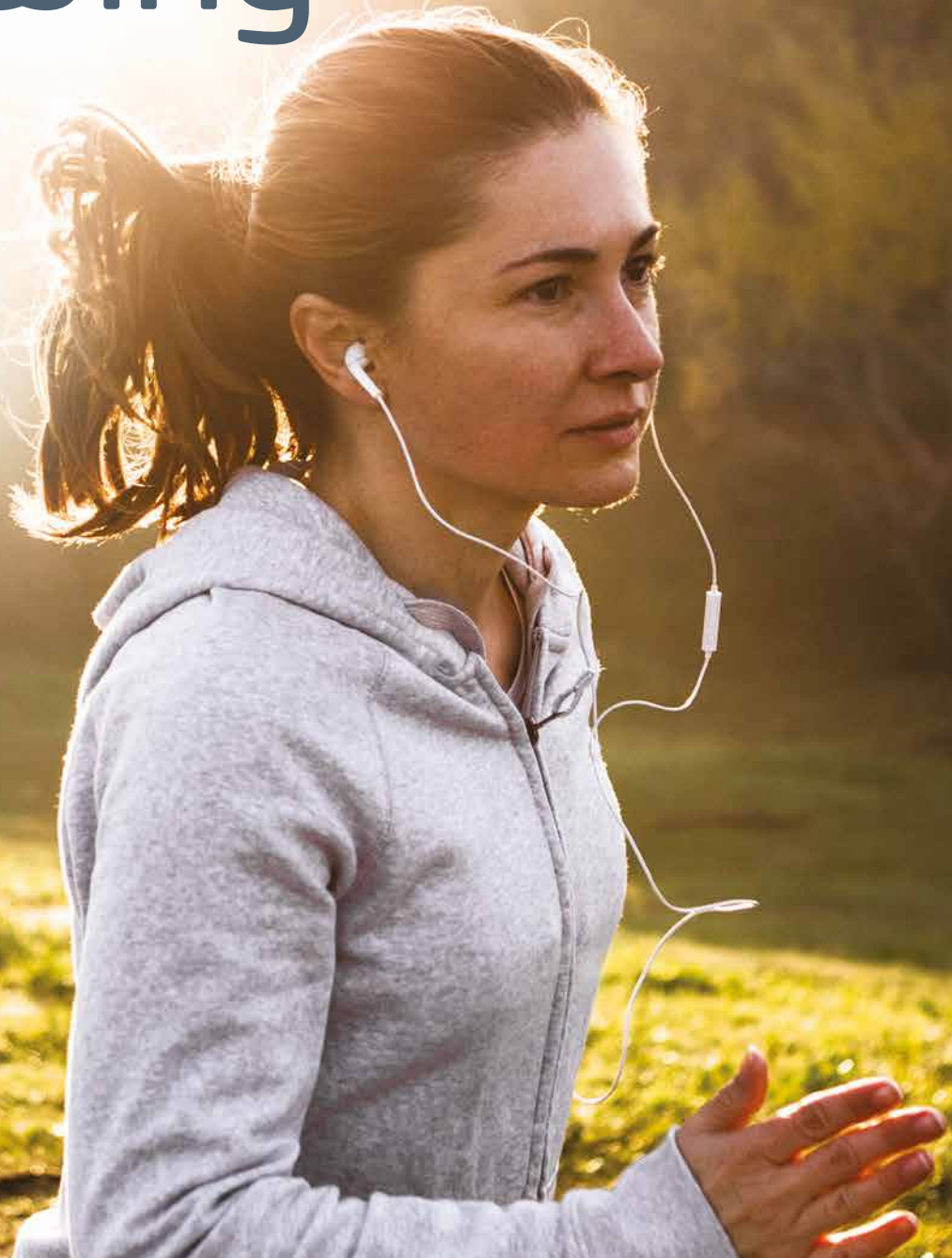


March/April 2019

The art of growing young[®]

Getting Back into the
Groove of Exercise

Fitness



In this Issue...

Boost Productivity
with More Breaks

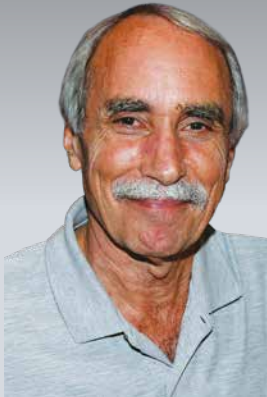
Fasting—Is It Good
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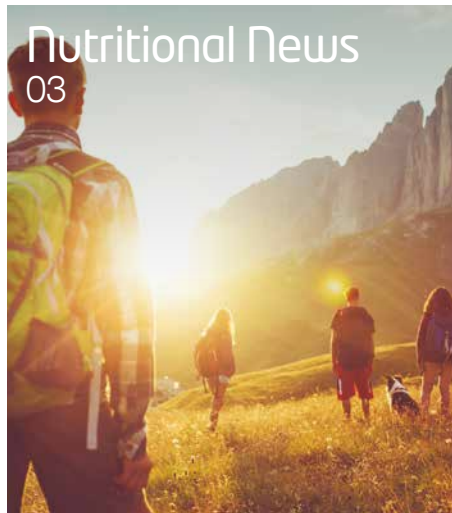


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Which Is Better for My Health?

There's a certain kind of question that I get asked a lot. It goes something like this: "Which is better for me, option A or option B?" People want to know what will help them the most, running or walking? Eating three big meals a day or four to five smaller meals a day? Eating whole-fat dairy products or low-fat dairy products? Or any dairy products? And on and on.

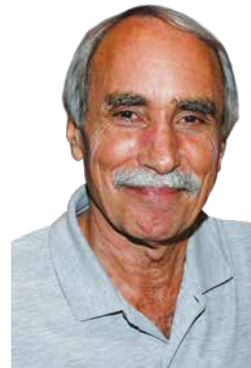
Unless the question is obviously between a healthy and an unhealthy choice, along the lines of getting active versus sitting on the couch every evening, I invariably tell the person that only they can answer the question. That's because if you want to know what is better for your body, the person you have to ask is yourself.

We are all unique individuals with unique needs. There are broad, overarching guidelines we should all follow—eat a generally healthy diet of whole foods with lots of the best, most nutritious fresh fruits and vegetables, optimally local, organically grown, and in season; perform sufficient regular physical activity; keep a positive focus and healthy frame of mind; and maintain strong social connections—but all the details of what constitutes a truly healthy life can vary greatly from person to person.

So, if someone asks what's a better exercise for them, running or walking, it might seem like it should be easy to pick one or the other—but I really can't answer for them. They have to decide which activity they enjoy more, which they are more likely to continue over the long term, which fits into their current lifestyle, and which their body responds to the best. The answer might not be the same for each of those questions. They will have to weigh the pros and cons of each, trying each out and getting feedback from their body and mind to make their decision. Also, keep in mind that optimal diet, exercise, and recreational activities change and evolve over our lives. The diet that works for me at 70 is different from what worked for me at 40.

Your health, my health, and everyone else's is highly dependent on our own unique needs, likes, limitations, and preferences—and most importantly, what we like and enjoy, and what helps us feel good over time. The real key is to find foods, activities, people, and experiences that we enjoy doing or consuming. Then focus on how that enjoyment is also creating a healthier, happier life. This will make the decision-making process easier because we will naturally be attracting more of these healthy, positive things into our lives.

The next time you are trying to choose between running or walking, fruits or vegetables, tea or water, going to sleep early or staying up late, or any of the thousands of other health-related choices you make in a day, take a moment to reflect on your own personal needs and desires as you focus on them...and yourself. And think about how you think you will feel about yourself after making your choices. Let your intuition guide you in all things, and you will quickly see that deciding on the options available that are the healthiest for you comes naturally. Staying totally aware of these kinds of things moment by moment is where your power, health, and creativity come from.



Dwight L. McKee M.D.

Dwight L. McKee
Scientific Director

Nutritional News



Nature is powerful medicine.

Since the 1950s, rates of hay fever, asthma, and food allergies have increased exponentially around the world—possibly due to imbalances in the gut. Researchers have now linked that increase to a decrease in time spent outdoors in nature. One of the best ways to help avoid these issues, which range from mildly annoying to life-threatening, is to get outdoors more often. This is one more way that fostering a lifelong love of the outdoors can help keep us healthy.³



Turn back the clock on your heart with exercise.

Seniors who exercise and have exercised regularly for most of their lives can maintain the same heart, lung, and muscle fitness of healthy people who are at least 30 years younger. Regular exercise can give a 75-year-old the same cardiovascular health as a 40-year-old, according to new research published in the *Journal of Applied Physiology*.¹

Focus and Breathing Sharpen our Minds

Years of anecdotal evidence showing that breathing and focus improve cognitive health have finally been proven to be true with hard science. Researchers saw that focused breathing affects the levels of a chemical messenger in the brain called noradrenaline, which is naturally released when we are challenged, curious, excited, or focused. Noradrenaline also helps the brain grow new connections, keeping our minds young and sharp as we age.⁵



Fight Inflammation with Yogurt

The healthy bacteria found in yogurt (and in similar probiotic-rich fermented foods) may be helpful in countering inflammation. A study published in the *British Journal of Nutrition* found that when people regularly consume yogurt, they experienced reduced biomarkers of chronic inflammation.⁴

Feeling thirsty? Drink more water; you may sleep better too.

A recent study from Penn State found that adults who sleep only six hours a night have a higher chance of being dehydrated than adults who get eight hours of sleep. The researchers believe that if you wake up tired after a night of less than eight hours of sleep, drinking more water may help you feel better and less sluggish and sleep better and longer.²



¹ Gries, Kevin J., et al. "Cardiovascular and Skeletal Muscle Health with Lifelong Exercise." *Journal of Applied Physiology* 125, no. 5 (2018): 1636-645. doi:10.1152/jappphysiol.00174.2018.

