



SOS for IBS and SIBO

Imagine always being on the lookout for the nearest restroom. Having to change plans at the last minute because of flareups. Rushing off to the toilet in the middle of a meeting. Feeling bloated and crampy after eating. Dealing with embarrassing gas and occasional accidents.

This is life for many of the tens of millions of people who have irritable bowel syndrome (IBS). IBS is considered to be a functional disorder, meaning that no abnormalities are found on endoscopies and other common diagnostics. As a result, IBS is sorely misunderstood. To this day, some doctors dismiss it as “all in your head” and prescribe antidepressants.

These guys need a refresher course in anatomy. Bloating, abdominal pain, cramping, diarrhea, constipation, and alternating episodes of both are not in your head. And in recent years, researchers have identified several treatable causes.

Digestion 101

The intestines are a long hollow tube extending from the stomach to the anus. Food is broken down in the stomach by acids and enzymes into a thick, creamy fluid called chyme, which is moved into the upper part of the small intestine (the duodenum) and further broken down by bile and pancreatic enzymes.

Propelled by wavelike muscular contractions of the intestinal walls (peristalsis), it passes through the 20 feet of the small intestine where most nutrient absorption takes place and into the five-foot long large intestine (colon). As peristalsis inches the undigested waste along the colon, water is removed and stool is formed and

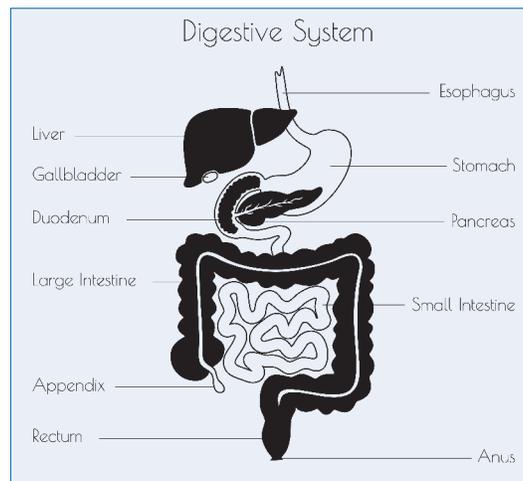
stored until nerves in the rectum signal nature’s call.

But there’s a lot more going on in the large intestine besides processing waste. Trillions of microorganisms reside there, and this microbial community—known as the gut microbiome—has an enormous influence on our health and well-being. Metabolizing nutrients in undigested fiber and resistant starch (beans, grains, etc.), gut bacteria produce vitamins (K

and B12) and short-chain fatty acids. They crowd out harmful bugs, protect the colon, play a key role in immunity, and even affect sleep, mood, and weight.

Gut Bacteria: Good/Bad News

A diverse, balanced microbiome is essential for optimal health, but that balance can be disrupted by infections, toxins, poor diet, stress, and antibiotics that mow down beneficial bacteria along with the bad. This can lead to a whole host of problems, including overgrowth of *Candida* and other microorganisms that provoke bloating, gas, diarrhea, constipation, and other IBS symptoms. That’s why pre- and probiotic foods and supplements are so important.



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Unfortunately, gut bacteria can also end up where they don't belong. When we talk about the gut microbiome, we're mostly talking about bacteria in the large intestine. The small intestine harbors far fewer microorganisms, as most are killed by stomach acid, pancreatic secretions, and bile. Sometimes, however, altered intestinal motility, infections, low stomach acid, anatomical irregularities, or other problems allow gut bacteria to take hold in the small intestine. This is called small intestine bacterial overgrowth (SIBO), and it has emerged as a leading cause of IBS.

It is now believed that up to half of IBS sufferers have SIBO—and that eradicating the offending bacteria can dramatically improve symptoms.

How Do You Know It's SIBO?

