

DR. MICHAEL MURRAY'S

NATURAL LIVING NEWS

EXPERT ADVICE FOR EVERYDAY LIVING

September/October 2014

ARTICHOKE

THE **HEART** OF **HEALTH**

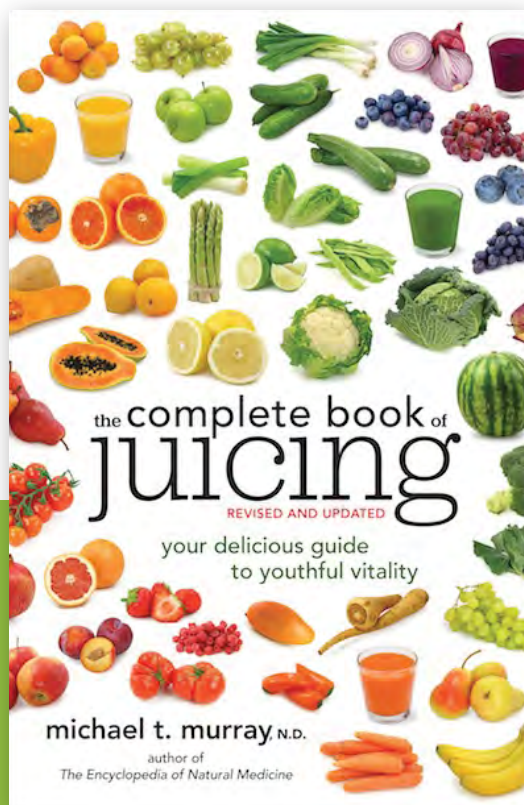
5 **WAYS** to
FEED YOUR
FRIENDSHIPS

ESSENTIAL
COLD AND FLU
PROTECTION
PLAN



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SEVEN TIPS TO IMPROVE YOUR MEMORY

This issue's Q&A column introduces a major new natural product in the battle against aging and memory loss: PQQ. I thought this would be a good opportunity to review some other natural and gratifying ways to keep your brain as strong and agile as possible.

- 1. GET A GOOD NIGHT'S SLEEP.** Poor sleep quality is a major cause of poor mental function. Several natural products have been shown to enhance the deeper levels of sleep that power your brain's battery.
- 2. EAT TO CONTROL BLOOD SUGAR LEVELS.** The brain is critically dependent on a constant and steady supply of blood sugar (glucose). When people are on the blood sugar rollercoaster it is difficult to stay focused and be able to concentrate.
- 3. STAY MENTALLY ACTIVE.** Just as physical activity helps keep your body in shape, you need to exercise your brain to keep it in shape. Do crossword puzzles, learn a language or to play a musical instrument, and challenge yourself mentally.
- 4. SOCIALIZE REGULARLY.** Social interaction not only helps ward off depression and stress, both of which can contribute to memory loss, but it also helps us stay quick-witted and mentally nimble. Look for opportunities to get together with people you enjoy.
- 5. TAKE FISH OILS.** Fish oil supplements can help improve brain function as well as ward off Alzheimer's disease. Take 1,000 to 3,000 mg of EPA+DHA daily.
- 6. EAT BLUEBERRIES.** Blueberries and other berries are rich in plant pigments known as anthocyanidins and have been shown to improve mental function, as well as visual function (especially improving nighttime vision).
- 7. BE PHYSICALLY ACTIVE.** Physical activity increases blood flow to your whole body, including your brain. A great deal of research indicates that people who are more physically active benefit by having more mental as well as physical energy.

In good health,

—Dr. Michael T. Murray
www.DoctorMurray.com

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DR. MICHAEL MURRAY'S

NATURAL LIVING NEWS

SEPTEMBER/OCTOBER 2014

CONTENTS

NATURAL FACTS

GOODBYE, LOW-BACK PAIN.....	6
MELATONIN FOR STRONG BONES...	8
SUPER STRAWBERRIES.....	10
MORE REASONS TO EXERCISE.....	12

FEATURED CONDITION

COLD AND FLU.....	14
-------------------	----

HEALING FOODS

ARTICHOKES.....	18
-----------------	----

INSPIRED LIVING

THE VALUE OF FRIENDS.....	22
---------------------------	----

NUTRIENT PROFILE

PREVENTING IRON DEFICIENCY.....	28
---------------------------------	----

ASK DR. MURRAY.....	34
---------------------	----

CONDITION

GOODBYE, LOW-BACK PAIN

If you are one of the roughly 25 percent of North Americans to suffer from low-back pain, you may be tempted to try prescription medications like oxycodone or other opioids to deal with the pain. Unfortunately, these drugs are highly addictive and have not been shown to be effective or safe—despite their popularity.

Here's some good news for back pain sufferers: A study published in the March 2013 issue of *Anaesthesia* shows that magnesium can be extremely effective for low-back pain. The study highlights the importance of seeking a more natural approach in this condition.

The study looked at 80 patients with chronic low-back pain. The participants who received magnesium (1 g per day for two weeks, followed by 500 mg per

day for four weeks) reported much better results than those taking placebo. While all participants experienced less pain after the study, those results only lasted in the people who took magnesium—even at the 6-month follow-up.

Likewise, all patients had a significant improvement in lumbar spine range of motion at the 2-week time point, although only the magnesium group improved throughout the 6-month follow-up period.

These results show quite clearly that magnesium supplementation can reduce pain intensity and improve lumbar spine mobility during a 6-month period in patients with chronic low-back pain who had been unresponsive to conventional care.



STATINS UP DIABETES RISK

If you're thinking of taking statins to reduce your cholesterol, think again. These drugs, which have already been found to have a number of health risks—including liver problems and muscle and nerve damage—are also being found to increase the risk of diabetes.

