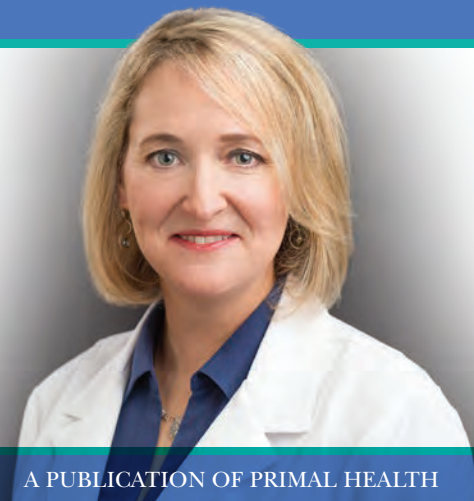


Dr. Marlene's NATURAL HEALTH CONNECTIONS

VOLUME 4 | ISSUE 5

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Collagen: How It Helps You Stay Young, Strong, and Pain-Free

Flexible joints, strong bones and muscles, healthy arteries, and smoother skin are among the benefits of collagen, but it's lacking in our diets. Here's how to get enough.

Collagen has become a popular ingredient in beauty and health products that aim to enhance skin health and reduce outward signs of aging, such as wrinkles. But it does a lot more — it's essential for every aspect of good health.

Unfortunately, collagen is in short supply in today's diets, and this sets the stage for many of the ailments that we associate with aging, such as achy joints, weak bones, stiff arteries, and wrinkly and sagging skin. With enough collagen, all these can be significantly improved.

To be realistic, I can't promise you that you will magically regain your youth, but I can say that with adequate collagen in your diet, you will look, feel, and function better. And you may be surprised by how much better.

So, let's get down to basics. What is collagen? It's a protein — one of the materials that make up your body.

In fact, collagen is the single most abundant protein in the human body.¹

Think of it as a building block — a special building block with some unique qualities that become especially important as we live longer.

Collagen gets its name from the Greek word for glue — *kólla* — because collagen makes up connective tissue that holds all the parts of the human body together. Connective tissue is in joints, skin, bones, arteries, and literally everywhere else in your body.

In addition to providing structure, collagen is essential for tissues to be flexible and to be able to stretch and shrink. Otherwise, we would all be like the Tin Man in *The Wizard of Oz*.

**IN THE NEXT ISSUE:
Best Supplements for
Healthy Blood Pressure**



In skin, collagen is a major component of the dermis, a layer that sits below the skin surface and gives skin its structure and flexibility. When viewed through a microscope, collagen in the skin is a mesh-like lattice.

When collagen degrades, the skin can sag and is more prone to wrinkles, because its underlying base is no longer strong, smooth, and pliable. Lack of collagen is somewhat like a sagging mattress.

In joints, collagen is a building

block of the cartilage that cushions bones and prevents them from rubbing together. Healthy cartilage is essential for joints to remain flexible and pain-free.

When it comes to healthy bones, calcium is the key nutrient that gets attention. But collagen is equally important because it works with the mineral to give bones strength and resilience. Without collagen, bones would be too brittle to provide any support.²

Collagen is also vital for the health of arteries, muscles, the digestive system, nails, and hair; for recovery from strenuous physical activity; and for healing from injuries.

Before I go into more details about how collagen improves various aspects of health, it's important to understand why we don't get enough of it.

Why Our Diets Lack Collagen

Once upon a time, most people couldn't afford the pristine cuts of muscle meat and fish that are so plentiful in today's supermarkets. To feed their families, they made do with all the parts that rich people discarded: bones, gristly cuts, giblets of poultry, heads of fish, and such.

Some of my patients remember their grandmothers or mothers buying cheap cuts of meat and simmering them in a broth with vegetable scraps, or making fish soup with the head, tail, and spine of a fish.

In the longer-term history of humans, hunters didn't waste a single part of an animal, and the heart was prized as the most nutritious part. But who does that now?

All those parts of animals that

we discard are sources of collagen. They give food a rich texture and delicious flavor. And collagen is what makes gelatin jiggle.

How to Get Collagen from Food

The most popular way to get collagen from food today is in bone broth. This works *if and only if* the broth is made in the traditional way. This means simmering animal parts for hours.

Collagen in uncooked bones and other animal parts doesn't have the gelatinous consistency I've described above. When it's cooked, it becomes gelatinous, and the nutrients in it become easy to absorb in your body.

I encourage you to get into the habit of making bone broth from any bones you have left over — from a bone-in roast, rotisserie chicken, or pork chops, for example. It doesn't matter if the bones were already cooked, although you can also buy raw bones.

I'm sometimes asked if you should make bone broth only with organic bones, to avoid toxins. The fact is that the toxins in meat are stored in the fat of the animal. Collagen is not fat; it's a protein and it doesn't hold toxins, so it doesn't matter whether your bones are organic.

And don't forget fish. If you buy and cook whole fish, the parts that you normally discard can go into your bone broth.