Bloating after eating (“looking five months pregnant”) is a strong indication you might have SIBO. Then there's pain, diarrhea, and/or constipation. Brain fog, anxiety, and depression are also common complaints. Who wouldn't feel lousy if they had to deal with all of this? Some patients report that symptoms first occurred after an intestinal infection. They got over the initial illness, but things never quite got back to normal. Others link onset to post-abdominal surgery or long-term use of Prilosec, Prevacid, or other acid-suppressing proton pump inhibitors (PPIs). Older people are also more susceptible, as stomach acid secretion declines and motility problems increase with age.

The best diagnostic for SIBO is a breath test, done in a doctor's office or with a home kit. Gut bacteria metabolize carbohydrates through a fermentation process that produces hydrogen and methane gases as byproducts. In the presence of undigested carbohydrates in the small intestine, these bacteria go on a feeding frenzy, producing high volumes of gas—some of which

is absorbed in the blood and delivered to the lungs for exhalation. Therefore, hydrogen or methane in exhaled breath is indicative of bacterial fermentation.

After a day of diet restrictions and an overnight fast, you take a “challenge dose” of a carbohydrate drink, then blow into a tube to collect the exhaled gases at specific intervals over three hours. Analysis of hydrogen and methane levels at various times indicates where bacterial fermentation is taking place. If it's in the small intestine, SIBO is diagnosed.

A Thousand-Dollar Drug or Botanicals?

SIBO has created a paradigm shift in our understanding of IBS. Finally, there's a treatment target—and Big Pharma has pounced on it. Xifaxan (rifaximin) is a heavily promoted FDA-approved antibiotic for IBS-D (diarrhea predominant). A two-week course is pretty effective, but it provides an average of only 10 weeks of relief from diarrhea. Plus, it's very expensive, and insurance doesn't always cover it. One course costs as much as \$1,000, and many patients require more than one.

Antibiotics have their place, but most doctors pull out the prescription pad before trying safer, much cheaper, and equally effective natural antimicrobials. Johns Hopkins researchers gave patients with breath test-confirmed SIBO either Xifaxan or a combination of herbal supplements for four weeks. When they were retested, 34 percent of participants who had taken the drug had a negative breath test, compared to 46 percent of those taking the supplements. Furthermore, half of the people who had poor results with Xifaxan responded to a follow-up course of herbal therapy.

Another problem with Xifaxan and most other antibiotics is that they kill the hydrogen-producing bacteria that cause diarrhea but can't touch the methane-producing *Archaea* microorganisms linked

DR.WHITAKERS



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with constipation. Therefore, other drugs such as neomycin are also prescribed for IBS-C (constipation predominant), with varying degrees of success.

Gastroenterologist Kenneth Brown, MD, came up with an herbal supplement (Atrantil) containing extracts of quebracho trees, horse chestnut, and peppermint leaf that block *Archaea's* ability to produce methane. A pilot study reported that 88 percent of patients with IBS-C who had failed antibiotics, probiotics, and other herbal therapies had improvements in bloating, constipation, and quality of life after taking Atrantil.

Allison Siebecker, ND, whose website siboinfo.com is the most comprehensive information source I've come across, has success with 30-day courses of high doses of two or three single herbal antimicrobials. Her favorites are berberine, a traditional remedy for diarrhea (as well as a powerful therapy for managing blood sugar), and allicin-rich garlic supplements for constipation.

Preventing Recurrences

You can't just take an herbal or prescription antimicrobial, sit back, and expect permanent results without addressing what caused SIBO in the first place. This might require getting off PPIs or supplementing with hydrochloric acid to normalize stomach acid. Structural abnormalities of the intestine should also be ruled out. And you will need to make some lifestyle changes.