A May 2013 paper published in *British Medical Journal* found that various statin drugs were associated with increased risk of diabetes. For people taking Lipitor, risk of developing diabetes was 22 percent higher; with Crestor there was an 18 percent increased risk; with Zocor the risk was 10 percent increased—all compared to those taking pravastatin.

This isn't the first study to link statins to diabetes risk. A 2012 study by the Mayo Clinic found that the use of statins in postmenopausal women increased the risk for type 2 diabetes by a staggering 71 percent! For all these reasons, it's important to consider safe and natural approaches to cholesterol management—such as diet, exercise, and effective supplements.

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NUTRIENTS

MELATONIN
STRENGTHENS AGING BONES

Melatonin, a hormone best known for its role in regulating the circadian rhythm, as well as controlling sleep/wake cycles, may also help us age better, according to new research.

Unfortunately, melatonin levels decline as we get older. In fact, many older adults do not secrete much melatonin at all. As a result, there is a lot of scientific research focusing on some of the anti-aging effects of melatonin supplementation.

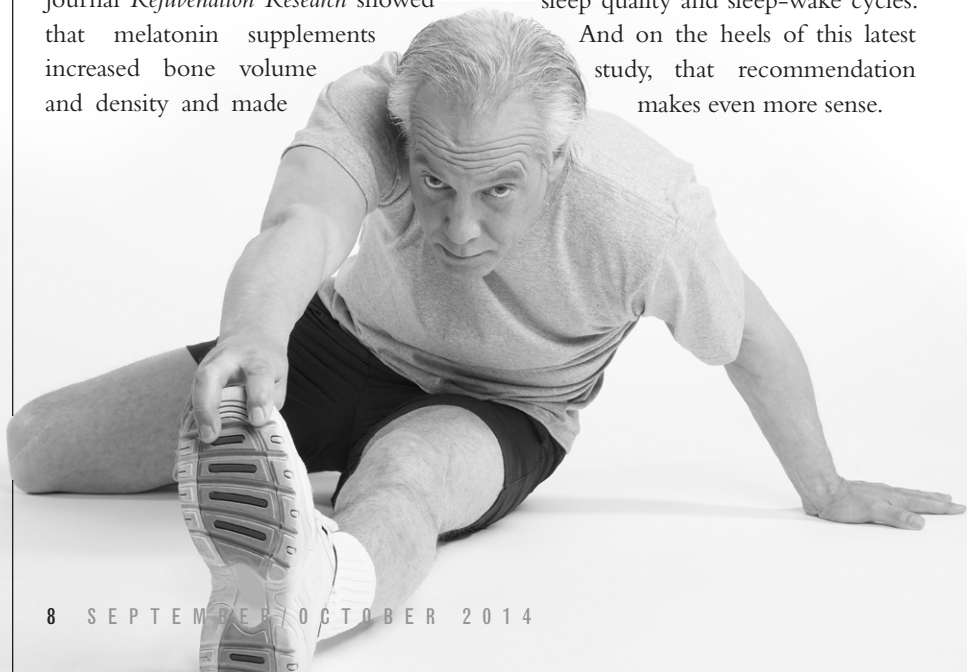
Previous studies have pointed to melatonin's antioxidant and longevity-promoting effects. But an animal study soon to be published in the journal *Rejuvenation Research* showed that melatonin supplements increased bone volume and density and made

bones more resistant to fracture. The findings suggest melatonin may be a useful tool in combating osteoporosis.

One of the underlying causes of low melatonin levels as a person ages may be low vitamin B12 levels. The body needs vitamin B12 in order to make melatonin. Like melatonin, vitamin B12 levels decline with age, and vitamin B12 deficiency is often found in people aged 65 and over.

I have found taking the methylcobalamin form of B12 (3 mg total) first thing upon arising and using melatonin at night (3 mg) can really help people improve their sleep quality and sleep-wake cycles.

And on the heels of this latest study, that recommendation makes even more sense.



THE SUPPLEMENT **EVERYONE** SHOULD BE TAKING

A huge and growing amount of research is showing staggering statistics about vitamin D deficiency. According to some research, at least 50 percent of North Americans have low blood levels of vitamin D. And that's a big problem, because low levels are implicated in a huge number of health conditions.

In fact, a new study published in the April 2014 issue of *British Medical Journal* analyzed data on more than a million people to determine relationship between disease and blood levels of vitamin D. The data included evidence from double-blind trials—the gold standard in scientific research—that assessed whether taking vitamin D daily was beneficial.

Conducted by a team of scientists at Harvard, Oxford, and other major universities, this study provides further evidence that vitamin D₃ protects against major diseases. Adults with lower levels of the vitamin in their systems had a 35 percent increased risk of death from heart disease, 14 percent greater likelihood of death from cancer, and a greater mortality risk overall. In analyzing the double-blind studies, middle-aged and older adults who took D₃ had an 11 percent reduction in mortality from all causes, compared to adults who did not. The benefits were found only with D₃, and they found no benefit in people taking the D₂ form of the vitamin.

The researchers estimated that an astonishing 13 percent of all deaths in the United States could be attributed to low vitamin D levels.

To ensure optimal vitamin D status, most health experts are advocating daily dosages of 2,000 to 5,000 IU, even in healthy adults. While vitamin D₃ conceivably has the potential to cause toxicity, the reality is that dosages in the range of 2,000 to 5,000 IU per day are now recognized as being perfectly safe levels.

13%

THE NUMBER
OF DEATHS
LINKED WITH
LOW VITAMIN D₃
LEVELS
IN THE U.S.