The Easy Way to Make Bone Broth

Bone broth was traditionally made with leftover scraps of vegetables and inedible parts of meat, poultry, and fish — or a combination of

Dr. Marlene's

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Primal Health, LP

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these. The whole idea was to fully use every part of an animal and vegetable instead of wasting these, as we do today.

We buy so many foods in a ready-to-cook form, such as carrots without tops, celery without its leaves, and the muscle portions of meat, poultry, and fish without skin, bones, or gristle. This is convenient but not ideal.

If you usually buy food the convenient way, I encourage you to try a more traditional approach, one step at a time. Buy some carrots with the tops, and some whole celery with leaves. And instead of throwing the leaves and tough parts in the trash, put them in a freezer bag and store them in the freezer. Keep doing this each time you buy vegetables.

Do the same with bones from your chicken wings, roasts, steaks, and chops, and poultry feet, necks, and gizzards — all the parts that you usually throw away. Include any leftover skin. Keep all these animal parts in a bag in the freezer, and when you've accumulated a bunch of bones and vegetable parts, make your broth. If you're light on bones, you can buy some raw ones at the butcher counter. You can mix different types of bones in one pot (see recipe on page 4).

Bone broth should always be one of your staples. Not only is it simple to make and rich in health-promoting collagen and minerals, but it's also extremely versatile. You can warm up and drink a cup of broth any time, adding ginger or turmeric for flavor and anti-inflammatory benefits, if you like. And you can use it in any recipe that calls for stock.

Buying Ready-Made Bone Broth

If you decide to buy ready-made bone broth, be sure to choose a product that clearly says it is “bone broth” that was made the traditional way. Anything labeled simply “broth” or “stock” is not traditional bone broth and won't provide you with collagen.

Ready-made bone broths that are the real thing may be liquids or powders that you mix with water. They generally contain approximately 10 grams of protein per serving. The protein content is a good clue, so I suggest checking it in the Nutrition Facts.

Collagen Powder Supplements

The next-best collagen source is a supplement of collagen powder. It's extremely convenient, and I recommend it to many of my patients.

Collagen powder is made from

animal parts that contain collagen and products are often described as “collagen peptides.” I'll explain what that means.

All protein is made of amino acids — the building blocks of protein. When you eat protein, your body breaks it down into amino acids and these provide nourishment. In nature, different foods contain different combinations of amino acids, which is why it's important to eat a variety of foods.

Peptides are microscopic strings of amino acids. They occur naturally in food and can be manufactured in a lab. In the case of collagen supplements, the peptides are made from collagen extracted from animals.

It's easier for your body to absorb peptides than a whole protein. When you consume a powdered collagen supplement, it's easily absorbed and boosts the collagen levels in your body.

Powdered collagen peptide supplements are also called “collagen

About Dr. Marlene

Dr. Marlene Merritt's passion for natural medicine is fueled by her drive to help others, and her own experience of overcoming a debilitating heart condition, diagnosed at the age of 20. A competitive cross-country cyclist at the time, she suddenly began experiencing severe chest pains. Forced to quit the sport, she suffered from extreme fatigue and constant pain for another 15 years, despite doing everything that conventional, Western medical doctors told her to do.

And then, the tide turned. A physician trained in naturopathic healing recommended a whole-food vitamin E supplement. A week after starting the supplement regimen, her energy began to return, and the pain began to disappear.

Dr. Marlene is a Doctor of Oriental Medicine, has a Master's in Nutrition, and is an Applied Clinical Nutritionist. She is Board Certified in Bariatric Counseling, and certified in the Bredesen MEND Protocol,[™] a groundbreaking method of reversing Alzheimer's disease. She sees patients at the Merritt Wellness Centers in Austin, Texas, and Santa Fe, New Mexico, trains health practitioners nationwide, and is the author of *Smart Blood Sugar* and *The Blood Pressure Solution*.



hydrolysate” or “hydrolyzed collagen,” but these terms all mean the same thing. Different manufacturers use different terms. Products usually list the animal or fish source of the collagen.

Collagen powders can be mixed with cold or hot liquids or with broths or sauces, or they can be sprinkled on moist food such as oatmeal. Some of my patients mix the powder in their morning coffee. Unflavored collagen powder doesn’t have any noticeable taste, but if you prefer something flavored, there are collagen creamers and flavored powders.