Peristalsis, as noted earlier, moves things through the digestive tract—and not only when you eat. These undulating muscle contractions also occur between meals and every 90 minutes or so during sleep. This phenomenon, called the migrating motor complex (MMC), moves remaining undigested food into the large intestine and prevents the accumulation of bacteria in the small bowel. Because the bulk of this “house cleaning” occurs at night, it's important to get plenty of uninterrupted sleep. Eating halts the MMC, so try to stretch the time between meals and snacks to four to six hours. Stress also inhibits it; do your best to

My Recommendations

- ▶ The site siboinfo.com has a wealth of information on diets, supplements, and other treatment strategies.
- ▶ Talk to your doctor about hydrogen/methane breath testing for SIBO. Visit aerodiagnosics.com to learn more.
- ▶ Recommended antimicrobial supplements include berberine 400–500 mg 2–3 times plus high-allicin garlic (Allimax Pro 450 mg once or twice a day) for about a month. Another option is combination products like Biotics Research's FC Cidal and Dysbiocide (2 caps of each, twice a day for 4 weeks); Metagenics' Candibactin-AR and Candibactin-BR (same dosing); or KBS Research's Atrantil (2 capsules 3 times a day for 10–20 days, depending on symptoms). Lay off pre- and probiotics during treatment.
- ▶ L-glutamine dosage is 5 g (a heaping teaspoon) 3 times a day for 8 weeks. Take Iberogast as directed at bedtime.

chill out. Finally, consider taking Iberogast, a well-studied liquid herbal extract from Germany that has a number of proven digestive benefits, including enhancing intestinal motility.

Diet is also important. Therapeutic diets aim to avoid foods that provoke symptoms, and for SIBO that means cutting back on carbohydrates. Popular regimens such as the low FODMAPS diet and variations of the Paleo diet that specifically restrict fermentable carbs (sugars, starches, soluble fiber) won't cure SIBO or IBS, but they most definitely improve symptoms. Similar intestinal problems can also be provoked by food allergies or sensitivities, as anyone with lactose or gluten intolerance knows, so work on identifying potential triggers with an elimination diet.

I'll close with a plug for L-glutamine, an amino acid that serves as an energy source for intestinal cells. In a clinical trial involving patients who developed IBS after an intestinal infection, 80 percent of those who took 5 g of L-glutamine three times a day for eight weeks had dramatic improvements in diarrhea, bloating, pain, and quality of life. Only six percent in the placebo group reported significant improvements.

Centuries ago, Hippocrates said, “All diseases begin in the gut.” That may not be altogether true, but it certainly is of these common complaints—and tackling SIBO may just be your ticket to better health.

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Dear Dr. Whitaker

Q *I have had three bleeding sores on my tongue over the past month. Although they each lasted less than a week, they were very painful. I have had canker sores before but never on the tongue. Could it be cancer? — J.B., Virginia*

A Cancer is unlikely since the sores healed quickly. My best guess is that they are either blood blisters or canker sores, which can appear on the tongue and are usually caused by small abrasions or stress. If you continue to get these sores, see your doctor to rule out other causes.

Q *I attended my nephew's wedding recently, and the bridesmaids spent the day together getting their hair and makeup done. There was also a nurse from a mobile IV therapy spa on hand to give the girls IVs. The idea was that IV vitamins, electrolytes, and fluids restore hydration and provide energy and recovery after long flights, all-night partying, and hangovers to get the wedding party ready for the festivities. I was shocked to hear about mobile IVs. What do you think? — A.P., Texas*

A Although I am aware that small IV clinics (“hydration lounges or spas”) are increasing in popularity, I too am surprised to hear about mobile IV services. As long as these businesses, which are cropping up in several urban areas, are staffed by medical professionals and infusions are administered by RNs, I see no problem. IV fluids, vitamins C and B12, and magnesium and other minerals do restore hydration and enhance recovery, energy, and overall

well-being. However, my recommendation would be to get IVs from a knowledgeable physician, one with training in the use of infusions of targeted nutrients as medical therapies. To find doctors who incorporate IV therapies in their medical practices, visit acam.org or call 800-532-3688.