HEALING FOODS

MORE MEDITERRANEAN BENEFITS

Metabolic syndrome, a collection of conditions (high blood pressure and blood sugar, excess body fat around the middle, and high cholesterol), affects nearly one in four Americans, according to a 2013 study published in the *Journal of the American College of Cardiology*. While each of those conditions has risks of its own, the combination of them puts sufferers at higher risk of developing heart disease, stroke, and diabetes.

In an attempt to identify lifestyle changes that can help prevent metabolic syndrome, researchers recruited more than 400 people to participate in a diet study for a year. One group of participants

followed the Mediterranean diet (high in plant-based foods, low in red meat, focused on healthy fats) with the addition of virgin olive oil. The second group followed the Mediterranean diet with nuts. The third followed a low-fat diet.

After one year, both Mediterranean diet groups had changes in their blood concentrations of fatty acids that are beneficial for metabolic syndrome. Count this as one more point for a diet that has already been proven to provide a host of health benefits.



SUPER STRAWBERRIES

It's no secret that fresh strawberries—a rich source of flavonols—can help reduce stroke and heart attack risk. But a new study shows that even freeze-dried strawberries reduce heart disease risk.

The study, published in the June 2014 issue of the *Journal of Nutrition*, found that freeze-dried strawberries decreased total and LDL cholesterol, and more strawberries resulted in greater reductions. This study is interesting because it suggests that the benefit from strawberries might result not just from the flavonoids, but also from the fruit's fiber components.

Fresh fruit is always the best choice, but this study shows that even a small amount of dried strawberries results in a noticeable reduction in cardiovascular disease risk.





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¹ Di Pierro F., Menghi A.B., Barreca A., Lucarelli M., Calandrelli A., "Greenselect® Phytosome as an Adjunct to a Low-Calorie Diet for Treatment of Obesity: A Clinical Trial", *Alternative Medicine Review*, Volume 14, Number 2 (2009).

MOVEMENT

PROTECT AGAINST BREAST CANCER

To lower risk of breast cancer, regular exercise is key, according to a study soon to be published in *Cancer Epidemiology, Biomarkers & Prevention*.

The study, which looked at more than 44,000 African American women for 16 years, found that women who exercised vigorously for seven hours or more a week were 25 percent less likely to develop breast cancer than those who exercised less than an hour a week.

What counts as vigorous exercise? According to the findings, brisk walking offers breast cancer protection, but walking at a normal pace does not. So to reduce breast cancer risk, lace up those shoes, and pick up the pace.



EXERCISE BOOSTS BRAIN FUNCTION

Want to keep your mind sharp as you age? Keep your heart in shape and your brain will follow, say researchers at the University of Montreal. As people age, their arteries begin to stiffen. That stiffening begins with the aorta (the main vessel stemming from the heart) and eventually affects the vessels in the brain. It's thought that the hardening of the blood vessels in the brain could contribute to the loss of cognitive function associated with aging.

In their study, soon to be published in *Neurobiology of Aging*, the University of Montreal researchers looked at MRI scans while participants underwent tests of cognitive function. The MRI scans evaluated blood flow to the brain, brain activity during the cognitive test, and the condition of the aorta.

The results? Older adults whose aortas were in better shape and were more fit performed better on their cognitive tests. The authors conclude that a lifestyle that maintains the arteries' elasticity can help prevent cerebrovascular damage, and keep your brain sharper for longer.



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COLD AND FLU

BOOST YOUR **IMMUNITY** NOW

At all times, day and night, we are constantly exposed to various “bugs”—bacteria, viruses, fungi, and other invisible invaders. They are in the food we eat and the air we breathe. They’re in everything we touch or smell. Despite this onslaught, many of us rarely catch a cold or get sick because of the strength of our immune system. With a strong immune system, you are safe from attack by all but the most virulent microorganisms. Even if infection does gain a foothold, it’s usually just a matter of time before your immune system mounts an effective counter attack. When working properly, the immune system has a remarkable arsenal of weapons to fight off microorganisms that would do us harm.

THE INFECTION EQUATION

The infection equation is like math. In the infection equation the interaction of the host’s immune system with the infecting organism determines the equation’s outcome. Each day we’re exposed to organisms that could make us sick, yet we don’t always fall prey to these “bugs” because our immune system is generally stronger than the organism: If the “bug” is extremely powerful, or our immune system is compromised, an infection can occur.

For too long modern medicine has ignored the role of immune function in the infection equation. Conventional medicine has been obsessed with the nature of the beast—the infecting agent—rather than the condition of the host and its defenses. Unfortunately, the obsession with the pathogen has become predominant in modern medicine, and the importance of the host’s immune system has been largely ignored.

TUNING UP YOUR IMMUNE SYSTEM

The first goal is to make sure that you provide the immune system with all the vital ammunition by consuming a health-promoting diet and utilizing proper nutritional supplementation. A deficiency of virtually any nutrient can significantly impair immunity. Next,





follow a healthy lifestyle that includes getting enough sleep and engaging in a regular exercise program. Supplying optimal nutrition and learning to effectively deal with stress go along way in supporting central control mechanisms to keep the immune system functioning well. Tuning up your immune system increases your resistance not only to colds and flu, but also to cancer and other potentially deadly diseases.

VITAMIN D FOR PREVENTION

A growing body of science connects low levels of vitamin D to influenza. Since our bodies need sunshine to make vitamin D, we make less during winter months. Supplementing the diet with additional vitamin D can help prevent a drop in vitamin D levels when sunlight is hard to come by. Beyond that it appears that vitamin D functions in the body in a

(continued on page 17)

COLD AND FLU

YOU'VE GOT A COLD. NOW WHAT?

Once a cold develops there are several natural approaches that can speed up recovery. With a healthy immune system, a cold should not last more than three or four days. Add in some natural healing methods and you can shorten that, but it will still take time. Do not expect immediate relief in most instances. And since most natural therapies for colds involve assisting the body in attacking the cold rather than suppressing the symptoms like drugs, the symptoms of the cold may temporarily worsen.

