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Building a Better Immune System



Homemade soup is an efficient and economical way to include lots of immune bolstering ingredients in one bowl.

Colorful fruits and vegetables—and easy-to-get vitamin D—can help you ward off illness

NANCY BERKOFF

Physicians have often turned to food ingredients to help keep everyone's immune system as healthy as possible. Although not a proven cure, doctors in the 1400s recommended their patients include horseradish, mint, vinegar, and applesauce in their diets to ward off the bubonic plague. These ingredients do have some immune-boosting properties, including vitamin C, antioxidants, flavonoids, fiber, and water. Perhaps this is the origin of "an apple a day?"

In the 1600s, Parisian citizens' thirst for lemonade may have helped to keep the plague out of their city. Lemonade was all the rage; mobile lemonade vendors circulated around the city, dispensing the popular beverage and discarding the citrus peels in the streets. The vitamin C, minerals, and water in the lemonade may have helped to keep the immune system healthy. Plague was spread by fleas from infected rodents. An unintended but helpful consequence was the insect-repelling properties of citrus peels.

Populations that had access to a variety of healthy foods did better during times of widespread disease. People's diets assisted in building and maintaining healthy immune systems. Until recently, food intake was largely grain-based for many parts of the population, with fruit, vegetables, and meat considered to be "luxury foods."

Information taken from interviews with survivors of the 1918 flu pandemic showed that people who had regular access to fresh fruits and vegetables, dairy, and protein foods, such as meat, eggs, seafood, or poultry, tended to fare better with recovery from the flu than those with a more restricted diet.

One survivor, interviewed when he was 100 years old, said: "My parents worked for a merchant family in Boston. There were always bananas, oranges, pineapples, and other types of 'exotic' fruit in their home, something unheard of at that time. We children were given the pick of one piece of fresh fruit a day; none of us got sick during the epidemic, and we all lived to be at least in our 90s."

Healthy Choices, Healthy Immunity

Fast forward to today and our widely available assortment of fresh, frozen, canned, and dried immune-building food ingredients. According to Kathleen Zelman, dietitian and director of nutrition for WebMD, we should regularly eat berries, fatty fish, dark green leafy vegetables, whole grains, sweet potatoes, tomatoes, beans, nuts, and eggs for immune system support.

Fresh and dried herbs have been used in the kitchen forever, adding wonderful flavor, color, and health benefits to the foods

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we eat.

The digestive system plays an important role in immunity. It extracts vitamins and nutrients essential for creating different immune cells and fueling (or suppressing) our immune response. Eating poorly can also undermine immunity, such as sugar's role in suppressing certain immune responses.

We should try to keep our digestive system as healthy as possible so it can assist with a healthy immune response. Rosemary, with aromatic leaves and flowers, is a natural antioxidant and can have an antibacterial effect on food, helping with digestive health.

Fresh chilies, cayenne, and bell peppers get their "heat" from a natural compound called capsaicin. Capsaicin was found to assist in maintaining stomach health, among several other benefits, according to a review of 78 studies published in *Open Heart* in 2015. Chopped fresh, frozen, or canned peppers add flavor and increase the health quotient of sauces, pasta, rice, and salads.

The Physician's Committee for Responsible Medicine reminds us that the more fresh or frozen fruits and vegetables included in a dish, the more immune-enhancing ingredients we put on the plate.

Even without a nutritional analysis, we know that an eggplant stew with tomatoes, summer squash, garlic, onions, carrots, celery, and basil is providing immune benefits in addition to the pleasure of eating great-tasting food. Spinach fettuccini with a mushroom sauce, served with a red and green cabbage salad and fresh melon is filled with immune-enhancing ingredients, beautiful to the eye and satisfying to eat.

If you would like to obtain a fast nutritional analysis for your menu items, you can input ingredients into the USDA's nutritional data bank online.

Chicken Soup for the Immune System Most cultures have their version of Grandma's chicken soup. In Greece, it's avgolemono (chicken, rice, and lemon soup). In Iran, it's Persian gundi (chicken meatball soup), and in Puerto Rico, it's sancocho (chicken and root vegetable soup), while Peru has a chicken, hard-cooked egg, and noodle breakfast soup.

Science has confirmed the health benefits contained in this comforting meal, which help to bolster the immune system. But it's not all about the chicken. The hot broth, carrots, onions, parsnips, dill, parsley, ground pepper, and additional herbs, veggies, and protein also play a role in fighting.

From Scratch or Speed-Scratch

Homemade soup is an efficient and economical way to include lots of immune bolstering ingredients in one bowl. Peel and chop root vegetables, such as carrots, turnips, parsnips, sweet potatoes, or yellow, gold, or purple potatoes, add a small amount of canned broth or water, and let simmer in a pot or slow cooker until the vegetables are soft.