Q *Have you ever written about what to do after prostate cancer surgery? I recently had my prostate removed and would like to know if there are any supplements or other things you would recommend. Thanks in advance. — D.S., via email*

A The best advice I can give is to tend to your overall health. A 2018 review of studies on complementary therapies for prostate cancer prevention and treatment confirmed the protective effects of an antioxidant-rich, plant-based diet. Cruciferous vegetables, tomatoes, soy, pomegranate, and fish are particularly beneficial, while animal fats, including dairy, may increase risk. Physical activity improved outcomes in men with existing cancer, and those who maintained a normal weight were less likely to have a recurrence. Research-backed supplements for reducing risk or slowing progression include omega-3s, vitamin D3, modified citrus pectin, pomegranate (Pomi-T), and an herbal blend of inflammation-curbing herbs (Zyflamend). Do follow up with doctor as directed, as recurrence after prostatectomy is not uncommon. Depending on your age and how fast the PSA rises, this may or may not require further treatment.

 Read more at drwhitaker.com, and send your own questions to drwhitakerquestions@drwhitaker.com.

New Online: Breakfast—Weight Loss or Weight Gain?

When I wrote *The Mini-Fast Diet* 10 years ago, my recommendation to skip breakfast was not well received. Breakfast was considered to be the most important meal of the day. Although the idea of forgoing breakfast is still controversial, the tide is turning, especially in regard to weight loss. A 2019 *BMJ* review of 13 clinical trials concluded, “Caution is needed when recommending breakfast for weight loss in adults, as it could have the opposite effect.”

More and more research supports the benefits of intermittent fasting (going longer periods without eating), and the easiest way to do it is to extend your overnight fast by skipping breakfast. Subscriber Harry W. wrote, “It is easily implemented, simple, logical, and inexpensive. After seven months, I’ve reduced my weight from 210 to 196, mostly around the middle. I have always had a regular physical routine and eaten a well-balanced diet so the only difference was eliminating breakfast.” Skipping breakfast isn’t for everyone, but if you’re trying to lose weight, why not give it a try? Intermittent fasting has also been shown to improve insulin sensitivity, reduce inflammation, and may even increase lifespan.



Works for Me...

► **Cancer** My husband Ivor and I have been going to Dr. Munoz at his San Diego Clinic for prevention for the past 26 years. When Ivor was diagnosed with non-Hodgkin's lymphoma in 2015, we went to Dr. Munoz. Within three months Ivor was in remission. If you or anyone you know is diagnosed with cancer, or wants to prevent a recurrence, or wants to prevent cancer and other chronic illnesses, I highly recommend Dr. Munoz and his San Diego Clinic (just a few minutes over the border in Tijuana).
— Rita Starr, Florida

Although I have no direct experience with Dr. Munoz, I have known Rita Starr for decades and can attest to her knowledge and integrity. To learn more about this treatment center, visit info.sdiegoclinic.com or call 619-213-0026.

► **Massage** Most people think of massage as an expensive indulgence, but I truly believe it improves my health and well-being. In addition to helping my chronic lower back pain, massages relax and

calm me down, reduce anxiety, and help me sleep better. They do not have to be overly expensive if you get a package deal. By the way, I am not a massage therapist, just a grateful beneficiary of this underappreciated therapy. — J.M., Georgia

► **Nausea** To relieve nausea, cut some thin slices of ginger and place them in boiling water. Allow to steep for a few minutes (at least until the water is not too hot to drink). Remove the ginger or pour through a strainer into a mug. Ginger tea and ginger lozenges/chewables also do the trick. — Meryll H., Maryland

► **Wasp Sting** It's officially warm weather: I've been stung by a wasp. But my sister-in-law cured me with good old baking soda and water. — F.G., via Facebook

It is indeed that time of year. Other remedies readers have passed on over the years for reducing pain and itching from insect bites include applying a paste of unseasoned meat tenderizer and water, soaking in apple cider vinegar, and dabbing on a little honey, toothpaste, or calamine lotion. The suggestion that wins the prize for the most unusual, however, is taping a copper penny over the sting.

 Do you have a Health Tip to share? We'd love to hear it! Send it to worksforme@drwhitaker.com.