• **Rest.** The immune system functions better under optimal parasympathetic nervous system tone. This portion of our autonomic nervous system assumes control over bodily functions during periods of rest, relaxation, visualization, meditation, and sleep. During the deepest levels of sleep, potent immune-enhancing compounds are released and many immune functions are greatly increased.

• **Drink up.** Load up on fluids, particularly water and unsweetened herbal teas. When the membranes that line the respiratory tract get dehydrated, they provide a much more hospitable environment for the virus. Consuming plenty of liquids and using a vaporizer maintains a moist respiratory tract that repels viral infection. Drinking plenty of liquids will also improve the function of white blood cells by decreasing the concentration of solutes in the blood. And contrary to popular lore, orange juice is not a great way to hydrate when you're sick. Neither are other concentrated sources of sugars like glu-



cose, fructose, sucrose, or honey. The sugar greatly reduces white blood cells' ability to kill bacteria.

• **Take vitamin C.** Orange juice may be out, but vitamin C is in. You've probably heard that vitamin C treats and prevents the common cold. It has been more than 40 years since Linus Pauling wrote the landmark book, *Vitamin C and the Common Cold*. Pauling based his beliefs about the immune-boosting properties of vitamin C on several studies that showed it reduced severity and duration of the common cold. An analysis of more than 30 studies, including more than 10,000 participants, concluded that vitamin C can reduce the risk of developing a cold in high-stress situations. What's more, it may also reduce the duration of a cold by a day or so.

• **Think zinc.** Several studies have shown that zinc lozenges provide relief from sore throat due to the common cold. Zinc is a critical nutrient for immune system function and also possesses direct antiviral activity. Dissolve a lozenge supplying 15 to 25 mg of elemental zinc in the mouth every two waking hours after an initial double dose. Continue for up to 7 days.

way that prevents viruses from infecting cells. Research has shown that vitamin D supplementation prevents respiratory infections in adults and children. During the winter months, most vitamin D experts recommend that people over 10 years of age take 5,000 IU per day. For children under the age of 1 year the dosage is 1,000 IU; children between the ages of 2 and 4 years should take 2,000 IU; and children between 4 and 9 should take 3,000 IU daily.

HIGH-QUALITY ECHINACEA BOOSTS IMMUNE FUNCTION

More than 300 scientific investigations have shown that echinacea exerts significant effects on immune function. But not all of the clinical studies have been positive. Mixed results from clinical studies with echinacea are most likely due to insufficient active compounds in the supplements tested.

Chemical analysis of commercial echinacea preparations has shown tremendous variation in the levels of key compounds even within the same product from batch to batch. Echinacea must be grown properly, harvested at the exact right time, and extracted precisely for maximal levels of all active compounds. If not, it is likely to offer no significant benefits. In contrast, clinical studies with Echinamide, a patented, unique echinacea product standardized for effective levels of polysaccharides, cichoric acid, and alkylamides have been positive. The



studies have shown Echinamide is useful not only in lessening the severity and duration of the flu and common cold, it can also be used to boost immune function in those susceptible to colds and flu. Simply follow the dosage on the bottle, but be sure the product is standardized for the key active ingredients.

LAUGHTER IS THE BEST MEDICINE

Laugh long and often to boost your immune system. Detailed scientific investigations have shown that laughter is one of the most powerful natural immune enhancers available. In addition, guided imagery, hypnosis, and meditation have been shown to enhance immune system function. Obviously, if you want to have a healthy immune system, you need to laugh often, view life with a positive eye, and put yourself in a relaxed state of mind on a regular basis.

ARTICHOKE

THE HEART OF HEALTH

Long considered a delicacy, the globe artichoke is actually the unopened edible flower bud of a thistle-like plant whose Latin name is *Cynara scolymus*. It is one of the world's oldest cultivated vegetables, and it has a noble history. Artichokes are referenced in the writings of the Greek historian Dioscorides, who noted their large-scale cultivation near Carthage, and the early Roman scholar Pliny, who remarked that they were more esteemed and commanded a higher price than any other garden vegetable.

Today, 99 percent of all the globe artichokes grown in the United States are produced in the area of Castroville, California, the self-proclaimed "Artichoke Capital of the World." Worldwide, though, the lion's share (80 percent) of artichokes hail from Italy, Spain, and France—all countries that border the Mediterranean Sea and have a similar climate of warm winters and cool summers.

NUTRITIONAL HIGHLIGHTS

Globe artichokes aren't just a delicacy. They are also an excellent source of dietary fiber, magnesium, and the trace mineral chromium; a very good source of vitamin C, folate, biotin, and the trace mineral manganese; and a good source

of niacin, riboflavin, thiamin, vitamin A, and potassium. A medium-sized globe artichoke delivers all these nutrients in a mere 60 fat-free calories.

HEALTH BENEFITS

Fresh artichokes are very low in calories because most of the carbohydrate is in the form of inulin, a polysaccharide or starch that is handled by the body differently than other sugars. In fact, the body does not use inulin for energy metabolism. This makes artichokes extremely beneficial to diabetics as inulin has actually been shown to improve blood sugar control in diabetes. However, it is important that the artichoke be as fresh as possible as inulin is broken down into other sugars when artichokes are stored for any length of time.

The artichoke has a long folk history in treating many liver diseases. Recent evidence supports this long-time use. The active ingredients in artichoke are caffeoylquinic acids (like cynarin). These compounds are found in highest concentrations in the leaves, but they are also found in the heart. Artichoke leaf extracts have demonstrated significant liver-protecting and regenerating effects. They also possess choleretic effect, meaning they promote the flow of bile and fat to and from the liver. This



is a very important property; if the bile is not being transported adequately to the gallbladder, the liver is at increased risk of damage. Cholagogues are very useful in the treatment of hepatitis and other liver diseases via this “decongesting” effect.