² Rosinger, Asher Y., et al. "Short Sleep Duration Is Associated with Inadequate Hydration: Cross-Cultural Evidence from US and Chinese Adults." *Sleep*, zsy210, <https://doi.org/10.1093/sleep/zsy210>.

³ Cregan-Reid, Vybar. "Allergies: The Scourge of Modern

Life?" *The Guardian*. October 20, 2018. Accessed December 16, 2018. <https://www.theguardian.com/society/2018/oct/20/allergies-the-scourge-of-modern-living-hay-fever-ashtma-eczema-food-peanuts-dairy-eggs-penicillin>.

⁴ Pei, R., et al. (2017). "Low-fat Yogurt Consumption Reduces Biomarkers of Chronic Inflammation and Inhibits Markers of Endotoxin Exposure in Healthy Premenopausal Women: A Randomised Controlled Trial." *British Journal of Nutrition*, 118(12), 1043-1051. doi:10.1017/S0007114517003038.

⁵ Melnychuk, Christopher, et al. "Coupling of Respiration and Attention via the Locus Coeruleus: Effects of Meditation and Pranayama." *Psychophysiology*. 2018;55:e13091. <https://doi.org/10.1111/psyp.13091>.

Getting Back into the Groove of Exercise

Have you been out of an exercise routine for a while? Have you thought about how good you felt—both physically and mentally—when you were consistently active? Have you felt like you lost your stride and are having trouble getting back into it? Even the most ardent exerciser takes breaks or stops being active for a period of time. But for most average folks, we might see exercise as something we really get into and are dedicated to for a while, and then we lose our gusto.

Whether it's due to injury, lack of time, or even financial cost constraints, it can be difficult to start up again. Here are some ideas on how to get motivated to get back into the groove of regular physical activity.

Perhaps the first thing to do is to really reflect on what makes you stop exercising. We often blame it on time constraints, but is that really it? Often we say we are too busy, but really we don't make it a priority—and often with good reason! It is hard to make exercise a priority when it is too cold or too hot outside or when life places demands on us and we would rather sleep that extra half hour each morning than exercise; it's normal. Perhaps you had a small injury and getting back to working out makes you worried you'll reinjure yourself. For many women who have had babies, the idea of losing the postpartum weight is daunting alone, much less finding the time and energy to exercise with little children to take care of. But figuring out why you stopped exercising in the first place is about getting real with yourself as to what motivates you and what stands in the way.

Aside from evaluating what deters you, identify what excites you. What type of activity do you enjoy doing? Perhaps you enjoyed running in your younger years, but lately going to a dance class or swimming feels more energizing. If you are doing something you enjoy, you're more likely to stick with it. Try to steer clear of the "should" of exercise and stick with what you want to do, what makes you feel good while doing it and afterwards as well.

Set a S.M.A.R.T. goal. This stands for specific, measurable, attainable, relevant, and time-bound. Make your initial exercise routine goal specific.

Instead of saying you want to "get back to the gym," choose instead to go to the gym Monday, Wednesday, and Friday of each week for 45 minutes each day. This example is both specific and measurable. Make sure that something like that is truly something you can do (attainable). Losing 20 pounds in a month is not possible for most people and may be unhealthy for some. Aim for initial goals that you know you can accomplish with just a bit more effort. Analyze if the fitness goal is relevant to you. Make sure going to the gym truly works for your fitness needs. If you want to run a 10K race, perhaps the gym isn't as useful to you and instead joining a running group at your local park would be more relevant. Finally, "time-bound" means that you establish milestones and deadlines. If you join a dance class for a 10-week session, make the time-bound aspect of your goal to attend at least eight or nine of the classes. If you endeavor to walk more, set a goal for a month at a given distance or duration and then analyze how you did over the month.

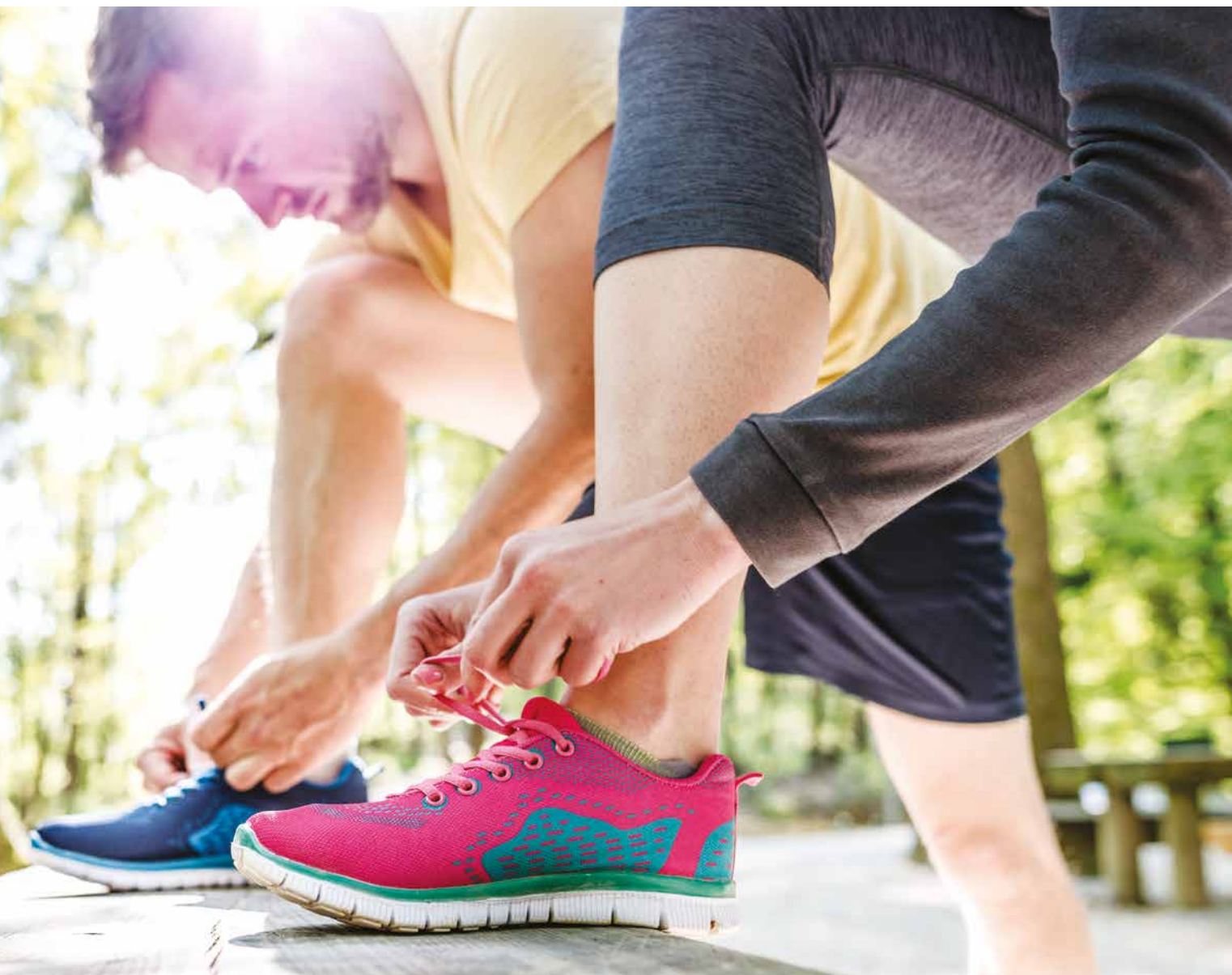
Another tip for getting back into the swing of exercising again is to start slowly. Jumping back into things at the rate of your peak performance may result in discouragement at best and injury at worst. If you were able to walk three miles in an hour before, perhaps give yourself the grace to walk that amount in an hour and a half initially. If you could swim 10 laps at the pool, start by swimming a third of that.



Give yourself grace and space to not be perfect. It may be a good idea to do a couple weeks of full-body strengthening. Try lunges, crunches, and reverse push-ups on a chair for even 15 minutes a day, just to get your whole body tuned up.

Be accountable to someone, be it a workout partner, your spouse, or a personal trainer—external motivation is helpful.

Don't give it up again. Even after you get back into it and think you'll never give up exercise again, life happens. An injury may put you on the sideline, you'll get busy at work, or you'll have to take care of more personal responsibilities and have less time. The key is to do anything in order to keep at it. Remember that it shouldn't be all or nothing. Jogging one mile is better than nothing.



Doing a mini-workout in your bedroom for 20 minutes before getting ready for work is better than eliminating exercise completely.

If your knees are comfortable, you can always use stairs instead of elevators or escalators (though you may have to look for them), park far away from where you are going, and perform other daily habits to increase the amount of overall physical activity that you get.



If you've had an injury, especially if you are older, it may be worthwhile getting a referral to a physical therapist who can prescribe specific exercises to speed recovery and to protect the injured area long term, as well as coach you on what kinds of exercise you can do without the risk of slowing healing or causing an old injury to flare up. You can pare down or scale back, but don't forfeit fitness completely—use it or lose it! Even maintaining healthy cognitive function into old age is greatly helped by maintaining lifelong physical activity.

Color Therapy

What is your favorite color? Are there certain colors you are drawn to during different times in your life? There may be a reason why you are attracted to specific colors. A new movement in the wellness world is the concept of color therapy—it's called chromotherapy.





While it is an emerging trend in the West, its basis comes from ancient philosophies. The theory of chakras stems from Hinduism and the Veda and originates in the 10th century BC. It was also found in the early teachings of Tibetan Buddhism and Chinese Taoism but is also believed to have been utilized in the religious practices of ancient Greeks and Egyptians.

The philosopher Carl Jung believed that color was a key to the subconscious. He helped introduce the concept to the Western world and to New Age medicine, particularly as it pertains to psychology.¹

Chromotherapy focuses on how color can improve our health and wellness. It's the art and science of utilizing colors to change body vibrations to promote wellbeing and congruence.

