from feeling like you are just running on a treadmill to nowhere.

Citations for all articles available online at www.DrMicozzi.com