Cholagogues typically lower cholesterol levels, since they increase the excretion of cholesterol and decrease the manufacture of cholesterol in the liver. Consistent

with this cholagogue effect, artichoke extracts have been shown to lower blood cholesterol and triglyceride levels in both human and animal studies. In one experimental double-blind study, 30 patients given 500 mg of cynarin per day for 50 days had an average 20 percent reduction in total cholesterol along with an average 15 percent reduction in triglycerides compared to a matched group who received a placebo.

ARTICHOKE

Caffeoylquinic acids from artichoke have also demonstrated potent activity against the human immunodeficiency virus (HIV). Specifically these compounds inhibit a key enzyme (HIV integrase) essential to the virus's ability to reproduce.

HOW TO SELECT AND STORE

An artichoke should be compact and heavy for its size. Its outer leaves should be thick, firm, fleshy, and tightly closed. Avoid artichokes whose leaves have begun to spread apart or appear dry and woody—signs the artichoke is past its prime. Turn the artichoke over and check the stem end; tiny holes are evidence of worm damage, which may be extensive inside.

Spring artichokes should be a softer green than the fall and winter crop, which are typically olive green and may have what growers call a “winter-kissed” appearance: bronze-tipped leaves or a lightly blistered, whitish outer surface. These changes are caused by light frost expo-

sure in the fields and do not affect the artichoke's taste or tenderness. Avoid those with blackened, wilted leaves, or dark spots; these artichokes are not “bronzed,” but damaged and deteriorating. Lastly, give your prospective purchase a squeeze; the plump, crisp leaves of a fresh artichoke will reply with a squeaky sound.

In addition to fresh whole artichokes, baby artichokes and artichoke hearts are also available in cans and jars or frozen. All the inedible parts have been removed from these products, so they're practically ready to enjoy. Canned artichokes are usually packed in brine. To reduce their high sodium content, drain the brine and rinse with cool water. Similarly, with marinated artichokes, which are usually sold in jars, you can significantly lessen the hefty calorie tally supplied by the seasoned oil mixture in which they are preserved by pouring off the oil and letting them drain in a colander for a few minutes, then rinsing



with cold water if you're concerned about sodium. Frozen artichoke hearts are uncompromised by added ingredients; simply cook them briefly until heated through.

Despite their sturdy appearance, fresh artichokes are quite perishable. Place them in a plastic bag, sprinkle in a few drops of water to maintain moisture, and store in the vegetable crisper of your refrigerator, where they will keep for no more than four to five days. Do not rinse, wash, or trim them before storing. To store cooked artichokes, allow them to cool, wrap in plastic wrap, or place in a plastic bag and refrigerate. They should keep for four to five days.

TIPS FOR PREPARING

Artichokes can be steamed, baked, or boiled and are delicious eaten either hot or cold. Artichoke hearts can also be sautéed or stir-fried alone or with other vegetables in a small amount of broth or oil. Be sure to cut off the artichoke's topmost inch to remove the upper inedible leaf tips. Trim the tips of the remaining outer leaves with kitchen shears. To prevent cut parts from darkening, rub them with lemon juice or place the entire artichoke into a bowl of cold water with a tablespoon of lemon juice or vinegar. Immediately before cooking, clip or pull off any short, coarse leaves at the bottom and cut the stem flush with the base to make for a more attractive presentation when served.



3 WAYS TO SERVE ARTICHOKE

Serve whole artichokes or quartered artichoke bottoms with a healthy dipping sauce. Try an olive oil and balsamic vinaigrette with or without added garlic. Simply add several unpeeled garlic cloves to the pot when cooking the artichokes, then remove and mash the cloves to create a paste to add to the vinaigrette. For a sauce with an Asian flair, combine soy sauce, lemon juice or rice vinegar, minced garlic, and grated fresh ginger; top with a dash of dark sesame oil. Plain whole yogurt makes an excellent base for a rich creamy dip. Flavor it with puréed roasted red peppers; roasted eggplant, lemon juice and garlic; or a rich bleu cheese or buttermilk-based salad dressing.

Stuff steamed or boiled artichokes with a mixture of cooked brown rice or quinoa; pine nuts or walnuts; and chopped vegetables such as onion, mushrooms, sweet pepper, and broccoli. They can also be chilled after cooking and filled with tuna, shrimp, salmon, or chicken salad.

Quartered artichoke hearts can be used as an addition to tossed salads, pasta, rice pilaf, tuna or chicken casseroles, or warm potato salad.

FRIENDSHIP

THE VALUE OF CONNECTION

Most of us do not take the time to recognize how important our friendships are to us until we are in a state of need. The truth is that part of the human experience is realizing that life is a journey meant to be shared with our family and friends. We need each other. We need to work with others, exchange services, share information, and provide emotional comfort. Positive human relationships sustain us and nourish us in every possible way to the depths of our body and soul. Friendships are critical to a life worth living.

FRIENDSHIPS AND HEALTH

Loneliness is a dreaded state. Feelings of isolation and being alone in the world can be devastating. On the flip side, having a strong network of friends can improve our health and help us to live longer, according to a study conducted by the Centre for Ageing Studies at

Australia's Flinders University. The study followed nearly 1,500 older people for 10 years. It found that those who had a large network of friends outlived those with the fewest friends by 22 percent.

Several explanations can be offered, but the most likely is that the companionship provided by friends may boost mood and self-esteem. The positive emotions we experience when we are with good friends apparently improves our physiology.