Health Hack: Kids, Sunlight, and Nearsightedness

Nearly 42 percent of school-age children in America and 80–90 percent of kids in several Asian countries have myopia. This rapid rise in nearsightedness (poor distance vision) is attributed to two factors. One is an increase in “near-work” activities such as reading, writing, and especially the use of smartphones, TV, computers, video games, etc. The other is a decrease in time spent outdoors. The solution? Set limits on screen time—and boot your kids outside. Exposure to sunlight is protective, and children who spend more time outdoors are less likely to develop myopia.

Bug Off!

Bug-borne diseases are on the rise. How can you protect yourself? True or False?

- A) Vitamin B1 wards off mosquitoes.
- B) Citronella candles keep bugs at bay.
- C) Essential oils work as well as chemical repellents.
- D) DEET is toxic and should never be used.



Answer:

All are false. Unfortunately, this benefit of B1 hasn't held up in recent research. Citronella candles don't help much: oscillating fans are a better option. Studies find that natural products are good for 30–60 minutes compared to 7+ hours for 25–30% DEET, 20% Picaridin, and 30% oil of lemon eucalyptus (not as natural as it sounds). Per EPA data, DEET is safe when used as directed; toxicity claims are way overblown.

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Notable Quote

“If you hear a voice within you say ‘you cannot paint,’ then by all means paint and that voice will be silenced.”

— Vincent Van Gogh, Dutch painter, 1853–1890

No computer? Mail your question or health tip to *Health & Healing*, 6710-A Rockledge Dr., Ste. 500, Bethesda, MD 20817.

Scents and Sensibility

I have a chronic condition. I first noticed it as a preteen, and I've had many flare-ups since, especially during hot weather. Although there is no cure, it can be managed and outbreaks rapidly reversed. It isn't painful, but it can be discomforting, not only for me but for those around me.

Don't worry about my health. You probably have this condition yourself—it's commonly known as BO. Almost everyone has occasional bad body odor. It's caused by the byproducts of bacteria breaking down proteins in sweat from the apocrine glands, which are particularly abundant in the armpits.

Body odor is determined to a certain extent by genetics. Some people sweat excessively; others merely "glow." A small percentage of people with a particular gene variant have no BO at all while an even rarer variant causes a strong fishy smell. Hyperhidrosis (abnormal sweating), trimethylaminuria (fish odor syndrome), and other metabolic disorders are medical problems that merit professional attention. However, run-of-the-mill sweat-related BO after physical activity or overheating is entirely normal. But sometimes it's a real stinker.



How Do You Know?

My wife and two of her friends still talk about a flight they took a few years ago when they were seated by a young man who had horrible BO. It was so bad that they asked the flight attendant, who also noticed it, if they could change seats. But it was a full flight so they ended up having to take turns sitting next to him. The guy, however, was oblivious.

Truth is, we aren't good at smelling ourselves. We adapt quite rapidly to odors and, after a short exposure, they barely register. This is called olfactory fatigue or adaptation, and it's the reason you don't notice the particular smell—pleasant or unpleasant—of your house, your perfume, and your own body.

Do you want to know how you smell to others? Ask someone who will give you an honest answer, or sniff your clothes after you've taken them off. If they reek of BO (or perfume, aftershave, scented deodorant, etc.), just remember that the smell is much stronger to everybody else. On the other hand, you may learn

that you smell just fine. A fair number of people have a pathological preoccupation with the mistaken belief that they smell bad, which can lead to depression, anxiety, and social withdrawal.

The Sweet Smell of Sweat

What you eat has some effect on body odor. Eat enough garlic or curry, for example, and the odor will exude from your pores. Drink too much alcohol, and you'll smell like a brewery. Go on a strict low-carb diet, and as your body shifts into ketosis (fat burning), your sweat and breath will have a rather disagreeable fruity odor. Conversely, studies suggest that eating a lot of fruits and vegetables and less red meat is associated with more pleasant body odor (as perceived by third-party sniffers).

What you wear may also have some bearing. Cotton soaks up sweat but takes a long time to dry, giving bacteria more time to do its dirty work. Synthetics move moisture away from the skin for easier evaporation, but they tend to retain odors, even after washing. (Polyester is notorious for this.) Linen absorbs and releases sweat, and wool is moisture-wicking as well as naturally antimicrobial.