The theory is that each color possesses frequencies of a specific vibration, and each vibration is related to different physical or emotional symptoms.²

The science of color is being used by marketers and companies all the time to influence our choices. Architects and designers utilize color, along with light and texture, to promote positive feelings associated with buildings and space. Similar to our sense of smell, colors can carry memories and feelings.

RED

Fiery and passionate, red is a powerful color that emanates confidence. It also connotes aggressiveness, intensity, energy, movement, and stimulation. Red is bold and assertive. In fact, studies have found it to correspond to success and attainment.³ It represents excitement, love, and strength. Conversely, red is associated with anger, rage, and lust. From the chakra teachings, red is the color of the root chakra (the first chakra). It stands for strength and rootedness in the Earth. That rootedness signifies security, endurance, foundation, and sustenance from the energy of the Earth. On a physical level, it represents inflammation in the chakra teachings.

¹ John A. Grimes (1996). *A Concise Dictionary of Indian Philosophy: Sanskrit Terms Defined in English*. State University of New York Press. pp. 100–101. ISBN 978-0-7914-3067-5.

² Azeemi, Samina T. Yousuf, and Mohsin Plaza. "A Critical Analysis of Chromotherapy and Its Scientific Evolution." *Evidence-Based Complementary and Alternative Medicine*, vol. 2, no. 4, 2005, pp. 481–488, doi:10.1093/ecam/neh137.

³ Elliot, Andrew J., et al. "Color and Psychological Functioning: The Effect of Red on Performance Attainment." *Journal of Experimental Psychology: General*, vol. 136, no. 1, 2007, pp. 154–168, doi:10.1037/0096-3445.136.1.154.

⁴ Minguillon, Jesus, et al. "Blue Lighting Accelerates Post-Stress Relaxation: Results of a Preliminary Study," *Plos One*, vol. 12, no. 10, 2017, doi:10.1371/journal.pone.0186399.

ORANGE

Another color that exudes confidence is orange which is associated with success, bravery and sociability. Like red, it feels powerful, but orange carries with it a softness and friendliness. It can increase energy and improve moods. Orange is the color of the second chakra, which is the sacral chakra. It is associated with sentiment, imagination, sensuality, and sexuality.



YELLOW

Yellow is an uplifting color that summons sanguinity. It promotes hopefulness and optimism. Think of the classic smiley face icon—it's a yellow face. Yellow conjures up feelings of happiness. However, yellow's less appealing associations are jealousy and cowardice. Yellow is the color of the third chakra, located approximately in the abdomen and the lower torso. This chakra denotes intellectuality, cognition, and willpower.

GREEN

When you think of the color green, ecology and nature may come to mind—and with good reason. Green represents nature as well as healing, peace, and tranquility. It transmits a feeling of calm and harmony. The adverse connotation of green is envy. Green is the heart chakra (the fourth chakra). It represents love, relationships, and connectedness.

BLUE

Similarly to green, blue conjures up feelings related to nature, but in the water form. It represents trustworthiness, assurance, amity, and allegiance. The cooling nature of blue brings calmness. While digital blue light from screens during evening hours or prior to sleep is not beneficial to our psychological wellbeing (or physical wellbeing, for that matter), natural blue hues in lighting can help ease anxiety.⁴ The negative side of blue is that it is associated with depression and sadness. In the chakra system, blue is the color of the throat chakra (the fifth chakra). It symbolizes truth, expression, and communication.





PURPLE

We associate the color purple with luxury or royalty. During biblical times, purple represented the ruling class. Purple, a hue close to blue, creates calm and can help with pain. Conversely, purple sometimes represents moodiness. The purple (or indigo) chakra, the sixth chakra, relates to the concept of the third eye. It represents intuition and wisdom. The seventh chakra is also purple, and is sometimes represented as white, and is associated with higher consciousness, spirituality, and interconnectedness.

WHITE

The color white of course contains all the other colors, a perfect blend of them. White light is often associated with spiritual energies and experiences.

Color can affect our moods, thoughts, and feelings. Here are some ideas for utilizing color therapy.

Wear red while exercising. The idea is that the color will promote more of a go-getter attitude with exercise. Red may be associated with improved performance.



Wear a darker blue when going to a job interview. The blue conjures up a sense of loyalty and trustworthiness and also has a calming effect.

Wear yellow during rainy or cold seasons. The color brings a sense of cheerfulness during darker times. Choose an orange outfit when you are hosting a party, as it conveys a sense of friendliness.

When you are trying to relax, look at green images. Or more specifically, if you are meditating or doing a more mindful and slower yoga practice, choose a green mat. This will encourage you to enter into a calmer state. Or more specifically, get out into nature and go to a place with lots of green trees, bushes, or grass.

Consider the color of your home decoration. Perhaps outfit your guest bedroom with purple to convey a sense of luxury. Or use relaxing hues such as greens or blues for your bedroom, to promote calmness and sleep.

While the science of color therapy is fairly soft, there is some fun to be had noticing how color affects our experiences. Try and experiment with different colors in your life to see how they influence you.

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Boost Productivity with More Breaks

Decision fatigue is a phenomenon in which the need to make frequent decisions throughout your day makes it harder and harder to maintain your reasoning ability. If you've ever felt too exhausted to choose between two dinner options after a long day at work, you may have been experiencing decision fatigue.¹

Decision fatigue is common and entirely avoidable. Small breaks throughout the day will let your brain relax and recharge. This will not only help you avoid indecision; it will also help you make better decisions—something your boss and family will thank you for.

Breaks also help with another cognitive issue faced when working on the same project too long. If you've ever found yourself slowly having a more difficult time when doing the same task over and over again, you're not alone. In a phenomenon similar to decision fatigue, repeatedly performing the same task causes us to lose focus, which in turn reduces performance.

Researchers have dubbed this phenomenon "vigilance decrement," which is a fancy way of saying losing your attention to detail. However, the issue isn't your attention span, rather it's your brain telling you that it needs a break. It doesn't take long for your brain to recharge itself.

A quick trip to the watercooler, a walk around the office, or a visit to the restroom is often all it takes to bring your attention and productivity back where you want it.²

There are lots of ways to take a break. None of them are right or wrong as long as the activity allows you to disengage from the task at hand and take a few much-needed breaks away from the problem.

What works for you may not work for your coworkers. There are certain activities, however, that can be especially beneficial during break time.

When you find yourself unable to overcome a challenge at work or to think creatively enough to solve a problem, take a break and go for a walk. Researchers have found that walking boosts creativity. The effect lasts longer than the walk itself.³ You may find yourself stumbling upon the perfect solution to a problem when you take a quick walk around the block or through the park. Because the effects continue, once you are back at your desk, you may find that the ideas keep flowing.

Choosing where to walk can also affect the way your answers come. A separate study looking at the ways we are affected by our environments discovered that our brains act differently depending on where we choose to walk. Going for a stroll in nature tends to produce a calming effect on the mind. Walking along city streets tends to wake the brain up and spur engagement.⁴ Both are valid ways to take a break when you need to clear your head. Being mindful of what you may experience can help you decide the place for that break.



Breaks can be long or short. Longer breaks such as vacations are just as important as short breaks. Unfortunately, many people feel too stressed to use all their vacation time because they don't realize how important it is to get away—really away, without checking emails or calling in. Vacations where workers completely shut off communication with the office help people replenish their psychological resources that are depleted during long office hours. Energy, mood, cognitive function—these all come back better when you are able to take actual vacations.⁵

¹ Danziger, Shai, Jonathan Levav, Liora Avnaim-Pesso. "Extraneous Factors in Judicial Decisions." *Proceedings of the National Academy of Sciences* Apr. 2011, 108 (17) 6889-6892; DOI: 10.1073/pnas.1018033108.

² Ariga, Atsunori, and Alejandro Lleras. "Brief and Rare Mental 'Breaks' Keep You Focused: Deactivation and Reactivation of Task Goals Preempt Vigilance Decrements." *Cognition*, 2011;

DOI: 10.1016/j.cognition.2010.12.007.

³ Oppezzo, Marily, and Daniel L. Schwartz. "Give Your Ideas Some Legs: The Positive Effect of Walking on Creative Thinking." *Journal of Experimental Psychology: Learning, Memory, and Cognition* 40, no. 4 (2014): 1142-152. doi:10.1037/a0036577.

⁴ Aspinall P., Mavros P., Coyne R., et al. "The Urban Brain:

Analysing Outdoor Physical Activity with Mobile EEG" *Br J Sports Med* 2015;49:272-276.

⁵ Fritz, C., Ellis, A. M., Demsky, C. A., Lin, B. C., & Guros, F. (2013). "Embracing Work Breaks: Recovering from Work Stress." *Organizational Dynamics*, 42(4), 274-280.



Productivity pitfalls don't just happen in the workplace. Keeping up with chores at home and family duties often presents the same problems. Often, we feel as though we have to keep charging ahead at home in order to make the most out of the time we have with our families. But it's possible that by not taking care of yourself, you are not making the most out of that time together. Think quality over quantity.

For some people, especially for those who work at home where it's easy to do, a short power nap during some part of the day when fatigue is noticeable can be a healthier and more effective pick-me-up than reaching for a cup of coffee.



Even five to 15 minutes—if it's easy for you to fall asleep and wake up—can make a tremendous difference to your productivity, your health, and your happiness.

It's not selfish to take a few small breaks for yourself throughout the day. Just like in the office situations, the breaks don't have to be long. Although there are certainly benefits to long, indulgent breaks from life where you cater to yourself, a few minutes alone with a good book or a relaxing cup of tea in a quiet corner of the house can leave you feeling refreshed and ready for anything life brings you.