Interestingly, the study found that close relationships with children and relatives had almost no effect on longevity. That is not saying these relationships are not important to the quality of our lives, just that they had no real effect on life expectancy.

Perhaps the explanation is that friends may be better able to be there for you

(continued on page 26)



“The glory of friendship is not the outstretched hand, not the kindly smile, nor the joy of companionship; it is the spiritual inspiration that comes to one when you discover that someone else believes in you and is willing to trust you with a friendship.”

—*Ralph Waldo Emerson*



in good times and challenging times. They also may be better able to:

- Increase your sense of belonging and purpose
- Boost your happiness and reduce your stress
- Improve your self-confidence and self-worth
- Help you cope with traumas, such as divorce, serious illness, job loss, or the death of a loved one
- Encourage you to change or avoid unhealthy lifestyle habits, such as excessive drinking or lack of exercise

DEVELOPING FRIENDSHIPS

For many people, establishing friendships comes very easily. For others, it is difficult to attract or maintain friendships. Friendships require work and time. They take effort.

Not surprisingly, with the expansion of social media, it is now easier for just about anybody to reach out and find friends with common values and interests. However, you cannot establish the same level of intimacy via the Internet as you can in the real world. That said, there are great avenues out there to join a chat group or online community that can help people feel connected and less alone.

FRIENDSHIP

BUILD YOUR FRIENDSHIP SKILLS

In order to have good friends, you need to *be* a good friend. What are the characteristics that you feel define a good friend? Do you value honesty, loyalty, integrity, sincerity? Think about what you look for in a friend, and try to develop those traits within yourself. By developing the characteristics of a true friend deep within you, you will attract people with similar values.

My father, Cliff Murray, Jr., was one of the most popular men I have ever met in my life. Just about everybody loved my dad and he had many, many friends. His life was rich with quality relationships. When I was in my 20s I asked him his

secret. He shared with me his story of feeling lonely as a young man and not having any real friends. His life changed when he read Dale Carnegie's book *How to Win Friends and Influence People*. Written in 1936, this book is a classic on how to develop friendships. I highly recommend it.

NOURISH YOUR FRIENDSHIPS

If you are blessed to have good friends, then congratulations! But, you have to continue to nourish these relationships. Here are five simple steps to make your friendships even better.

1. Connect. In this busy world, time can fly by without staying in touch with our friends. Connecting to our

FRIEND-FINDING TIPS

If you need to establish new or better friendships in your life, you have to get out into the world and make connections. Here are a few suggestions:

- Go to church or some other faith community. Take advantage of the social opportunities these organizations offer.
- Get involved in your community. Make sure it is something that you are interested in. Find a community cause or activity that means something to you.
- Volunteer at your local hospital, Boys and Girls Club, charitable group, or other organization.
- Take up a new interest that involves the opportunity to meet people who have similar interests. Take a yoga or aerobics class, wine tasting course, or a class at a community college.



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FRIENDSHIP

friends provides the food and water to the relationship. If you can't meet face-to-face, then call, text, or email them. Do whatever it takes to stay up-to-date and current with what is going on in their lives.

2. Express gratitude. Everyone likes to be loved, but everyone needs to be appreciated. Reach out and do something thoughtful that shows your appreciation. It has to be an action to make the most impact.

3. Create positive memories. Whether it is having a friend over for a special dinner, taking them to their favorite restaurant, or (my preference) spending some time with them on a great golf course, we have to celebrate our friendships by creating new memories while reminiscing about the old.

4. Clear the plate. Sometimes in friendships there are misunderstandings and conflict. Don't be afraid to bring these up, but only if your intent is to sincerely apologize for your actions and how they may have been perceived. Be prepared to make amends.

5. Don't be afraid. Friendships can grow through the stress of time and life events, but only if there is space enough to allow for change and the occasional expression of "tough love." For example, if your friend is engaging in an activity or going down a path that is potentially dangerous to their long-term goals, don't



be afraid to express your thoughts to them in a loving, non-judgmental way. That is a true, courageous friend.

WORTHY FRIENDSHIPS

Have you ever heard the passage, "Do not give what is holy to the dogs; nor cast your pearls before swine, lest they trample them under their feet, and turn and tear you in pieces." When I was a teenager, I brought a new friend over to meet my grandmother. Later, I asked her what she thought. Her response was "Don't cast your pearls before swine." Well, I was taken aback, but years later I truly understood what she was saying to me. My friendship was a valuable pearl and in her opinion this boy was not worthy. Of course, she was absolutely right, but I had to learn that lesson on my own. Make sure to nurture friendships with those friends who are worthy of your friendship. And do everything you can to make your friendships valuable.

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IRON

PREVENTING AMERICA'S MOST COMMON NUTRIENT DEFICIENCY

Iron plays a central role in our red blood cells, where it functions in transporting oxygen from the lungs to the body's tissues, and carbon dioxide from the tissues to the lungs. Iron also plays a role in several key enzymes used in energy production and metabolism—including DNA synthesis. It is critical to human life.

WHO IS AT RISK OF IRON DEFICIENCY?

Iron deficiency is the most common nutrient deficiency in the United States. The groups at highest risk for iron deficiency are infants under 2 years of age, teenage girls, pregnant women, and the elderly. Studies have found evidence that iron deficiency affects as many as 30 to 50 percent of these groups.

Iron deficiency may occur due to an increased iron requirement, decreased dietary intake, diminished iron absorption or utilization, blood loss, or a combination of factors.