Puree all or most of the soup, reheat, and serve with a splash of vinegar, lemon, or lime juice or tomato paste. Leftover cooked or canned poultry, bacon, pasta, or tofu can be stirred into the soup for added protein and texture.

If you have the time, make some onion soup. Onions contain vitamin C and flavonoids, known to help with healthy immune reactions. Slice lots and lots of onions, spray a large pot with vegetable oil and quickly stir and sauté. The onions will create their own "juice." When the onions have gotten very soft, add in vegetable or mushroom broth, allow to simmer, and, voila, onion soup.

If you don't feel the urge to create "from scratch" soups, here are some ideas for "speed scratch" soups:

Split Pea and Lentil: Add cooked or canned drained lentils to canned split pea soup and dilute according to package directions. Add chopped onions and shredded ham, chopped hot dogs, cubed smoked tofu, or smoked turkey during cooking for more flavor.

Fast Fish Chowder: Thaw and chop frozen fish filets. Simmer with a small amount of broth and chopped carrots, celery, and onions. Add to canned cream of potato or cream of celery soup and allow to cook until hot and veggies are soft. Serve hot with cornbread muffins on the side.

Puree Mongole: A classic soup combination of tomatoes and split peas. Combine canned tomato soup and canned split pea soup with drained, chopped canned tomatoes, cook and stir until hot. Pair with crusty baked bread or herbed breadsticks.

Tomato-Corn Chowder: Combine canned tomato soup with canned corn chowder; dilute with milk, silken tofu, or a combination of plain yogurt and water. Add drained, chopped tomatoes and frozen or canned cut corn (drained) for extra texture. Pair with a small Caesar salad.

Putting the Chill on Soup

We can plan on chilled soups when the weather is warm. Chilled soups can be

refreshing and luxurious, and easy to prepare when we don't want to heat up the kitchen.

Traditional gazpacho has a tomato base. White gazpacho is popular and can have corn and zucchini or tofu base. Green gazpacho is a wonderful way to drink your greens. Create your red gazpacho base by pureeing tomatoes in a blender or food processor with sweet onions, fresh garlic, fresh parsley or basil, and a small amount of oil.

Create your white gazpacho base by pureeing fresh, steamed and chilled or frozen, thawed zucchini with some canned creamed corn (the "cream" is cornstarch, rather than dairy) and a small amount of silken tofu or plain yogurt.

Create your green gazpacho base by pureeing your fresh greens of choice; spinach, kale, and so on. Romaine lettuce and Swiss chard work well. Add a small amount of prepared pesto sauce. Once you have your base, you can add shredded fresh vegetables, fresh herbs, and seasonings to taste. If you'd like thicker gazpacho, crumble some fresh, crustless bread into the mix, blend, and allow to sit. The bread will create a thickened, smooth texture.

Create a pumpkin base for a cold soup by blending canned, unseasoned pumpkin with a very small amount of coconut milk. Cold pumpkin soup can be flavored with curry, pureed carrot, leftover mashed potatoes, orange or lemon zest, or pureed beans. Garnish with frozen grapes or chilled bell pepper slices.

Create a tofu base for a cold soup by blending silken tofu with fresh parsley, sweet onions, a small amount of tomato puree, garlic, onion powder, and white pepper.

Create cold potato chowder by adding cubed, leftover potatoes and mixed veggies, or shredded raw veggies to the tofu base.

Create a cold borscht by pureeing shredded fresh beets or drained, canned beets with the base. You can also create a Thai-inspired cold soup with lemongrass, orange zest, and fresh ginger, or a pesto-cream by blending with prepared pesto and cooked beans.

Balance and Sunshine

Spending time in the kitchen, at the stove, and at the table is a wonderful way to use part of our day. Getting out into the sunshine should also be on our daily "to do" list.

In the late 1800s, children living in the sun-limited cities of Northern Europe and North America had a high incidence of developing rickets, a disease caused by vitamin D deficiency.

Starting with the advent of television, many children got accustomed to hearing "go outside for a while, you shouldn't stay in all day." There is some science behind this directive. In the late 1800s, children living in the sun-limited cities of Northern Europe and North America had a high incidence of developing rickets, a disease caused by vitamin D deficiency. They also had a tendency to contract tuberculosis (TB). Vitamin D was thought to assist the body in warding off TB, and we know it's critical to helping our immune system differentiate disease-causing cells from healthy cells.

Sunshine is the best source of vitamin D, as the body is able to use UV light from the sun to create vitamin D in the body. According to the National Institutes of Health, UV light plays an important role in many of the body's immune responses.

Human skin produces beta-endorphins when exposed to UVB. These opioid peptides boost the immune system, relieve pain, and help us relax and feel well.