Whey protein

Whey protein is a popular form of milk-based protein that is derived from the cheese- and yogurt-making process. Cow's milk has two types of protein—casein, which comprises 80 percent of milk's proteins, and whey, which makes up the other 20 percent (human milk contains 60 percent whey). When you open your yogurt container and see the little puddle of milky liquid on the top, you are looking at whey. For years the cheese and yogurt industry viewed whey as a by product or even a waste component of the production process.



Once the liquid whey is processed into the familiar powder product, its taste is often blended with flavorings such as chocolate, vanilla, and strawberry.

When buying a whey protein powder, be sure to analyze the list of ingredients to make sure that there aren't unnecessary sugars added to the mix.

Whey is processed primarily in three different ways. Whey concentrate contains about 70 percent proteins, contains some milk sugars, and tends to be the best tasting. Whey isolate has the highest concentration of protein, at about 90 percent, but lacks the additional nutrition components found in whey concentrate. Whey hydrolysate is predigested and more easily absorbed by the body, so it may be better for those who sometimes feel bloated when taking whey.¹

Whey is considered a complete protein because it contains the nine essential amino acids. Some amino acids are formed by your body and others you need to get from food sources. Many plant-based proteins contain some, but not all, amino acids and are therefore not considered complete proteins. Whey is a protein that contains branched-chain amino acids. Branched-chain amino acids help with muscle growth and aid in weight loss.

Whey protein can aid in muscle formation when coupled with exercise and can easily add a couple dozen grams of protein to your daily intake. Once popular mainly among bodybuilders, now whey is particularly popular for vegetarians who are seeking additional protein intake. If you are already taking in sufficient daily amounts of protein from healthy sources—such as fish and grass-fed or lean meats—whey protein might be redundant. But again, lactovegetarians may find whey to be appealing since it is meat-free, a complete protein, and very low in lactose, which two-thirds of the world can't digest (due to lactose intolerance). Most commonly, people add it to smoothies, mixing it in with fruit and vegetables. People with severe lactose intolerance should choose whey protein isolate, which contains less than one percent lactose.

Eating protein-rich foods is an excellent way to control excessive eating. Protein-rich foods help with satiation and help prolong that feeling of fullness. Since whey protein is protein-rich, many people find it helpful to eat it in the morning with breakfast to control overeating the rest of the day. Others find it beneficial to have a midafternoon smoothie with whey protein in order to bridge the

hunger gap between lunch and dinner. In general, however, as mentioned in the article on fasting in this issue, eating fewer meals closer together in the day is generally better for health, for most people.

Beyond protein, whey also may have blood pressure-protective qualities.

Whey contains peptides called lactokinins that have natural angiotensin-converting-enzyme inhibitor properties, which even form a specific class of antihypertensive medications.²

Whey protein also can help with blood sugar control as it helps stimulate the secretion of insulin.³ Again, however, remember that we want to minimize the events in the day that stimulate secretion of insulin. Insulin is required for life and is required for getting glucose into our cells to use for energy, but too much insulin is not a good thing.

Aside from adding it to the obvious fruit and vegetable smoothies, unflavored whey protein can be blended in with creamy soups and sauces to add additional protein. Whip naturally vanilla-flavored whey powder into Greek yogurt for a protein-packed breakfast. Or you can mix it in with whole grain bread dough or add it to pancake or waffle mix. You can also use whey protein in other baked products to add a healthy boost. Try making black bean and almond flour brownies with the addition of whey protein. The possibilities are endless!

¹ Boirie, Y., et al. "Slow and Fast Dietary Proteins Differently Modulate Postprandial Protein Accretion." *Proceedings of the National Academy of Sciences*, vol. 94, no. 26, Dec. 1997, pp. 14930–14935. doi:10.1073/pnas.94.26.14930.

² Fitzgerald, R. J., and H. Meisel. "Lactokinins: Whey

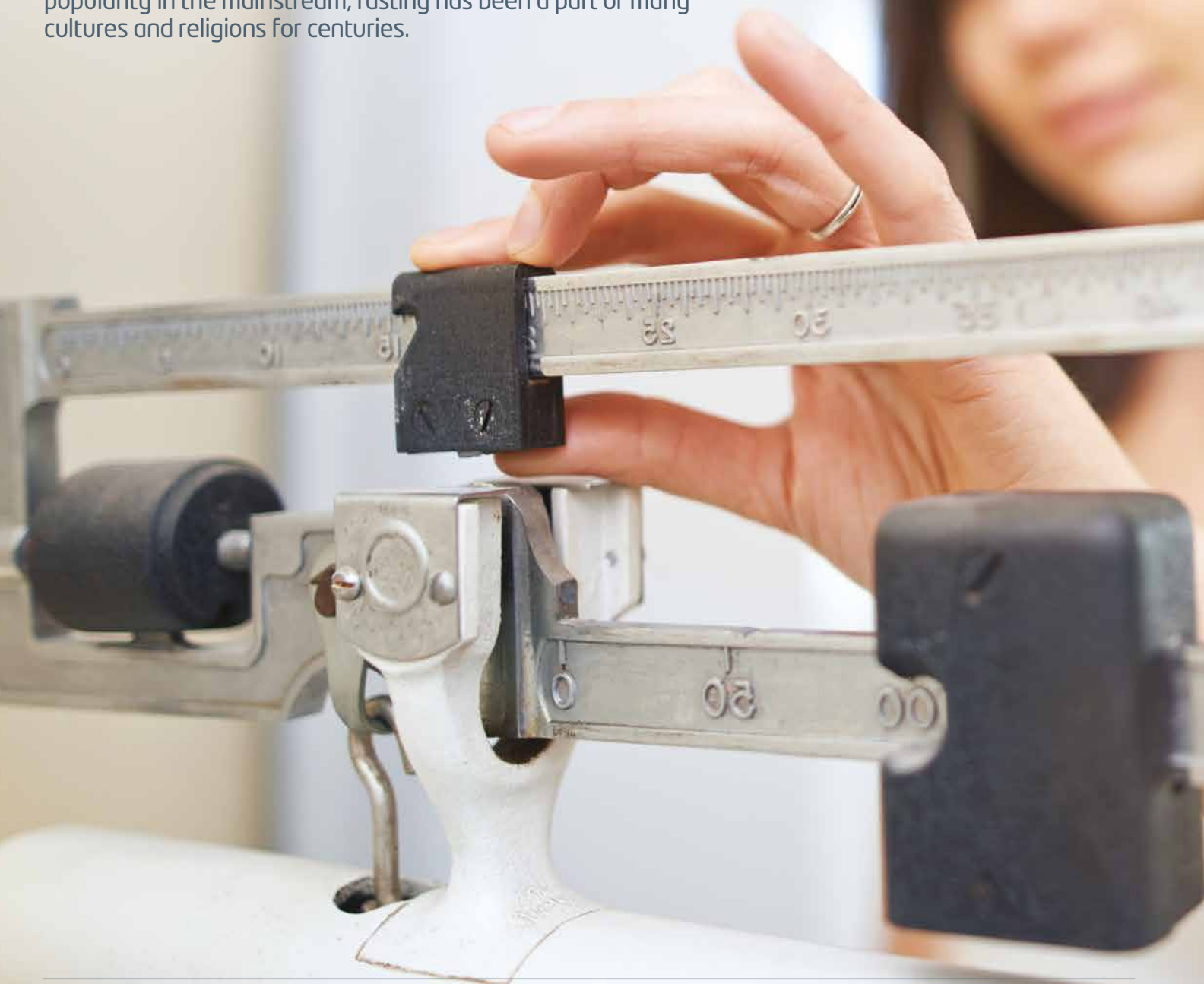
Protein-Derived ACE Inhibitory Peptides." *Nahrung/Food*, vol. 43, no. 3, 1999, pp. 165–167. doi:10.1002/(sici)1521-3803(19990601)43:3<165::aid-food165>3.0.co;2-2.

³ Frid, Anders H., et al. "Effect of Whey on Blood Glucose and Insulin Responses to Composite Breakfast and Lunch

Meals in Type 2 Diabetic Subjects." *The American Journal of Clinical Nutrition*, vol. 82, no. 1, 2005, pp. 69–75. doi:10.1093/ajcn.82.1.69.

Fasting—Is It Good for You?

Simply defined, fasting is abstaining from food for a given period of time. While it is currently trendy among celebrities and gaining popularity in the mainstream, fasting has been a part of many cultures and religions for centuries.





Aside from religious purposes, many people fast for weight loss. In virtually all of the Blue Zones (areas of the world where people routinely live into their 90s and even past 100 in good health), researchers have studied and written about what the people there eat, what their physical activity and lifestyle are like, and other factors. What has not received as much attention is that in virtually all of the Blue Zones, periodic fasting (usually part of religious practice and tradition) has been widely practiced for many centuries. Certain health conditions have also been studied and deemed to benefit from fasting.

RULES

Here again, there are not definitive regulations about fasting for health purposes (religious rules apply differently). Some fasts forbid even water. Most often, fasts allow for water and sometimes other drinks, such as coffee, tea, and herbal teas. Now commonly called a “cleanse,” some fasts allow for fruit or vegetable juices during the period of not eating. The type of fast that is best for you is the one that you see results from (depending on your goal) and the one that you tolerate the best.

HUNGER

There is no doubt—you will be hungry! That noted, with fasts that last longer than two or three days, hunger diminishes greatly after the first few days, once your metabolism shifts to using ketones (derived from the breakdown of body fat). In fact, fasting isn’t for everyone, particularly type 1 diabetics, who require careful medical supervision to safely fast. While dieting means abstaining from certain types of foods or cutting calories, fasting is complete abstinence from food for a set amount of time. Some people’s experience with fasting makes them feel like they obsess about food or overeat when the time comes to break the fast. Others find fasting is helpful in recognizing hunger or food-obsessed thoughts.