Good hygiene and deodorant, however, are the best remedies for controlling BO. Although there is no proof that aluminum compounds in antiperspirants cause cancer or other problems, more research is needed to settle the controversy over their safety, so I suggest sticking with deodorant. If you're concerned about chemicals in deodorants, check out natural brands, or try coconut oil, baking soda, cornstarch, or essential oils. Many people use these instead of deodorant and claim they effectively curb BO. These alternatives make particular sense for those who don't sweat or smell much, as research suggests that deodorants, and especially antiperspirants, can actually stimulate odor-causing bacteria.

Fight BO with Probiotics

A novel approach for tackling BO has emerged in recent years. The human microbiome isn't limited to the gut. An enormous variety of bacteria and other microorganisms inhabit every nook and cranny, including our skin.

Belgian microbiologist Christopher Callewaert (aka Dr. Armpit) maintains that our armpits are a microbial battleground with multiple species vying for dominance. BO results when bacteria that have malodorous byproducts overwhelm those with an inoffensive smell. He also maintains that—much as oral probiotics help repopulate the gut with beneficial bacteria—we can influence this outcome by giving the good guys a leg up. His team has found that transferring benign bacteria to stinky armpits crowds out the odor-causing bacteria and eliminates BO. They are now testing a probiotic spray that could be used as a deodorant.

AOBiome has already come up with a probiotic spray (AO+ Mist by Mother Dirt, available online). The active ingredient is *Nitrosomonas eutropha*, an ammonia-oxidizing bacterium that restores balance to the skin microbiome, neutralizes odors in sweat, and improves overall skin health. I haven't tried it and it's a bit pricey, but it gets great reviews—and inventor David Whitlock claims he hasn't showered in over 10 years! This ammonia-oxidizing bacterium also produces nitric oxide, a signaling molecule that increases blood flow and inhibits inflammation. Clinical trials testing its benefits for acne, eczema, and other skin problems are underway.

What the Nose Knows

Although we go to great lengths to mask our body odor, it serves a purpose. Humans have an incredibly acute sense of smell. A study published in *Science* estimates that we can discriminate a trillion “olfactory stimuli.” (Don't ask me who counted them.) But because these stimuli are transmitted from the olfactory bulb in the forebrain directly to the amygdala and hippocampus (areas of the brain involved in emotion and memory), they bypass the thalamus, which relays conscious

information to the cerebral cortex. Therefore, much of the information we glean from smelling is subconscious.

In other words, smells influence us to a much greater degree than we are aware of. Everyone has a unique olfactory fingerprint, and it is an essential aspect of nonverbal communication. Mothers can distinguish the smell of their own babies, and newborns can ID their moms' scent shortly after birth. Neuroimaging studies show that we can also pick out close genetic relatives by smell.

Odor plays a significant role in sexual attraction and mate selection. Scientists believe that one's olfactory signature provides information about health, genetic compatibility, and thus suitability as a partner. Researchers have found that genes involved in immune function are perceived in body odor and that we are attracted to individuals who are not too closely related—which may be an evolutionary adaptation for providing offspring with greater, more robust genetic diversity.

Our noses also give us insight into others' emotional states. Studies suggest we can “smell” sexual attraction and kinship (that instant rapport we feel with some people) as well as aggression, fear, and stress (the creepy feeling that hits us in uncertain situations). Pay attention. Sometimes your nose knows best.

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Stinky Feet

Your feet have 250,000 eccrine sweat glands—the highest concentration of anywhere in the body. Although sweat from eccrine glands doesn't produce the characteristic smell of BO, the warm, moist environment inside our shoes and socks is bacteria heaven, and as we all know, feet can get pretty stinky.

Going barefoot or wearing sandals are obvious though not always practical solutions, so do the next best thing by wearing moisture-wicking socks (merino wool is a good choice), rotating your shoes every couple of days so they can dry out, changing shoe liners, and, if possible, washing your shoes.