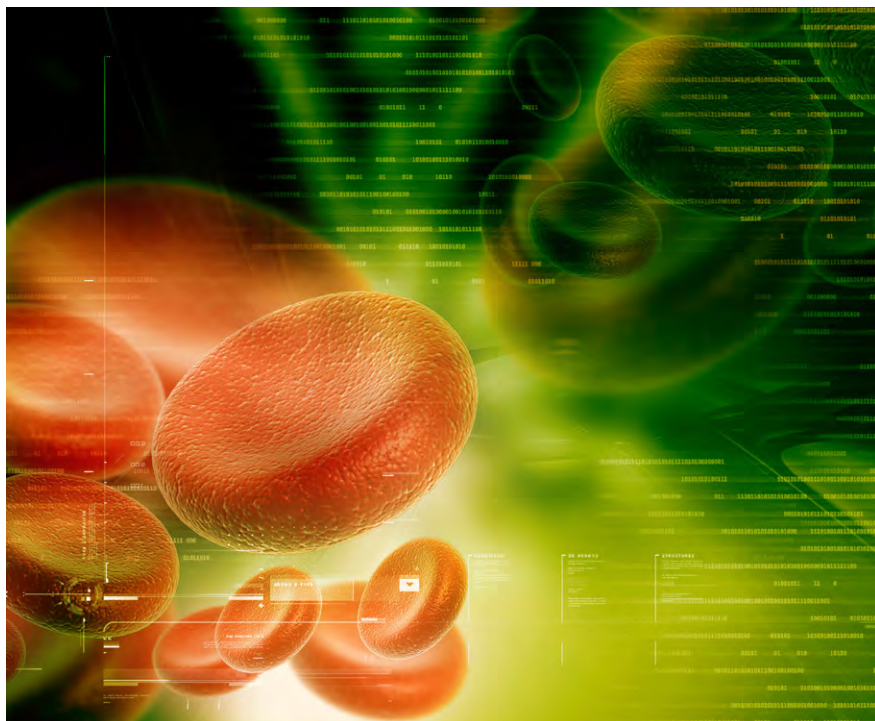
Increased requirements for iron occur during the growth spurts of infancy and adolescence, and during pregnancy and lactation. Currently, the vast majority of pregnant women

are routinely given iron supplements during pregnancy.

Inadequate intake of iron is common in many parts of the world, especially in areas that consume primarily a vegetarian diet. Typical infant diets in developed countries (high in milk and cereals) are also low in iron. The adolescent consuming a “junk food” diet is at high risk for iron deficiency.

The population at greatest risk for a diet deficient in iron is the low-income elderly population, in part due to the fact that decreased absorption of iron is quite common in the elderly. Decreased absorption of iron often occurs because of a lack of hydrochloric acid secretion in the stomach. Decreased stomach acid production is a fairly common condition in the elderly. Other causes of decreased absorption include chronic diarrhea or malabsorption, the surgical removal of the stomach, and antacid use.

Blood loss is the most common cause of iron deficiency in women of childbearing age. This is most often due to excessive menstrual bleeding. Other common causes of blood loss include bleeding



from peptic ulcers, hemorrhoids, and blood donation.

IRON DEFICIENCY AND ANEMIA

Anemia refers to a condition in which the blood is deficient in red blood cells or the hemoglobin (iron-containing) portion of red blood cells. The primary function of the red blood cell is to transport oxygen from the lungs to the tissues of the body in exchange for carbon dioxide. The symptoms of anemia, such as extreme fatigue, reflect a lack of oxygen being delivered to tissues and a buildup of carbon dioxide.

Iron deficiency is the most common cause of anemia. However, it must be pointed out that anemia is the last stage of iron deficiency. Iron-dependent

enzymes involved in energy production and metabolism are the first to be affected by low iron levels.

THE EFFECTS OF IRON DEFICIENCY

The negative effects of iron deficiency stem largely from the impaired delivery of oxygen to the tissues and the impaired activity of iron-containing enzymes in various tissues. Iron deficiency has proven health consequences, including the following.

Impaired immune function. Even marginal iron deficiency can significantly impair immune function. Iron deficiency greatly reduces the immune system's ability to fight off infection. Common findings in iron-deficient individuals are increased rate of infections, lymphatic tissue shrinkage,

IRON

altered white blood cell concentrations, and defective white blood cell function. Iron deficiency may contribute to chronic infections and frequent colds.

Diminished mental function. Virtually any nutrient deficiency can result in impaired brain function, especially in children. Since iron deficiency is the most common nutrient deficiency in American children, it is the most important nutritional cause of learning disability. Iron deficiency is associated with markedly decreased attentiveness, narrower attention span, decreased persistence, and decreased voluntary activity. Fortunately, iron supplementation can bring a return to normal mental function.

Decreased energy levels. Several researchers have clearly demonstrated that even a slight iron-deficiency leads to a reduction in physical work capacity and productivity. Nutrition surveys done in the United States have indicated that iron deficiency is a major impairment

of health and work capacity. Supplementation with iron has shown rapid improvements in work capacity in iron-deficient individuals. Impaired physical performance due to iron deficiency is not dependent on anemia. Again, the iron-dependent enzymes involved in energy production and metabolism will be impaired long before anemia occurs.

WHAT ARE THE BEST DIETARY SOURCES OF IRON?

The best dietary source of iron is red meat—especially liver. Good non-meat sources of iron include beans, molasses, dried fruits, whole grain and enriched breads, and green leafy vegetables. Fish is another good source. Iron from plant sources is better absorbed when it's eaten with vitamin C.

IRON SUPPLEMENTS

Iron deficiency can best be diagnosed with a blood test that measures serum ferritin, the iron storage protein. This is by far the most sensitive test for iron deficiency.

(continued on page 32)



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A.



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Iron supplementation is often required to raise iron levels, especially during pregnancy and in young menstruating women. Ferrous sulfate is the most popular iron supplement, but it often causes constipation or other gastrointestinal disturbance. Although it is best absorbed when taken on an empty stomach, doing so often causes nausea or GI upset. So it is most often taken with food, which greatly reduces its absorption.