Collagen Supplement Research

These are some results of studies that tested powdered collagen supplements for various conditions:

- A study of middle-aged women found that taking between 2.5 and 5 grams of collagen, daily for 8 weeks, improved skin elasticity.³
- Among people who suffered from knee osteoarthritis and were age 40 or older, one study tested 10 grams of collagen daily for 90 days. Nearly 82 percent of participants rated their improvement as good or ideal.⁴
- Objective evidence from imaging tests, at Tufts University in Boston, showed that supplementing with collagen improved density and health of cartilage and enhanced joint function among people with osteoarthritis.⁵
- In a study of post-menopausal women who were losing bone, 5 grams of collagen, taken daily for one year, significantly improved bone density. In the

part of the hip bone where most hip fractures occur, bone density improved by 7 percent — a significant amount.⁶

- Frail, elderly men who took 15 grams of collagen daily during a 12-week muscle-building program had greater improvements in muscle growth and strength than men doing the same program without the supplement.⁷
- A study of healthy older people found that 16 grams of collagen, taken daily for 6 months, lowered risk for heart disease. The supplement reduced arterial stiffness, and among some participants it also increased levels of “good” HDL cholesterol.⁸

Collagen can also strengthen nails and hair, improve wound healing, and enhance digestion by strengthening the walls of the digestive system.

Gelatin: Another Collagen Source

I rate bone broth as the best source of dietary collagen, collagen powder second, and gelatin third. That said, the best source of collagen for you is the one you are going to consume. So, if you don’t want to drink traditional bone broth or take collagen powder supplements, I do recommend gelatin.

I don’t mean eating sugary gelatin desserts. Instead, buy some unflavored gelatin and make your own jiggly dessert with an herbal tea instead of plain water, and sweeten it with xylitol.

Collagen Help for Vegans

Collagen is not found in any plant foods. However, glycine supplements will stimulate more

Basic Bone Broth Recipe

There is no prescribed ratio of animal parts to vegetables, although individual cooks may have their preferences. Vegetables add flavor as well as nutrients.



This is the basic recipe:

- Put bones and other leftover animal components and vegetables in a crock pot.
- Add enough water to cover the contents, but not more.
- Add 2 tablespoons of white vinegar. It helps to pull minerals out of bones.
- Put the lid on the pot.
- Set the cooking temperature on low and let it cook.

Cooking Times

The time depends on the types of bones. If you have a combination, use the longest cooking time from these:

Beef or pork bones: at least 24 hours
Turkey bones: at least 12 hours
Chicken bones: at least 8 hours
Fish bones: at least 4 hours

Straining the Broth

Once the broth has cooked and cooled, take out the large pieces with a slotted spoon, then strain the rest through a fine sieve into another pot. Cover and refrigerate for a couple of hours.

A fatty layer will form on top. Scrape it off, and your broth is done.

Storing Bone Broth

Refrigerate the amount you’re going to use in the next week and freeze the rest. I like to freeze it in ice cube trays and store the cubes in a bag. Then it’s easy to heat up a cup or whatever quantity I need.

production of collagen and can be taken by anyone who does not eat animal foods.

Glycine is the main amino acid in collagen. Among plant foods, beans, nuts, and seeds are some good sources of glycine. However, if you're trying to boost your collagen for health benefits, glycine supplements are a good option. Studies have used 3 to 5 grams of glycine daily.

A Unique Collagen Supplement for Joints

There is one other, different type of collagen supplement — UC-II — that is specifically formulated to reduce joint inflammation and pain. It comes in pills and the dosage is only 40 mg, which is much less than the usual amounts of powdered collagen.

“UC-II” is short for “undenatured type II collagen.” It is made from animal cartilage that cushions bones in the joints.

Chronic inflammation can damage and slowly destroy the cartilage in joints. And even if there hasn't been a lot of cartilage destruction, inflammation in a joint will lead to pain. UC-II reduces joint pain by reducing

inflammation, which may or may not be obvious.

A joint can hurt when you exert yourself, it can occasionally hurt for no obvious reason, it can hurt all the time, or it can just be stiff — some patients tell me their joints are “creaky.” All these are signs of inflammation.

UC-II Research

Numerous studies have tested UC-II collagen supplements for joint pain. Most lasted between 3 and 6 months.

One recent study summarized results of 7 trials with a total of more than 700 people. In almost all these studies, participants suffered from osteoarthritis, and researchers measured improvement in knee pain. The exception was one study of 55 healthy people who did not have osteoarthritis but experienced some knee pain after intense exercise that put stress on their knees.

All these studies found that taking 40 mg of UC-II daily provided significant relief from joint pain. Studies of companion animals with arthritic joints also found that the supplement

provided relief.⁹ In case you're wondering, these were the daily dosages that were effective for animals: 20 mg for dogs, 10 mg for cats, and between 80 and 640 mg for horses.

In products designed for joint health, you may see UC-II collagen listed in the Supplement Facts as “UC-II Standardized Cartilage.” Unlike collagen powder, it is not a source of dietary protein because the dose, while effective for joint-pain relief, is extremely small.

A Final Word

Collagen production is slow. If you consume collagen daily, skin, hair, and nails will generally show some changes in a month, while bones change over a period of years.


When it comes to joint health, I've seen some patients experience a difference very quickly — sometimes in days and more often within a week or two. But for optimum benefits, collagen needs to be part of your lifestyle.