Endorphins are "feel-good" chemicals produced by the body, our own personal "cheerleaders." Sunshine and exercise have been found to assist the body in producing endorphins. We should consider the wisdom of "going outside for a while," without excessive sun exposure, to help boost our immune system and our spirits.

As the days grow longer and seasonal fruits and vegetables become more available, it's a good time of year to get plenty of sun and the fresh fruits and vegetables that can get our immune system in shape for the coming cold season.

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THE ROOT CAUSE

Electromagnetism and Human Health

Part One: The sun's magnetic effect on the human brain

ARMEN NIKOGOSIAN

It's been long known that many animals are sensitive to fluctuations in the Earth's magnetic field; some animals use this sense like a built-in compass.

However, suggesting human beings can sense and are affected by this same magnetic field might strike some as New Age hocus-pocus.

But the evidence that we have a subtle sense of magnetic fields has been accumulating over the past 100 years, with some insight into its effects on our mental and emotional well-being.

A group of researchers from the California Institute of Technology tested the effects of geomagnetic stimulation on humans using electroencephalography (EEG), a test that records the electrical signals of the brain.

Their elegantly designed study placed subjects in an electrically grounded, special exposure chamber called a Faraday cage to produce an electromagnetically "quiet" environment. In other words, the Faraday cage acted like a soundproof booth so that those inside couldn't hear, or rather sense, the electromagnetic fields around them.

Researchers then replicated various electromagnetic scenarios with charged coils. They aimed to reproduce the magnetic interplay between the Earth and the sun.

Rather than ask participants what they sensed, the researchers examined their brain activity using an electroencephalogram (EEG).

"Since brain activity underlies all behavior, we chose a more direct electrophysiological approach to test for the transduction of geomagnetic fields in humans," the researchers wrote.

They looked specifically at the EEG alpha wave associated with a relaxed state in our brain. This state is associated with improvements in focus and well-being as well as decreases in depression and anxiety. In manipulating the magnetic field, the researchers noted a fading of alpha wave brain activity in one-third of the study participants.

The researchers concluded that the sensor for this action was likely a bio-mineral called magnetite, which transduces magnetic fields into biological signals. That could be another important use for iron in our bodies.

"Our results indicate that at least some modern humans transduce changes in Earth-strength magnetic fields into an active neural response. We hope that this study provides a road-map for future studies aiming to replicate and extend research into human magnetoreception," wrote the researchers.

While the implications of this research point toward fascinating explanations, such as an internal navigation system, this would likely be severely disabled in our society through a lifetime of disuse and the electromagnetic interference from modern technology.

The findings also raise questions about how exposure to unnatural or unusual magnetic fields could affect our brain's alpha state.

The so-called alpha state is the default state for healthy brain activity. A version of what we understand of the alpha state has been sought after for thousands of years by practitioners of meditative and mindfulness techniques. Research suggests it can also be induced by daydreaming and vigorous aerobic exercise. It's in this state of relaxation and increased creativity where epiphanies and "light bulb" moments occur. Anything which could potentially inhibit this crucial state of healthy brain function should be thoroughly investigated.

Geomagnetic Storms

Another group of researchers from the Azerbaijani National Academy had previously demonstrated that this electromagnetic effect on the brain was even more pronounced in the



JURIK PETER/SHUTTERSTOCK

presence of geomagnetic storms.

A geomagnetic storm occurs when a stream of charged particles from the upper atmosphere of the sun, known as a solar wind, causes a major disturbance in the Earth's magnetosphere as those particles reach the Earth's boundary with space.

Geomagnetic storms increase in frequency on a recurring 11-year solar maximum activity cycle associated with sunspots, solar flares, and coronal mass ejections.

While this cycle is well documented, its effect on people is less acknowledged.

Currently, we sit at the bottom of a solar minimum with the next maximum projected to peak near 2025. The researchers chose several days with exceptional geomagnetic storms between 2000 and 2005 to do their research.

The small but long-term study found amplification in negative emotional states, decreases in motivation, and other issues on days of geomagnetic storms.

"As a rule, during periods of strong geomagnetic disturbances, indisposition, weakness, and presence of indistinct localized headaches were recorded for the majority of patients," the researchers wrote.

The researchers used EEG readings to see the functional state of the human brain but also measured electrical activity in the heart with an electrocardiogram (ECG).

They found a whole host of EEG brain wave changes, most notably a weakening of alpha waves and a strengthening of theta waves. Theta waves in adults occur when in a drowsy or hypnotic state.

An increase in theta wave activity while awake could certainly contribute to the phenomena known as "brain fog," though research into brain waves is ongoing and subject to different interpretations.

The researchers hypothesized that the effects resulted from "dysfunction of integrative subcortical systems." In other words, geomagnetic storms affected a group of diverse neural formations deep in the brain responsible for complex activities like memory, emotion, and hormone production.