(Most athletic shoes are machine washable.) Gold Bond foot powder is a favorite for keeping feet dry. Other home remedies include soaking the feet in Epsom salts, kosher salt, diluted vinegar, baking soda, and even Listerine! Some people claim that supplemental zinc helps and although I can find no supporting research, I do recommend a daily multivitamin with 30 mg of zinc.

If none of these solutions help, talk to your doctor. Persistent foot odor could be due to an underlying medical cause, and excessive sweating may be treated with Botox, prescription creams, and other therapies.

Innovations in Wellness Medicine

Vitamin C for Diabetes

Although berberine, chromium, and cinnamon top the list of supplements for managing blood sugar, I want to remind everyone dealing with diabetes or metabolic syndrome to make sure you're also including hefty doses of vitamin C in your daily regimen. Diabetes is associated with lower blood levels of vitamin C and other antioxidants, and this can have adverse effects on multiple aspects of health—including blood sugar control.

Elevated blood sugar and insulin increase the production of free radicals. In response, antioxidants are rallied to neutralize them and protect against oxidative damage. Unfortunately, antioxidant stores can be depleted by accelerated demands and often run low. This is a primary reason why diabetes takes such a toll on the eyes, nerves, kidneys, and blood vessels—and why I recommend copious amounts of supplemental antioxidants, including the body's premier water-soluble antioxidant, vitamin C. Australian recently researchers demonstrated that vitamin C also improves blood sugar control. They found that when participants with type 2 diabetes took 500 mg of vitamin C twice a day for four months, the blood sugar spikes that typically occur after meals decreased by an average of 36 percent, and blood pressure by an average of 7/5 mm Hg. They concluded by proposing vitamin C as an adjunct therapy for improving glycemic and blood pressure control in type 2 diabetes.

Lutein for Brain & Heart Health

If you're taking a vision supplement, it probably contains lutein and zeaxanthin. These carotenoids are renowned for protecting the eyes, as they accumulate in the macula and absorb up to 90 percent of harmful wavelengths of light. But that's not all. Lutein also reduces chronic low-level inflammation, which is a feature of cardiovascular disease and other conditions. Swedish researchers studying patients with coronary artery disease found that the higher the blood concentration of lutein, the lower the level of IL-6 (a marker of inflammation).

Lutein plays a role in brain health as well—from infancy (it is present in breast milk and advanced baby formulas) through old age. Significantly lower concentrations of lutein have been detected in the brains of older people with mild cognitive impairment, compared to those with normal function. And placebo-controlled clinical trials found that supplemental lutein improved scores on tests of cognitive function. Do your eyes, brain, and entire body a favor: Eat more leafy greens and supplement with lutein 20–40 mg and zeaxanthin 4–8 mg.

Did You Know?

- Dozens of drugs, including antibiotics, NSAIDs, statins, and antihistamines, increase sun sensitivity and risk of skin reactions.
- Curcumin was shown in a 2019 clinical trial to improve asthma control in children and adolescents.
- The layer of fat under the skin of fatty fish like salmon—which most people don't eat—is the richest source of omega-3s.
- The common food additive titanium dioxide is linked with intestinal inflammation and adverse effects on gut bacteria.
- Studies link heavy coffee consumption with a reduced risk of melanoma and other skin cancers.
- One in five people over age 60 have low vitamin B12 levels, and millions of them are undiagnosed.
- Cutting calories by 15% was shown to reduce weight, oxidative stress, fasting insulin, and other markers of health and longevity.
- Fasting is no longer considered necessary prior to blood tests for cholesterol and triglycerides.
- The FDA has approved a \$2.125 million drug: a gene therapy for a rare but deadly muscle-wasting disease in babies.
- A recent survey found that one in three teens wakes up at least once during the night to check their phones.
- Clothing treated with Permethrin, used in combat uniforms and hiking gear, provides defense against ticks and other insects.
- NASA is now inviting tourists to the International Space Station—at a cost of \$58 million per flight and \$35,000 a night for lodging.

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