Related to This Topic

These are some earlier issues of this newsletter that address related topics:

| Related Topic | Volume | Issue | Title |
|-------------------------|--------|-------|---|
| Healthy Meat | 3 | 2 | The Diabetic's Guide to Eating Meat |
| Joint Health | 2 | 5 | The 90-Day Program to Relieve Arthritis |
| A Healthy Low-Carb Diet | 1 | 8 | The Guide to Healthy Eating |
| Inflammation | 4 | 4 | How to Calm Harmful Inflammation |

Access these online by logging in to www.NaturalHealthConnections.com.



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2 Viguet-Carrin, S., et al. "The role of collagen in bone strength." Osteoporos Int. 2006;17(3):319-36.

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Vicki wanted to lose weight, but she hated exercise – so how the heck did she **drop 32 pounds** in two months?

If you're having trouble losing 15 pounds or more, just see what happened to Vicki...

Like most of us hitting middle age, Vicki started packing on a few extra pounds each year. Her weight crept up so gradually she hardly noticed. But eventually, Vicki, her husband, and her doctor became concerned. As you might imagine, Vicki's self-esteem took a big hit.

Vicki tried to lose weight by depriving herself of all her favorite foods. She forced herself to eat boring salads and tasteless frozen diet meals. And she exercised like crazy (even though she hated it). But the extra pounds just wouldn't budge.

That's when a friend suggested Vicki try **Smash-It!** This nutrient-infused slimming shake was developed by Primal Labs – a leader in nutritional supplementation.

In the first month alone, Vicki lost 3.5 inches from her belly and 2 inches from her waist, hips, and thighs. And when you hear Vicki tell the story, you'll see why she feels like a different person. "I have so much energy. Oh my gosh, my co-workers noticed within two weeks I was dropping weight," she said. "I was walking around with a big smile on my face."

It's easy to see why Vicki had a big smile. She lost 18 pounds in just 30 days merely by substituting one meal a day with Smash-It! But she wasn't done...

In the second month, Vicki lost an additional 2.5 inches off her belly and waist, and 1.75 inches off her hips. **In only two months, Vicki lost a grand total of 32 pounds!**

What's more, Vicki lost all this weight with only minimal exercise. Which just shows you proper nutrition is 90% of successful weight loss. Because if you're eating the wrong foods, you can't exercise enough to get rid of unwanted fat.

And that's the secret of **Smash-It!**, the delicious meal-in-a-glass that works better than any diet or weight loss program.

Smash-It! has been scientifically formulated to fix the #1 reason most people can't lose weight: **TOXIC FAT CELLS**. Most people get stuck with unwanted pounds, not because of *too much* fat, but rather because of too much of the *WRONG* kind of fat.

This was proven in a landmark study at Temple University. Researchers studied fat cells of overweight people and found them to be toxic, inflamed, and unhealthy. Worse yet, these toxic fat cells "affect blood pressure, blood sugar, triglycerides, and cholesterol," according to *Future Medicine*.

Fortunately, a delicious **Smash-It!** meal replacement shake is an amazing improvement over any meal replacement, protein supplement, or "nutrition shake" you may have tried. In fact, by drinking a daily **Smash-It!** shake, you can:

1. FIX those toxic fat cells for good...
2. FIRE UP your metabolism and supercharge your health...
3. TAKE INCHES AND POUNDS OFF your hips, thighs, and waist, giving you the body you've been dreaming of...

Discover everything
you will get with
Smash-It! on the
next page!



Here's What You'll Find in Smash-It!

First, you'll get 21 grams of **quality protein** in a proprietary Quadsourc Blend. This includes whey and pea protein, and even cranberry seed protein to help boost your metabolism and give you the nutrition you need.

Next, a patented *Spectra Blend* contains 29 of nature's most powerful, health-boosting fruit, vegetable, spice, and herbal extracts, including green tea, turmeric, broccoli, bilberry, cinnamon, blueberry, acerola, and many more.

You'd have to eat several servings of fruits and vegetables to get the **antioxidant power** you'll find in *Spectra Blend*. As you know, antioxidants fight the free radical damage that comes with aging. Plus, they increase nitric oxide production to support healthy blood pressure levels and brain function.

In **Smash-It!**, you'll also get:

- ✓ 3 grams of gut-healthy **fiber**, including oat fiber, xanthan gum, and blue agave inulin to help support healthy lipid levels
- ✓ 8 special **enzymes** to help you better digest your food
- ✓ 6 special **probiotics** — "friendly" bacterial strains to support regularity and immune function
- ✓ Biotin and chromium to help maintain healthy blood sugar levels
- ✓ Vitamins A, C, E, B, and D for more health benefits, including support for bone and brain health, as well as healthy blood pressure
- ✓ L-leucine, an amino acid that helps minimize the loss of lean muscle tissue — something to guard against as you age (and when losing weight)
- ✓ And many more vitamins, minerals, and other nutrients to maintain your good health

But what about fat? You know you need fat to feel full and satisfied, so you won't be tempted by unhealthy carbs and sweets. But it has to be *good* fat, not the bad fats typically found in fast and processed foods.