RELIGION

Nearly every major religion—Christianity, Buddhism, Hinduism, Islam, and Judaism—integrates fasting into their religious practices. During the month of Ramadan (which changes every year according to the Islamic religious calendar), Muslims fast from sunrise to sunset. They break their fast at sunset with large celebratory meals. This results in food intake being restricted to about a two-hour period per day.

SAFETY

Most often healthy adults can participate in fasting safely. Teenagers and children should not fast (unless medically supervised for obesity), and neither should pregnant or breastfeeding women. In fact, fasting (or following a ketogenic diet) during pregnancy can be quite harmful to the developing fetus. People who have a history of eating disorders (such as anorexia or bulimia) should also refrain from fasting. Your body requires nutrition to function and thrive. If your baseline weight is relatively healthy and you’re not taking diabetes medications, then you can safely participate. It is always best to discuss it with your health care provider first.

WEIGHT LOSS

Very often people think of fasting as a way to lose weight.¹ It should not be confused with starvation. Instead, think of it as a way to reset the body’s hunger needs and metabolism. The theory is that fasting teaches your body not only to burn glucose for its energy but also to learn to burn fat from the body’s stores. Fasting has been shown to be more effective in cutting body fat than general calorie restriction.² However, you should not fast and then eat in excess or more unhealthfully when you break the fast.

BLOOD SUGAR

Fasting has been shown in studies to be an effective action in controlling the body’s blood sugar. Scientists suspect this is due to the way the body changes over to metabolizing glucose during periods of calorie deprivation. In fact, research demonstrates that fasting was more effective in type 2 diabetes prevention than simply restricting calorie intake and was more beneficial to those living with diabetes in regard to their fasting blood sugar.^{3,4}

That said, those with diabetes should consider fasting only in close collaboration with their health care provider, due to the danger of reaching very low blood glucose (which can be life threatening if not corrected), coupled with the importance of correctly managing diabetes medications.

INFLAMMATION

Fasting—be it intermittent, alternate-day, or another type—may decrease inflammation in the body. When scientists analyzed inflammatory laboratory values of people observing Ramadan, they found that the anti-inflammatory markers were optimized during the monthlong fasting period.^{5,6}

¹ Tinsley, Grant M., and Paul M. La Bounty. “Effects of Intermittent Fasting on Body Composition and Clinical Health Markers in Humans.” *Nutrition Reviews*, vol. 73, no. 10, 2015, pp. 661–674, doi:10.1093/nutrit/nuv041.

² Varady, K. A. “Intermittent versus Daily Calorie Restriction: Which Diet Regimen Is More Effective for Weight Loss?” *Obesity Reviews*, vol. 12, no. 7, 2011, doi:10.1111/j.1467-789x.2011.00873.x.

³ Barnosky, Adrienne R., et al. “Intermittent Fasting vs Daily Calorie Restriction for Type 2 Diabetes Prevention: A Review of Human Findings.” *Translational Research*, vol. 164, no. 4, 2014, pp. 302–311, doi:10.1016/j.trsl.2014.05.013.

⁴ Arnason, Terra G., et al. “Effects of Intermittent Fasting on Health Markers in Those with Type 2 Diabetes: A Pilot Study.” *World Journal of Diabetes*, vol. 8, no. 4, Apr. 2017, p. 154, doi:10.4239/wjcd.v8.i4.154.

⁵ Faris, “Moez Al-Islam” E., et al. “Intermittent Fasting during Ramadan Attenuates Proinflammatory Cytokines and Immune Cells in Healthy Subjects.” *Nutrition Research*, vol. 32, no. 12, Dec. 2012, pp. 947–955, doi:10.1016/j.nutres.2012.06.021.

⁶ Aksungar, Fehime B., et al. “Interleukin-6, C-Reactive Protein and Biochemical Parameters during Prolonged Intermittent Fasting.” *Annals of Nutrition and Metabolism*, vol. 51, no. 1, 2007, pp. 88–95, doi:10.1159/000100954.



HEART DISEASE

Hypertension (high blood pressure) and hyperlipidemia (elevated cholesterol) both contribute to poor cardiovascular health and put people at risk for stroke and heart attacks. Routine fasting has been proved to be useful for lowering the risks associated with heart disease.⁷ The theories on how this works specifically are still being explored. Some experts believe the self-discipline associated with routine fasting can be transferred to a more healthful lifestyle in general.

COGNITIVE HEALTH

Most studies that look at brain health benefits of fasting have been performed on animals. However, there is some promising potential in how fasting can affect cognition, particularly as it pertains to Alzheimer's disease.⁸ Scientists believe this has to do with how aging affects certain neurological pathways, and that fasting and calorie restriction slow down aging pathways.

⁷ Horne, Benjamin D., et al. "Usefulness of Routine Periodic Fasting to Lower Risk of Coronary Artery Disease in Patients Undergoing Coronary Angiography." *The American Journal of Cardiology*, vol. 102, no. 7, Oct. 2008, doi:10.1016/j.amjcard.2008.05.021.

⁸ Halagappa, Veerendra Kumar Madala, et al. "Intermittent Fasting and Caloric Restriction Ameliorate Age-Related Behavioral Deficits in the Triple-Transgenic Mouse Model of Alzheimer's Disease." *Neurobiology of Disease*, vol. 26, no. 1, 2007, pp. 212–220, doi:10.1016/j.nbd.2006.12.019.

⁹ Fung, Jason. *The Obesity Code*. Greystone Books, 2018.

¹⁰ Longo, Valter. *The Longevity Diet*. Avery/Penguin Random House, 2018.

HOW TO FAST

How one chooses to fast has infinite variables. The first step is to review fasting with a health care provider who is open to fasting or has knowledge of its health benefits. After that it is helpful to look at your lifestyle and determine how you'd like to participate. Religious fasting most often takes place over one to three days but sometimes up to several weeks or a month. With all fasting, it is imperative not to overcompensate later by eating ferociously during nonfasting times.

Intermittent fasting involves cycling through periods of eating and not eating. The 16:8 fast involves not eating for sixteen hours (which may include sleeping times) and eating over the course of eight hours. During a 5:2 fast, the participant eats normally for five days and for two days after that eats 500 calories a day (for basic body function). Alternate-day fasting entails consuming only water and 500 calories of high-protein food for one day and then the next day eating whatever and whenever you'd like. Eat-stop-eat fasts include one or two 24-hour periods of fasting in a given week. Spontaneous meal skipping might be an introductory way to explore fasting. It is simply what its name indicates—you skip a meal every so often.

Simply not eating after 6 pm and delaying breakfast as long as possible provides fasting benefits. Some people have gotten significant health benefits from routinely restricting all their eating to a two-hour period of the day and drinking only water for the rest of the time, using this practice periodically, or even all the time. The unfortunately widespread practice of frequent small meals and all-day snacking results in chronically higher insulin levels and insulin resistance. Insulin resistance is a major contributing factor to obesity and to all the chronic illnesses that come with prolonged obesity. Processed foods and those high in sugar also fail to trigger the satiety hormone, known as ghrelin, resulting in a chronically increased appetite.⁹

Recently, fasting-mimicking diets have been developed, which involve low-protein and low-carbohydrate, high-micronutrient intake for five days periodically. The research of Valter Longo, PhD, at the University of Southern California, has suggested significant anti-aging benefits from a five-day fasting mimicking diet every three months. He also found significant improvements in weight loss, type 2 diabetes, and a variety of chronic inflammatory and autoimmune problems when this fast is used monthly until desired results have been obtained, and then quarterly for maintenance.¹⁰



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Food supplements should not be used as a substitute for a varied diet.



Honey

So many of us love sweets. From cakes to cookies, candy to chocolate—sweet foods can be a delightful indulgence. Biologically speaking, in preindustrial civilizations, sweet foods were rare and it took a lot of work to gather or cultivate. Therefore, our ancestors of yesterday couldn't satisfy their sweet tooth as easily as people in today's modern world can.

Nowadays, with such convenient access to processed sweets, refined sugars get a bad rap—and with good reason, as they are low in micronutrients, and most refined sugars stimulate a strong insulin response, which is associated with increased fat storage. However, not all sugars are created equal. Less-processed sugars like date sugar, maple syrup, and honey can be utilized sparingly and with more benefits than refined sugars.

Particularly notable are the benefits of honey. While honey has only trace amounts of vitamins and minerals, its nutritional power comes in the form of antioxidants.¹

Flavonoids and organic acids contribute to the antioxidative qualities. High-quality, darker honey, as well as buckwheat and Manuka honeys, specifically, have more antioxidants.²

Honey has anti-inflammatory properties. When used conservatively, as an alternative to refined sugar, honey may be a better option for those with, or at risk for, diabetes. Perhaps due to the antioxidative element and the anti-inflammatory properties, honey has been shown to decrease the inflammation and infection blood marker C-reactive protein.^{3,4}

Keep in mind that it is still a sugar and will still influence the overall blood glucose as well as insulin levels, but it will do so to a lesser extent than a similar quantity of refined sugar.

Honey may also be heart healthy due to its polyphenols, perhaps specifically its flavonoids. People who are at risk for coronary disease have seen improvements with the consumption of high-quality honey. It is believed that the mechanisms of action include reducing the risk of blood clots, dilating and relaxing constriction of the body's vasculature, and inhibiting the oxidation of "bad" cholesterol (LDL).⁵

Certain kinds of skin conditions, as well as some wounds and burns, benefit from the antibacterial and anti-inflammatory properties in honey.

Some studies have demonstrated that honey can help heal partial-thickness burns compared to standard treatment practices.

Additionally, there is some evidence that suggests it can assist in healing infected surgical wounds.⁶ It also can treat the dry, flaky skin patches caused by psoriasis.⁷

Children older than one year can safely and effectively take honey as a nighttime cough suppressant.⁸ Honey coats the throat, which can help decrease the irritation from the postnasal drip and mucus associated with upper respiratory infections. It's important to remember that honey should never be given to a baby younger than 12 months of age because of the risk of botulism. Honey is also good for the environment. When you buy high-quality honey, particularly honey local to your area, you are supporting the conservation of bees.