Currently, the best forms of iron supplement appear to be special forms of ferric pyrophosphate and ferrous bisglycinate. Both are free from gastrointestinal side effects with high relative bioavailability, especially when taken on an empty stomach.

WHAT IS THE USUAL DOSAGE FOR IRON SUPPLEMENTS?

For iron deficiency, the usual recommendation is up to 60 mg daily in divided doses. For general health purposes, the RDAs should be used as supplementation guidelines. High intakes of other minerals, particularly calcium, magnesium, and zinc, can interfere with iron absorption, so when treating iron deficiency it is recommended to take iron separately from these minerals. In contrast, vitamin C enhances iron absorption.

CAUTIONS AND WARNINGS

Keep all iron supplements out of the reach of children. Acute iron poisoning in infants can result in serious consequences.



RECOMMENDED DIETARY ALLOWANCES (RDA) FOR IRON

GROUP	DAILY DOSE
Infants (7 months) up to age 10	10 mg
Males 11-18 years old	12 mg
Males 19 years and older	8 mg
Females 11 years and older	18 mg
Pregnant women	27 mg

Severe iron poisoning is characterized by damage to the intestinal lining, liver failure, nausea, vomiting, and shock.

Dietary intake of iron often does not adequately satisfy body needs. This is particularly common in young menstruating women and during pregnancy and lactation. Iron supplementation is recommended at these times and during deficiency. The best forms of iron supplement are ferric pyrophosphate and ferrous bisglycinate.



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EXPERT ANSWERS TO YOUR **HEALTH QUESTIONS**

FROM THE EDITOR

Do you have a question for Dr. Murray? Submit it online at www.DoctorMurray.com/contact-us. Please note that answers to health questions are not medical advice. If you have an issue that requires medical attention, please see your doctor.

Q Is PQQ the next nutrient superstar?

A Pyrroloquinoline quinone (PQQ) is a novel vitamin-like compound found in plant foods that is showing a wide range of benefits to brain and body function in preclinical studies and initial clinical evaluation. Although PQQ is not currently viewed as a vitamin, it is likely to be considered an essential nutrient in the future.

Q What exactly does PQQ do?

A PQQ stimulates growth and serves as a cofactor for a special class of enzymes involved in cellular functions like cellular growth, development, differentiation, and survival. It is also an extremely powerful antioxidant capable of catalyzing continuous cycling (the ability to perform repeated oxidation and reduction reactions) to a much greater degree compared to other antioxidants. For example, PQQ is able to carry out 20,000 catalytic conversions compared to only 4 for vitamin C.

Q Are there any food sources of PQQ?

A PQQ has been found in all plant foods analyzed to date, but in very

low quantities. PQQ-rich foods include parsley, green peppers, kiwi fruit, papaya, and tofu. These foods contain about 2–3 mcg per serving. Green tea provides about the same amount per 4-ounce serving.

Q Is PQQ an essential nutrient?

A Based on current research there is no question that it plays a critical role in human nutrition. Omitting PQQ from diets in mammals leads to growth impairment, compromised immune status, and abnormal reproductive function. Like essential nutrients, the immune system seems particularly sensitive to low levels of PQQ. With PQQ deprivation there are multiple defects in immune function and loss of white blood cells to respond properly.

Q What is the most important function of PQQ?

A One key action of PQQ involves a direct action on key enzymes involved in the energy-producing compartments in our cells—the mitochondria. As a result PQQ improves energy production. In addition, PQQ's

powerful antioxidant effect protects against mitochondrial damage. But PQQ not only protects mitochondria from oxidative stress—it also promotes the spontaneous generation of new mitochondria within aging cells. This effect is a “fountain of youth” for mitochondrial function.

Q What are the clinical uses of PQQ?

A Given the nutritional importance and tremendous span of physiological effects of PQQ, there are considerable benefits in conditions that revolve around low mitochondrial function, including in aging, many brain and neurological diseases (e.g., Alzheimer’s and Parkinson’s disease), and many other chronic degenerative disease. Current research has primarily focused on its ability to protect memory and cognition in both aging animals and humans. Here are some of the effects noted in the animal studies:

- PQQ reverses cognitive impairment caused by chronic oxidative stress and improves performance on memory tests in animal models.
- PQQ supplementation stimulates the production and release of nerve growth factor.
- PQQ protects the brain against neurotoxicity induced by other powerful toxins.
- PQQ protects brain cells from the damaging effects of the beta-amyloid-protein linked with Alzheimer’s disease.

Q Has PQQ been studied in human clinical trials?

A Yes, preliminary clinical studies are extremely encouraging, and several larger clinical trials are currently either completed and awaiting publication or are in process.

In regards to improving brain function, while PQQ is somewhat effective on its own, it is even more effective when combined with coenzyme Q10. This synergistic effect was first seen in animal studies and further demonstrated in a human double-blind, placebo-controlled clinical trial published in 2009 in the journal *Food Style*. In this study of 71 middle-aged and elderly people between 40 and 70 years of age, supplementation with 20 mg per day of PQQ resulted in improvements on tests of higher cognitive function compared to the placebo group. In the group receiving 20 mg of PQQ along with 300 mg of CoQ10, the results were even more dramatic. PQQ and CoQ10 are both involved in mitochondrial energy production, so these results are not that surprising.

Q What is the proper dosage?

A The current recommendation of 10 to 20 mg of PQQ daily is based upon the equivalent dose in animals consistently improved various mitochondrial functions. There are also some clinical and observational studies that justify the dosage, especially the 20 mg dosage, for enhancing memory.

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