Well, **Smash-It!** contains the absolute **best kind of fat** — medium chain triglycerides found in coconut oil that your body easily burns for energy. And as an added bonus, these fats help support cognitive health.

What's more, the Primal Health team knew that if it didn't taste great, you wouldn't drink it. So, **Smash-It!** comes in rich chocolate, strawberry, and vanilla caramel flavors. It's sweetened with monk fruit that's actually sweeter than sugar. **Smash-It!** contains just one gram of sugar per serving. Compare that to Ensure, with its unhealthy 15 grams of sugar.

With **Smash-It!**, you can **safely and easily melt off up to 15 pounds in just one month**. And enjoy all these benefits in just 30 seconds a day — with minimal exercise and NO impossible-to-maintain diet. What's not to love?

And no worries... Try **Smash-It!** completely risk-free with a no-questions-asked 100% money-back guarantee.

Just like Vicki, now YOU can start shedding those unwanted pounds. Imagine looking and feeling years younger... Fitting into your skinny clothes again... Sounds amazing, doesn't it? Say hello to your new life.

TRY IT TODAY! Smash-It! Nutrient-Infused Slimming Shake
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For Faster Service, call 1-888-309-0629
Monday-Friday 7 a.m. to 6 p.m. CST • Saturday-Sunday 8 a.m. to 5 p.m. CST

Health Benefits of Green and Black Tea

The ritual of preparing hot tea at home has gained popularity during the past year as we spent much more time at home. This surge in tea drinking isn't surprising, as the brew has a calming, relaxing quality that can help to reduce stress without making you sleepy.

But wait, you might well think, doesn't it contain caffeine? How can caffeine be relaxing?

The caffeine content of tea is lower than that of coffee, and tea contains another ingredient that counteracts the effect of caffeine: theanine (not found in coffee). Tea contains hundreds, if not thousands, of different components, but theanine is one that has been identified and studied.

When researchers measured levels

of electrical activity in the brain, they found that the theanine in tea increases alpha waves, and this creates a relaxing effect.¹ Theanine may also help to improve attention.

Types of Tea

Both green and black teas come from the same shrub, *Camellia sinensis*. The color of the tea depends on how leaves are treated after being harvested.

The leaves of the tea shrub contain a lot of moisture, and drying is always the first step. And then, leaves may be left out to oxidize – the natural process that turns apple slices brown. Green tea is not allowed to oxidize. Black tea is the most oxidized. In between, there's oolong, which is somewhat oxidized.

All these types of tea contain theanine. Some studies have found more theanine in green tea, while others found more in black tea. And another study concluded that theanine content varies in all types of teas and may be affected by the growing region and brewing method. But regardless of the theanine content, the health benefits don't stop there.

Lowering Blood Pressure

One recent study, at the University of California, Irvine, found that catechins in both green and black teas reduce blood pressure through the same mechanism. They activate a protein that relaxes muscles in the lining of blood vessels.²



These researchers also found that warming tea to about 95 degrees enhances its blood pressure-lowering effect. But this doesn't mean that only hot tea is beneficial, because cold or iced tea will warm up inside your body. Researchers also concluded that adding milk to tea won't interfere with the antihypertensive mechanism, because your digestive system will separate the milk from the beneficial tea catechins.

Enhancing Brain Health

A team of British and Chinese researchers found that people who habitually drank green, oolong, or black tea, at least four times a week, had more efficient brains. Brain imaging showed that regions in their brain were connected in a more orderly way than in people who didn't drink tea.

The researchers compared the healthier brain structure to a network of roads that is well organized, enabling vehicles to move efficiently without traffic jams. When connections in the brain are well organized, mental function is better as we age.³ This makes sense because signals in the brain can reach their destination with fewer detours.

How Big Is a Cup?

Most studies of green tea have been done in Japan and China, and 4 or more cups daily is often found to be a beneficial amount. This is not as much as you think, because in those countries a cup of green tea holds about 3.4 ounces. This means that 4 cups would fill a bit more than one Starbucks Tall (12-ounce) cup.

Many studies of black tea have been done in Europe and the United Kingdom, where the size of a cup may be 6 or 8 ounces.



Reducing Risk for Cancer

Studies have found that risk for many cancers, including skin, prostate, breast, lung, colorectal, and pancreatic cancers, is lower among people who habitually drink tea — anywhere from one to four or more cups daily. Although black tea has shown some anti-cancer benefits, green tea has the strongest evidence.⁴

Green tea is the richest source of EGCG (epigallocatechin gallate), and many of the drink's benefits are attributed to this nutrient. One recent study at the Rensselaer Polytechnic Institute in Troy, N.Y., found that EGCG triggers a natural mechanism that destroys cancerous cells and helps to repair damaged DNA that can lead to cancer.⁵

Did You Know?