While honey has great health properties, it still is a high-carbohydrate, calorie-dense food. It is sweeter than typical sugar or corn syrup, so you need less of it for an equivalent sweetening effect. That said, decreasing sugar is important for your health. When sugar is necessary for a certain recipe or if you simply cannot have your daily cup of tea without some sweetening, a small amount of honey is a good option.



¹ Ferreira, Isabel C.f.r., et al. "Antioxidant Activity of Portuguese Honey Samples: Different Contributions of the Entire Honey and Phenolic Extract." *Food Chemistry*, vol. 114, no. 4, 2009, pp. 1438–1443, doi:10.1016/j.foodchem.2008.11.028.

² Gheldof, Nele, et al. "Buckwheat Honey Increases Serum Antioxidant Capacity in Humans." *Journal of Agricultural and Food Chemistry*, vol. 51, no. 5, 2003, pp. 1500–1505, doi:10.1021/jf025897t.

³ Al-Waili, Noori S. "Natural Honey Lowers Plasma Glucose, C-Reactive Protein, Homocysteine, and Blood Lipids in Healthy, Diabetic, and Hyperlipidemic Subjects: Comparison with Dextrose and Sucrose." *Journal of Medicinal Food*, vol. 7, no. 1,

2004, pp. 100–107, doi:10.1089/109662004322984789.

⁴ Bahrami, Mohsen, et al. "Effects of Natural Honey Consumption in Diabetic Patients: An 8-Week Randomized Clinical Trial." *International Journal of Food Sciences and Nutrition*, Nov. 2008, pp. 1–9, doi:10.1080/09637480801990389.

⁵ Khalil, M.I., and Sa Sulaiman. "The Potential Role of Honey and Its Polyphenols in Preventing Heart Disease: A Review." *African Journal of Traditional, Complementary and Alternative Medicines*, vol. 7, no. 4, July 2010, doi:10.4314/ajtcam.v7i4.56693.

⁶ Jull, Ab, et al. "Honey as a Topical Treatment for Wounds."

Cochrane Database of Systematic Reviews, Mar. 2015, doi:10.1002/14651858.cd005083.

⁷ Fingleton, James, et al. "A Randomised Controlled Trial of Topical Kanuka Honey for the Treatment of Psoriasis." *JRSM Open*, vol. 5, no. 3, Mar. 2014, p. 204253331351891, doi:10.1177/2042533313518913.

⁸ "Effect of Honey on Nocturnal Cough and Sleep Quality: A Double-Blind, Randomized, Placebo-Controlled Study." *Pediatrics*, vol. 130, no. 3, Sept. 2012, doi:10.1542/peds.2011-3075d.

Nurturing Childhood Friendships

Friendships in early childhood are just as important as friendships later in life—perhaps even more so, because from the earliest ages, children are learning how friends help each other, provide a sense of belonging, and make each other feel happy.

For some children, making friends comes naturally. For others, a little help is needed. In both cases, parents who help their children learn the importance of good friends are setting them up for a future of stable, healthy relationships that will nurture their minds and souls.

Helping your child create and experience friendships as toddlers and throughout their teenage years will benefit them for their entire lives. Through friendships your child will learn critical life skills and develop healthy confidence and self-esteem.

The earliest friendships (under seven years of age) tend to be based on convenience. This means they are based on factors such as similar age, same gender, and close proximity (from the neighborhood or in your child's daycare). Friendships are also more self-centered; for example, your child may choose to befriend someone who has a toy your child likes. This is a natural and healthy first step into friendship.¹ Your job as a parent at this age is to simply allow space in your child's life for opportunities for these relationships to occur.

After about age seven, your child will begin to become aware of reciprocity and how her actions can affect another child's feelings. Her friendships will now be helping her learn empathy. You can help reinforce empathetic behavior by asking questions and engaging with your child in her friendships by asking questions like "How do you think your friend felt when she was laughing?" "Why do you think she was crying?" and "Would you feel the same way?"

Close childhood friendships may be slowly disappearing due to the rise in smartphones, video games, and computers, which tend to keep children isolated at home. Furthering this is a belief in some societies that crime and abductions are on the rise, so parents are reluctant to let their children roam around town with friends. However, research shows there has not been a massive increase in child kidnappings.²

When parents set strict rules about time allowed with smartphones, computers, video games, television, and other electronics, it increases the likelihood that children will interact with each other face-to-face and outdoors. When kids can play together like this, they learn to collaborate and create interesting activities that stimulate their brains and cement friendships.³ This is not to say that playing video games in teams on the internet doesn't teach something, but the relationships and activities are of a different quality. A balance of play as it was in former generations and play as it is now is very likely to be a good balance.

As your children grow up, they will assert more and more control over whom they spend time with. It is vital that you help them establish a pattern of spending time with other children who are healthy and good-natured. Friends, especially in teenage years, will exert a strong influence over your child's academic and social performance—both positive and negative. Of course, it works in the other direction as well. If children are good students and emotionally mature, they will help instill these qualities in their friends.



Friendships become extremely important during angsty teenage years because they give your teen a place to feel accepted and safe. As your children age into adulthood, they will continue to benefit from a network of friends.

Social isolation has been shown to be highly associated with poor physical health. The simple presence of friends in our lives helps us stay healthy at all ages.⁴

¹Schwartz, Paul. "Child Behavior: The Importance of Friendship." Hudson Valley Parent. Accessed December 19, 2018. <https://hvparent.com/importance-of-friendship>.

²Friedman, Matthew; Fortier, Nicole; Cullen, James. "Crime in 2015: A Preliminary Analysis." Brennan Center for Justice at

New York University School of Law. 2015.

³Livingstone, Bob. "Why It Is Important for Our Children to Have Friends." Mental Help: Early Childhood Cognitive Development Language Development Comments. Accessed December 19, 2018. [https://www.mentalhelp.net/blogs/why-it-is-important-for-](https://www.mentalhelp.net/blogs/why-it-is-important-for-our-children-to-have-friends/)

[our-children-to-have-friends/](https://www.mentalhelp.net/blogs/why-it-is-important-for-our-children-to-have-friends/).

⁴Yang, Yang Claire, et al. "Social Relationships and Physiological Functioning." Proceedings of the National Academy of Sciences. Jan. 2016. 113 (3) 578-583; DOI: 10.1073/pnas.1511085112.



At each age and stage of friendship, parents can help encourage, model, and guide their children into rewarding relationships. From calling another parent to arrange play dates to making time to just listen to your teenager talk about friends, there are many ways to help nurture your child's friendships.

TRY TO DO THE FOLLOWING:

- Model good friendship behavior with your own friends.
- Know your child's friends' names and where they live.
- Encourage friendships with the kids you know are important to your child.
- Respect your child's own personality and preferences.
- Set limits on using electronics in the house.
- Make time to interact with your children and their friends.



At every step of friendship, from our very first play dates to our lifelong best friends, we learn from these relationships how to deal with conflict and adversity.

Teaching your children from a young age the importance of healthy, happy friendships will set them up for a life of support and camaraderie that will help them through hard times and build a community to celebrate with during happy times. This is a priceless gift all parents can give their children.

Gray Hair—Fact or Fiction?

Can a single scare turn a person's hair white? Are smokers more prone to going gray early? It's a fact of life that sooner or later we all end up with gray hair. Or is it? Read on to sort fact from fiction and learn how to keep your hair healthy and young-looking for as long as possible.

GRAY HAIR IS INEVITABLE. FACT OR FICTION?

Fact. Your hair color is created by melanin, a naturally created chemical in hair follicles. Melanin-creating cells begin to die as we age. Without the same levels of pigment, hair strands get lighter and lighter, thus becoming silver, gray, and, once no melanin is left, white.

When a hair follicle finally stops creating melanin, it won't be able to grow colored strands again.

Certain outside factors can contribute somewhat to premature graying, but odds are good that everyone will go gray eventually, if they live long enough.

DIET AFFECTS THE ONSET OF GRAY HAIR. FACT OR FICTION?

Fact. Multiple studies have shown nutrition to be a deciding factor in when your hair turns gray. One study in particular linked a lack of dietary vitamin B, folic acid, and biotin to premature graying.¹ Another, unrelated, study discovered a possible connection between the nutrients iron, calcium, and vitamin D3 and graying hair.²

We know that once hair follicles stop creating pigment, they never will again, so a healthy diet probably won't bring your color back, but it certainly seems possible that it could help prevent premature gray hairs from showing up.

BEING SCARED CAUSES GRAY HAIR. FACT OR FICTION?

Fiction. Once the melanin in your hair follicles stops being produced, it stays that way. The only way for your hair to change color is to dye it. It's common to hear people blame their gray hair on a single stressful event or a big fright, but grays are far more likely to come as a result of your genes. If your parents went gray early, there's a good chance you will too.³

STRESS CAUSES PREMATURE GRAY HAIR. FACT OR FICTION?

Fact. Parents who blame their gray hair on years of dealing with unruly children may be correct. A recent study undertaken in Turkey found numerous risk factors associated with premature gray hair. One thing they all had in common is they were all factors that caused an increase in oxidative stress in the body.⁴ Chief among these are prolonged emotional stress and chronic diseases.



It stands to reason that a surge in free radicals caused by prolonged stress may attack the follicles that produce hair pigment, causing early graying.

TOO MUCH DYE CAUSES GRAY HAIR. FACT OR FICTION?

Fiction. Just like the myth of a single stressful event causing gray hair, dye will not permanently make you go gray either. Again, your genes are responsible for deciding whether or not your hair goes gray early—not dye, harsh shampoos, stress, or frights, although as noted above, chronic oxidative stress may well contribute to early graying.