In 2020, Americans drank more than 84 billion servings of tea — more than 3.8 billion gallons, according to the Tea Association of the U.S.A. Inc. Only 15 percent was green tea, and almost all the rest was black tea.

Preventing Heart Disease and Strokes

In Japan, studies with more than 130,000 people have found that green tea reduces risk for heart disease, stroke, and death from these. People who drank more than 5 cups daily (about 16 or 17 ounces) of green tea had half the risk of stroke, compared to those who drank less. Oolong tea was also beneficial.

Studies in Europe and the United Kingdom have found that drinking more than one cup of black tea

daily reduced the odds of a heart attack, and more than two cups was linked with fewer deaths from heart disease or stroke.⁶ The “cups” in these studies contained between 6 and 8 ounces of tea.

Lowering Risk for Diabetes and Its Complications

One of the largest studies of tea and diabetes was done in China. For 11 years, researchers tracked more than 482,000 healthy people and more than 30,000 people with type 2 diabetes. Results, published in March 2021, found that healthy people who regularly drank green tea were 10 percent less likely to develop diabetes.

Among diabetics, regular green-tea drinkers were 10 percent less likely to die, and 12 percent less likely to develop complications. Other types of tea did not reduce diabetes risks.⁷

Previously, some studies have found that drinking either green or black tea can help to lower blood sugar in healthy people and in those with type 2 diabetes. Drinking at least 3 or 4 cups daily was linked to the benefit.

To put this in context, tea will provide the greatest benefits when it's part of a healthy low-carb diet.

Best Way to Benefit from Tea

You'll save a lot of money by buying tea bags or loose tea and brewing your own. The pitfall to avoid is sugar, which is commonly found in ready-made tea. If you like a sweet taste, sweeten your tea with xylitol or stevia.

For soda drinkers, I recommend transitioning to green tea. But if

you prefer black tea, brew your own and enjoy! Drinking green or black tea daily makes the biggest difference, and a tea habit can be a good one.

How to Brew Tea



To make black tea, use water that has just boiled. But for green or oolong tea, let the water sit after boiling, for 5 to 10 minutes, before pouring on tea to prevent an unpleasant, bitter taste.

Use one teabag or one teaspoon of loose-leaf tea per cup. Brewing time depends on your personal taste, but 3 to 5 minutes is a general rule. Experiment to find your favorite intensity.

If you have never brewed tea with loose leaves, it's easiest if you use a pot like the one pictured above. Inside it, there is an infuser, a mesh container that holds the tea leaves. The mesh allows water to flow through the leaves and absorb the flavor and nutrients from the tea, but it keeps the leaves separated. When you pour your tea, the leaves stay in the infuser instead of going into your cup.

1 Nobre, A.C., et al. "L-theanine, a natural constituent in tea, and its effect on mental state." *Asia Pac J Clin Nutr*. 2008;17 Suppl 1:167-8.

2 Redford, K.E., et al. "KCNQ5 Potassium Channel Activation Underlies Vasodilation by Tea." *Cell Physiol Biochem*. 2021 Mar 6;55(S3):46-64.

3 Li, J., et al. "Habitual tea drinking modulates brain efficiency: evidence from brain connectivity evaluation." *Aging (Albany NY)*. 2019 Jun 14;11(11):3876-3890.

4 Khan, N., et al. "Tea and Health: Studies in Humans." *Curr Pharm Des*. 2013; 19(34): 6141-6147.

5 Zhao, J., et al. "EGCG binds intrinsically disordered N-terminal domain of p53 and disrupts p53-MDM2 interaction." *Nat Commun*. 2021 Feb 12;12(1):986.

6 Deka, A., et al. "Tea and Cardiovascular Disease." *Pharmacol Res*. 2011 Aug; 64(2): 136-145.

7 Nie, J., et al. "Tea consumption and long-term risk of type 2 diabetes and diabetic complications: a cohort study of 0.5 million Chinese adults." *Am J Clin Nutr*. 2021 Mar 11; nqab006. doi: 10.1093/ajcn/nqab006. Online ahead of print.

New Report on Pesticides in Produce

Eating organic vegetables and fruits can significantly reduce the amount of toxins in your body, but it isn't always realistic to buy organic versions. However, if you know which vegetables and fruits contain the most residues, you can make it a priority to look for organic versions of those.

The USDA tests pesticide residues on thousands of conventionally grown (not organic) produce samples around the country. And each year, scientists at the nonprofit Environmental Working Group analyze all those tests and issue a simple, updated report that you can use while you shop.

They identify the Dirty Dozen — the most contaminated vegetables and fruits — and the Clean Fifteen — the least contaminated. These are some things to note from this year's report:

- USDA tests found that nearly 70 percent of non-organic produce contained pesticide residues.
- The USDA found a total of 94 different pesticides on leafy greens and 115 different pesticides on bell peppers and hot peppers.