CIGARETTES TURN HAIR GRAY. FACT OR FICTION?

Fact. Unlike a single stressful event and hair treatments, cigarettes are an outside factor that can contribute to premature graying. Studies have shown smokers tend to have earlier onset of hair graying.

One study in particular found smokers were two and a half times more likely to develop premature gray hair than nonsmokers.⁵

IT'S POSSIBLE TO GO GRAY OVERNIGHT. FACT OR FICTION?

Fiction. Your head has somewhere between 100,000 and 150,000 individual hairs on it. Each one has its own individual cycle of growing, falling out, and regrowing at a rate of roughly one centimeter per month. On top of this, once a strand of hair grows out from the scalp, its color will not change. For your hair to turn gray overnight, every hair would have to fall out at once and regrow with no melanin.

¹Daulatabad, Deepashree, et al. "Prospective Analytical Controlled Study Evaluating Serum Biotin, Vitamin B12, and Folic Acid in Patients with Premature Canities" International Journal of Trichology vol. 9,1 (2017): 19-24.

² Bhat, Ramesh M et al. "Epidemiological and Investigative

Study of Premature Graying of Hair in Higher Secondary and Pre-university School Children" International Journal of Trichology vol. 5,1 (2013): 17-21.

³ "Gray Hair Facts: What Causes Gray Hair?" WebMD, www.webmd.com/beauty/ss/slideshow-beauty-gray-hair-facts.

⁴ Akin Belli, A., et al. (2016), "Risk Factors for Premature Hair Graying in Young Turkish Adults." Pediatric Dermatology, 33: 438-442. doi:10.1111/pde.12881.

⁵ Zayed, Ayman A., et al. "Smokers' Hair: Does Smoking Cause Premature Hair Graying?" Indian Dermatology Online Journal vol. 4,2 (2013): 90-2.



Nail Health

Nails are probably not our biggest priority when it comes to our health. Usually they are seen as something we have to generally maintain with occasional clipping and trimming. Some of us take it a step further with grooming and manicuring. It turns out that our nails, like our hair and skin, are pretty good indicators of our overall health.

Nails are part of the integumentary system (along with skin and hair) that helps to establish the first protective barrier of the body. Despite their protective role, nails are relatively permeable (just as hair and skin are). They are primarily comprised of an important protein called alpha-keratin.

The coloring of nails can indicate some health concerns. If your nails are bluish or quite pale, that could be a sign of decreased oxygenation to your fingertips.

That decreased oxygenation could be due to anemia (low iron or low hemoglobin in the blood) or poor perfusion (decreased blood flow to the area).

Horizontal white lines across your fingernails are sometimes a sign of nutritional deficiency. These are also called Muehrcke's lines and are often due to a protein or zinc deficiency.

Red streaks of blood might be associated with heart infection, and you should be evaluated by a doctor promptly.

That said, if the red streak appears after nail trauma (e.g., you slammed your finger in the door or banged your hand on something), you probably need not be concerned.

If there is a darkening under the nail bed that you're unsure of, go to the doctor immediately, as it could be skin cancer.

Large, white half-moon discoloration could be an indicator of renal or liver issues. If you have hypertension or diabetes, the kidneys may especially be a concern. Otherwise, this discoloration might be associated with liver disease.

Yellowed nails may be due to a fungal infection, especially if you see them get progressively worse.

The texture of nails is also an indicator of health. Rough, vertical ridges are usually just signs of aging and are benign. Rippled nails may be due to psoriasis or even arthritis.

Brittle, dry, or easily cracked nails are quite common and are often due to a number of external issues. Often it is due to one's work (e.g., nurses washing their hands frequently or carpenters manipulating heavy tools and materials) or hobbies (such as gardening or going to the nail salon frequently).

But if your nails are perpetually brittle, it could also be a sign of an imbalance in thyroid function.

The shape of your nails may also indicate concerns. Clubbed fingernails—which when you examine the profile of your finger has the look of an upside-down spoon—are associated with lung health.





Clubbing is abnormal, and you should see a health care provider to assess the cause.

If your nails become concave in a spoon shape—medically called koilonychia—it could be due to iron deficiency or anemia.

Foods high in healthy fats, biotin, collagen, sulfur, and calcium are excellent choices for nail health. Wild-caught fatty fish, organic eggs, spinach, and blueberries are some excellent sources of these nutrients.



Hang It Up—How Your Smartphone Is Damaging Your Health

You know the feeling. You leave your house—even to go out to grab the mail or to rake the leaves—and you feel that sense of anxiety. Then you realize you’ve left your phone in the house and drop whatever you’re doing and run back into the house to get it.

We are so intrinsically and intimately attached to our smartphones that not having them on our actual physical beings, or at least right next to us, makes us feel like we are missing out on something.

Our smartphones are fantastic ways to organize our lives, to stay connected to those we love, and even to maintain our health. But how are our smartphones damaging our health?

First of all, they are germier than even our hands! We carry our cell phones everywhere—on the bus, around at work, into bed with us, to the grocery store, and even to the bathroom. The difference between our hands and the phones is that we tend to wash our hands a whole lot more than we do our phones. While you cannot wash your phone with water, wiping it down with antibacterial wipes once a day or every few days may be a good idea.¹

This is particularly important if you work or have interactions with more vulnerable populations such as babies, children, and seniors.

Check out your posture. We hunch over our cell phones as we text and surf the internet. The angle that our necks are in when we are texting is not natural and can even be harmful. Because we are in that position so frequently—along with being hunched over our laptops and computers—we can put a lot of strain on those muscles, ligaments, and vertebrae. If you want to counter the effects of that, stretch your upper back over a foam roller and hold it for as long as you feel good or until you feel a release. Or try yoga positions such as cobra or upward-facing dog.

Not only does excessive smartphone use put strain on our necks and upper backs but also on our upper extremities.² This is particularly a problem for avid texters, as it can cause a lot of pain.³ In this case the antidote is trying to do more voice texting.

Our smartphones are disturbing our sleep. Digital blue light is hardly ever good for us but is particularly detrimental once the sun goes down. The blue light disturbs the processes in our bodies related to the production and usage of melatonin. For millennia our bodies adapted to the rising and the setting of the sun. Artificial light of course has changed that and disturbed our biorhythms to some degree, but the light emitted by our screens is worse—disruption of melatonin by blue spectrum light from TV, computer, and smartphone screens is likely related to the epidemic of insomnia that we are seeing in many societies today and the widespread dependence on powerful sleeping medications, the long-term effects of which are unknown.



One strategy that can mitigate some of the sleep-disturbing aspects of light in the shorter-wave blue frequency is to change settings on smartphones, computers, and even some smart TVs to reduce blue light and/or add an orange tint for evening use, which counterbalances some of the effects of the blue spectrum light.⁴ There are also many blue-light blocking glasses on the market, some more effective than others, that can be worn during evening hours, and there are even some that fit over regular glasses. The best option is to place your phone in an area outside of your bedroom, or at least not at your bedside, and to stop viewing screens at least two hours before bedtime.⁵ If you are concerned about getting important calls in the middle of the night, turn your ringer up. Instead of using your phone as an alarm clock, get an alarm clock that doesn’t emit light.

And then there is the most dangerous risk of cell phone use. Smartphone use and driving has become such a significant public health risk that many municipalities are outlawing it—even when using a map navigation system (though presetting the directions before beginning a trip is fine). Talking and texting are very distracting, and even voice texting can prevent you from being an alert and safe driver.

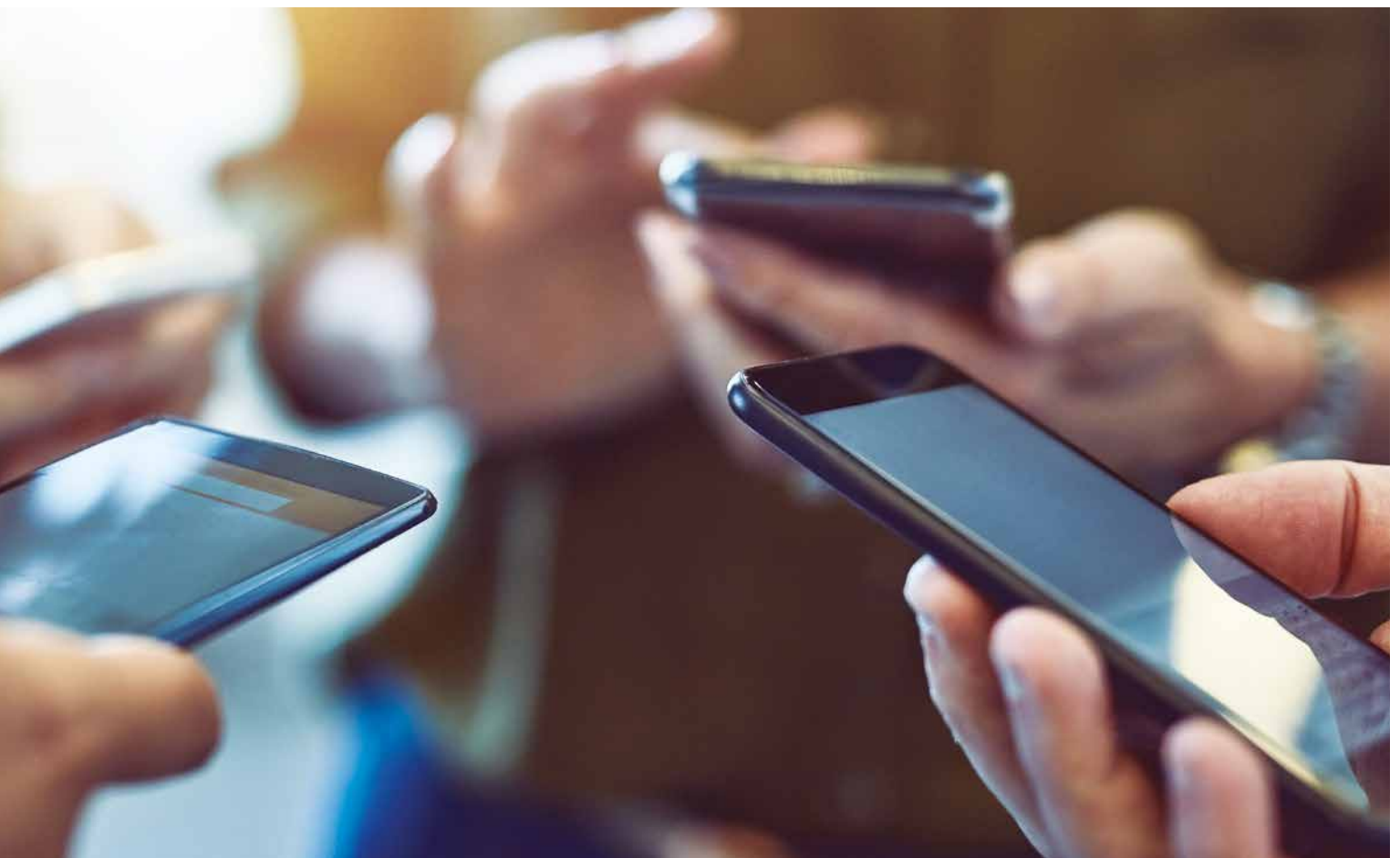
¹Koscova, Jana, et al. "Degree of Bacterial Contamination of Mobile Phone and Computer Keyboard Surfaces and Efficacy of Disinfection with Chlorhexidine Digluconate and Triclosan to Its Reduction." *International Journal of Environmental Research and Public Health*, vol. 15, no. 10, 2018, p. 2238, doi:10.3390/ijerph15102238.