Pesticides are designed to kill living things. Although the exposure from eating one vegetable or fruit with toxic residues is small, if you consistently eat pesticide-contaminated produce, it adds up. Pesticides can disrupt hormones and impair the brain and nervous system, and they are linked to cancer.

On the bright side, studies show that people who eat more organic produce have lower risks of developing

allergies, obesity, elevated blood sugar, high blood pressure, and non-Hodgkin's lymphoma.¹

I'm *not* suggesting that you stop eating vegetables or fruits that are not organic. But I do recommend looking at what you eat on a regular basis and seeing if it's on the Dirty Dozen list below. If it is, do your best to buy organic versions of those vegetables and fruits.

What to Buy Organic

The Dirty Dozen 2021

These are most important to buy organic:

1. Strawberries
2. Spinach
3. Kale, collard, and mustard greens
4. Nectarines
5. Apples
6. Grapes
7. Cherries
8. Peaches
9. Pears
10. Bell and hot peppers
11. Celery
12. Tomatoes

The Clean Fifteen 2021

These are safest to buy non-organic:

1. Avocados
2. Sweet corn
3. Pineapple
4. Onions
5. Papaya
6. Sweet peas (frozen)
7. Eggplant
8. Asparagus
9. Broccoli
10. Cabbage
11. Kiwi
12. Cauliflower
13. Mushrooms
14. Honeydew melon
15. Cantaloupe

Where to Learn More:

You can see the whole list and download an app for your phone at www.ewg.org.

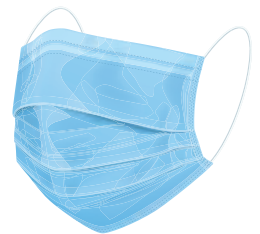
Masks Reduce Seasonal Allergies

Masks are recommended to reduce the spread of COVID-19. But they can also be beneficial for people who suffer from pollen or other seasonal allergies.

According to data from the University of Alabama at Birmingham, people with seasonal

allergies who wear masks outdoors are less likely to suffer from sneezing, watery eyes, and similar symptoms. And in 2020, a study of nurses who wore masks all day during their shifts found that they experienced fewer symptoms of seasonal allergies.²

It makes sense. Masks stop at least some airborne particles — including pollen and other allergens — from entering your respiratory system. The better the fit of a mask, the more protection it provides.



¹ Vigar, V., et al. "A Systematic Review of Organic Versus Conventional Food Consumption: Is There a Measurable Benefit on Human Health?" *Nutrients*. 2019 Dec 18;12(1):7.

² Dror, A.A., et al. "Reduction of allergic rhinitis symptoms with face mask usage during the COVID-19 pandemic." *J Allergy Clin Immunol Pract*. 2020 November-December; 8(10): 3590–3593.

Handwriting Helps Memory

With all our computers, tablets, and smartphones, we don't write as much on paper as we used to. But writing on real paper can give your brain some extra exercise and help you remember things better.

A Japanese study tested the effect of typing on a phone or tablet, writing with a digital pen on a screen, and writing the old-fashioned way on paper. The tests were done on a group of 48 college students, and the findings may surprise you.¹

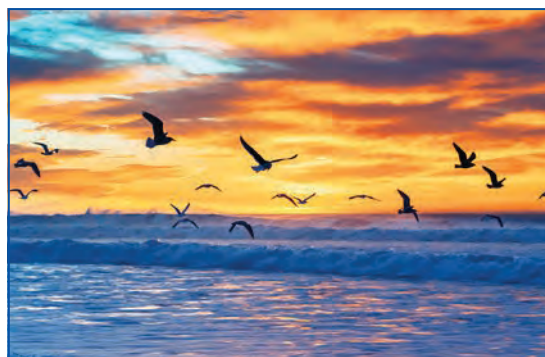
- Taking notes on paper was about 25 percent faster than typing them on a digital tablet or smartphone.
- Using a digital pen to handwrite notes on a screen was also slower than writing on paper.
- Study participants remembered the information better after taking notes on paper, compared to note-taking on an electronic device.

During the study, researchers used brain scans to measure brain activity. And they found that compared to writing or typing on a tablet or phone, writing on real paper is a more complex, more advanced activity that triggers more brain activity.

In other words, handwriting on paper gives your brain a bit more exercise. And it makes it easier to remember whatever it was that you wrote.

Technology can be helpful in many ways. But we shouldn't forget how we did things before we became inundated with electronic devices.

Nature's Sounds Enhance Health



Unless you live in a remote rural area, you're all too familiar with the sounds of modern life: cars, trucks, sirens, and sometimes construction or other industrial noise. As you may well suspect, the sounds of nature are more therapeutic.

A team of researchers from this country, Canada, and New Zealand looked at what types of sounds enhance health. They reviewed 18 studies and found natural sounds reduce stress, blood pressure, heart rate, and pain.²

They also looked at the effects of different types of natural sounds and found that water sounds produce the greatest overall health benefits. For relieving stress, bird sounds came out on top.

These researchers also looked at 221 sites in 68 of our national parks and found that in many areas, natural sounds were mixed with noise made by humans. Bird sounds could be heard in only 42 percent of the sites, and water sounds were heard in about 23 percent of sites.

The national parks that were farthest from urban areas, especially those in Alaska, Hawaii, and the Pacific Northwest, had the most natural sounds. The researchers concluded that preserving natural parks with natural soundscapes benefits human health, as well as the environment.

It's always good to spend some time in nature. If you can't get away to a remote area where nature's sounds have been undisturbed, look for the most natural settings you can realistically visit when you want to relax and recharge.

Resistance Exercise Reduces Diabetes Risk

A new study of men who were at high risk for type 2 diabetes has found a very specific benefit of weight training: It enhances insulin sensitivity. The reverse, insulin resistance, is a root cause of type 2 diabetes.

The study, at the Washington University School of Medicine

in St. Louis, tested a one-hour weight-training regimen on ten men who



were obese and at high risk for diabetes. At their next meal, participants had significantly improved insulin sensitivity.³

A healthy, low-carb diet is essential for reducing diabetes risk. Weight training is another valuable tool for staying in good health.

1 Umejima, K., et al. "Paper Notebooks vs. Mobile Devices: Brain Activation Differences During Memory Retrieval." *Front Behav Neurosci*. 2021 Mar 19;15:634158. 2 Buxton, R.T., et al. "A synthesis of health benefits of natural sounds and their distribution in national parks." *Proc Natl Acad Sci U S A*. 2021 Apr 6;118(14):e2013097118. 3 Bittel, A.J., et al. "A Single Bout of Premeal Resistance Exercise Improves Postprandial Glucose Metabolism in Obese Men with Prediabetes." *Med Sci Sports Exerc*. 2021 Apr 1;53(4):694-703.

Q&A

Q: How do you feel about the COVID-19 vaccines? I'm concerned that these vaccines are still experimental. — Arden J.

A: Both my husband and I were vaccinated as soon as we were eligible, which was earlier than many other people because we are healthcare providers. I recommend that we should all get vaccinated as soon as possible.

Some COVID-19 survivors are suffering from long-term, debilitating fatigue, impaired brain function, and other damage that was initially not obvious. A friend of ours had a mild case, and then months later got a chest x-ray for another reason — and doctors found lung damage from COVID!

Being vaccinated helps not only you; it also helps to stop the spread of COVID-19. Many infected people experience no symptoms, or they don't experience symptoms until a few days after becoming infected. Meanwhile, they can infect other people. Vaccination stops this cycle.

The idea that the COVID-19 vaccines are experimental is not accurate. Although approval was so quick, the COVID-19 vaccines that are available *did* go through *all* the usual steps of testing, just like every other vaccine in the past.

One other thing helped in the case of the Pfizer and Moderna vaccines, the first two to be approved. They use mRNA technology that is new in vaccines but has

been under development for decades in the pharmaceutical world. And it could be harnessed very quickly for these two vaccines.

Steps Before Approval

These are the steps that, like all vaccines, the available COVID-19 vaccines have gone through:

- Initial FDA review of data before allowing human trials.
- A Phase I trial with 20 to 100 people.
- A Phase II trial with hundreds of people.
- A Phase III trial with tens of thousands of people.

These are the reasons the usual process could be completed in record time:

- The genetic sequence of the virus that causes COVID-19, SARS-CoV-2, could be identified right away because of earlier research into SARS viruses in the same family of bugs.
- Clinical trials were designed to test dosages, safety, and effectiveness in stages that partially overlapped, instead of being run consecutively with long periods between the completion of one step and the beginning of the next one.
- Because the pandemic was so widespread when vaccine testing began, it was easy to find study participants and test efficacy. In normal circumstances, it can take months, and sometimes years, to identify and enroll enough eligible participants in just one trial of any drug or vaccine.

- A joint investment of private companies and the U.S. government enabled ramp-up of manufacturing facilities at an unprecedented pace. And the FDA began inspecting facilities while clinical trials were ongoing, instead of waiting for some time after all trials were completed and reviewed — as would usually be the case.

In other words, the only shortcuts were in time that would normally elapse between steps: while participants were being recruited; in between trials for administrative work and more recruitment of participants; after each trial before regulators reviewed data; and time to set up manufacturing facilities after review and approval by the FDA.

The decision to get vaccinated rests with you. I urge you to consider the safety and health of others as well as your own.

Do you have a question for Dr. Marlene?

Send your health-related questions to drmarlene@naturalhealthconnections.com. Please include your first name and the initial of your last name. Although she cannot answer each question directly, Dr. Marlene will select a few in each newsletter and will address other questions and concerns in articles in future issues. Answers are intended for educational purposes only and should not be viewed as medical advice. If you need help with your subscription or have questions about Primal Health supplements, email support@primalhealthlp.com or call 877-300-7849.