²Sharan, Deepak, et al. "Musculoskeletal Disorders of the Upper Extremities Due to Extensive Usage of Hand Held Devices." *Annals of Occupational and Environmental Medicine*, vol. 26, no. 1, 2014, doi:10.1186/s40657-014-0022-3.

³Ali, Maryam. "Frequency of De Quervain's Tenosynovitis and Its Association with SMS Texting." *Muscle, Ligaments and Tendons Journal*, 2014, doi:10.11138/mltj/2014.4.1.074.

⁴<https://www.consumerreports.org/sleeping/blue-light-filter-on-phone-computer-sleep-better/>.

⁵<https://www.sciencenewsforstudents.org/article/evening-screen-time-can-sabotage-sleep>.



Since this is such an important matter, one of life and death, that not only should you abstain from smartphone usage when you are behind the wheel, but you should encourage others to do so and fervently support local laws that advocate for it.

The issue of health effects from long-term exposure to the radio frequency (RF) energies we are exposed to while using a smartphone is still scientifically controversial, and given the enormous economic importance of this sector, this issue is not likely to be definitively resolved anytime soon. To be on the safe side, there are a number of simple things we can do to reduce our (and especially our children's) exposure.

One clear law of physics that can reduce as yet unknown health risks is that any radiant electromagnetic energy, whether visible light, infrared light, ultraviolet light, radio frequency, microwaves, x-rays, gamma rays, etc., is that the energy decreases in proportion to the inverse square of the distance from the radiant source. This means that small increases in distance between the energy source and ourselves can create a very large decrease in the intensity of that energy exposure.

So, carrying your cell phone in a belt holster that keeps it several inches from your body, in a purse, or in the back pocket of a backpack, and holding the phone away from your head on speaker mode while talking can all dramatically reduce long-term exposure to RF energies from cell phones.

Since children's skulls are much thinner than adults' (in inverse proportion to their age), holding a cell phone to the ear may engender more long-term risk for small children than for adults—so it's important to teach children these simple precautions early in life. Also, try to keep your phone on airplane mode when not making or receiving calls, and, especially if you keep it in your bedroom at night, disconnect the phone's antenna so that it no longer communicates periodically with cell towers, thereby not generating any RF energy at the phone.

Obviously, with all of these issues, the true solution is to decrease the use of your cell phone. However, that may be easier for some than others. Being more mindful about your smartphone usage might be a great first step to addressing the unwanted health consequences of this modern technology.

SAFE SMARTPHONE TIPS

- Don't carry your phone close to your body.
- Keep your phone in airplane mode unless you are on a call.
- Don't use your phone in bed.
- Avoid staring at your phone for a prolonged period of time.
- Be aware of your posture when using your phone.

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Ask the Expert

Why are antioxidants important?

Antioxidants are important for your health because they fight against oxidation from free radicals. Free radicals enter the body from sources such as pollution, smoking, drinking, and improperly washed foods. They are also created by your own body when excessive stress occurs, especially with over-exercising. Free radicals are also a natural, healthy, and necessary byproduct of your metabolism. Ideally, these naturally created free radicals are offset by a healthy diet that includes plenty of fresh fruits and vegetables rich in antioxidants. However, when free radicals build up in the body to a level that outstrips available antioxidants (both those produced by the body and those provided by the diet), they can cause extensive damage to DNA, proteins, and lipids.

This damage ultimately becomes a major contributor to the aging process and degenerative diseases.

You can increase antioxidant defenses against this damage by eating even more



fruits and vegetables—something we should all be doing anyway—because dietary fruits and vegetables are the principal source of ascorbate, carotenoids, polyphenols, and other natural antioxidants. Some estimates say that only 9 percent of Americans eat the recommended five servings of fruits and vegetables per day. Chances are good that we can all improve our health and fight free radical damage by improving our diets.¹ Although more controversial, there is also good evidence that supplementing the diet with a broad range of natural antioxidant micronutrients (especially polyphenols) can also balance excess oxidative stress (an excess of free radicals). However, supplementation does not work as a substitute for a healthy diet.

Can I use the Law of Attraction to get healthier?

Whether you like to call it the Law of Attraction, self-fulfilling prophecies, or a positive outlook, the idea is the same. By training your brain to focus on the positive aspects of your life, you can learn to attract more good things, people, experiences, and circumstances into your life—including aspects that help your body stay fit and healthy. Your mind is your most powerful tool in the art of growing young; it is critically important to learn to create positive thought patterns, so you can focus on the things you want in life while pushing out the destructive thoughts that attract negative people and situations. When it comes to living the healthy, happy life you want, visualization is one of the most powerful mind exercises you can do. Some people like to use a vision board to help focus their minds. Others keep a log book of thoughts. Still other people mentally check in with themselves several times a day to track their feelings. There is no one correct way to use the Law of Attraction on your road to wellness, happiness, and prosperity. The key is simply to maintain a positive focus as you work toward goals. Envision the person you want to be frequently, and you will become that person before you know it!

Is crash dieting safe?

Crash dieting and routines designed to very rapidly help you lose weight are often not the healthiest options for getting fit and healthy. In fact, crash diets have been linked to higher risk of health concerns because crash diets tend to lead to weight cycling, which in turn increases mortality risk.² Weight cycling happens when people use a crash diet to quickly lose weight but then return to their old unhealthy eating patterns and slowly put the weight back on. A far better option is to adopt a generally healthy lifestyle that includes meals at home made from fresh, whole foods and regular physical activity most days of the week. Don't be discouraged if a healthy lifestyle like this doesn't produce results as fast as a crash diet. Your progress may be slower, but it will be more sustainable—meaning no weight cycling and longer lasting health.



¹ Poljsak, B., and I. Milisav. "Aging, Oxidative Stress and Antioxidants." *Oxidative Stress and Chronic Degenerative*

Diseases - A Role for Antioxidants, 2013, doi:10.5772/51609.
² "Weight Cycling Is Associated with a Higher Risk of

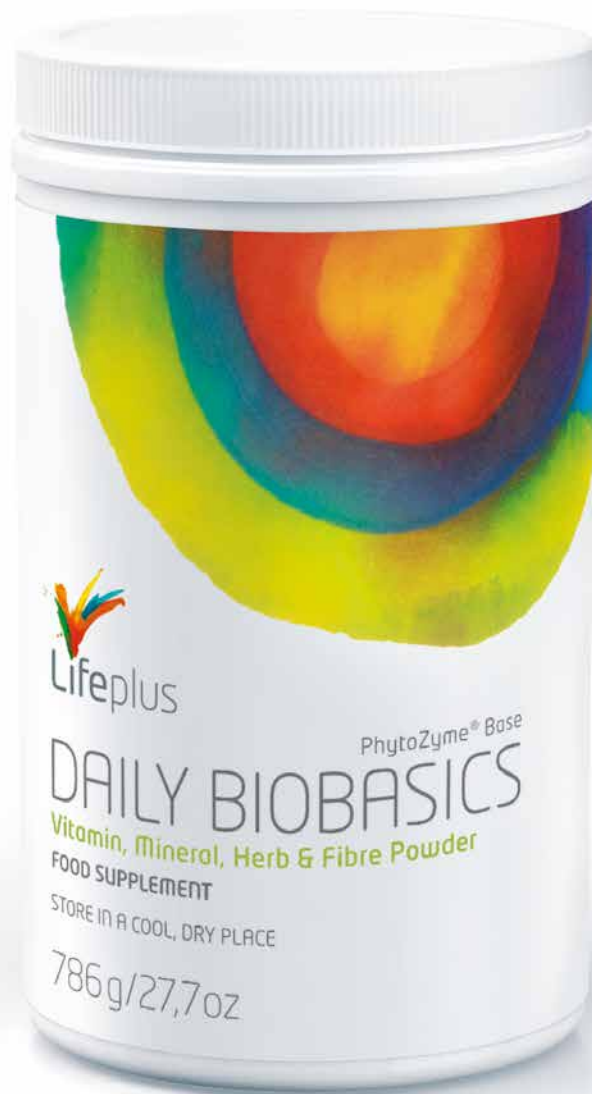
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