Original Researcher

Research into the effects of the sun on people has been ongoing for at least 100 years.

It began within the modern scientific paradigm with Russian biophysicist Alexander Chivhevsky, founder of heliobiology, the study of the sun's effect on biology. In the 1920s, he used historical research from 500 B.C. through 1922 A.D. to link the 11-year solar cycle with climate changes and the mass activities of peoples in Russia and 71 other countries.

Chivhevsky pointed to a significant percentage of important historical events involving large numbers of people that occurred around sunspot maximums that occur at the peak of the solar cycle. As a result of his work, he was nominated for the Nobel Prize. Instead of the prize, he received a trip

to Soviet gulags by Josef Stalin in 1942 because he wouldn't retract his research. After Stalin's death in 1953, he was released and his academic reputation was restored.

While it may seem like this discussion is a purely academic exercise, it isn't.

Awareness is the first step to adapting our environment. When it rains, you bring an umbrella. An asthmatic may choose to stay indoors on days with high pollen counts. Likewise, if there are specific and measurable effects from the sun on the human mind and emotions, people may want to change their behavior to minimize any bad outcomes.

These effects may also help some people account for diffuse and mysterious symptoms that have no other environmental or physiological explanation. Currently, the interventional tools available to combat electromagnetic anomalies are few and limited but with increased awareness, necessity would become the mother of invention.

Unfortunately, beyond the problem that this research is limited and few physicians can readily incorporate it into their diagnostic and treatment approaches, acknowledging the impact of the solar cycle on Earth opens two doors some would prefer closed. The first being the hugely important relationship between our sun and climate, and the second being the ever-increasing levels of man-made electromagnetic radiation in our everyday world.

That really begs the question: Was Chivhevsky correct?

Two researchers have corroborated his findings. In 1992, Arcady A. Putilov found similar historical parallels, as did Svitbert Erel in 1996. But given the scope of the phenomena, more research is warranted. If Chivhevsky is correct, the implications of that go far beyond our health.

If wars, revolutions, and social unrest are affected by cycles of solar activity, people should be aware. What would it mean if one-third of the world's people became more anxious, stressed, or depressed in a pattern that follows the solar cycle?

And what about the exponential increase in man-made electromagnetic sources in the 21st century? More on that next week.

Please check out the Root Cause column next week for Electromagnetism and Human Health: Part Two—Man-made Sources.

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Generous community-minded people have made it their mission to help others.



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Tolerance in a Time of Pandemic: 2 Sides of a Coin

We don't know another person's circumstances, so it's important to be kind and patient

ERIC FETHKE

I'm a pediatric cardiologist. My patients are among the most vulnerable to infections. Several times over the past few weeks, my hard-working and dedicated staff have come to me on the verge of tears.

"A mother just yelled at me on the phone that I didn't care about her child's health," my medical assistant said, exasperated, wringing her hands repetitively. "She accused me of refusing to provide needed medical care to her child and warned us that she was calling her lawyer."

This mother was angered because we advised postponing her visit until her daughter's cold symptoms resolved. Her pediatrician had referred her to us because of a heart murmur. Likely it was benign. But with children, you have to be careful. I called him to confirm. He agreed that, since the girl was otherwise healthy and showing no signs of heart failure, the visit was not urgent.

A different nurse called the mom back. I did, too. But there was absolutely no convincing this mom. She was belligerent on the phone. "I just don't understand why you wouldn't allow my daughter to enter your building," she said. I reminded her that her daughter was coughing, which was a signature symptom of COVID-19. That in order for everyone to be safe, especially my high-risk patients, we had to be careful. She blamed me and my staff for being "heartless," an especially cutting insult to a cardiologist practice. Instead of realizing that our protocols were in place to keep people safe, she was furious.

"My concern," I said, trying to be patient, "is that if your daughter came to the office while she's not feeling well, we might put other people at risk." We were on the phone, but I could envision the mom shaking her head. She just didn't get it.

It's not that we didn't need the business. We did. Though hard to believe amidst a global health crisis, we're struggling to keep the doors of our medical prac-

tice open. I know that many of my doctor colleagues are as well.

We're losing revenue during these trying times. We have to be careful not to inadvertently catch or spread the virus. This means extensive handwashing, wearing disposable protective gowns, and disposable latex gloves, and donning an N95 surgical face mask. I put on a new gown and gloves in an isolation room before seeing each patient, which means each visit takes twice as long as it used to. Confronted with the economic reality of fewer patient visits, my longstanding practice is threatened.

I expected these stressors. The unexpected stress comes from patients' parents, like that mom, who lack the empathy or courtesy to consider others during this terrible time. I hung up the phone feeling that the pandemic had taught me something: Some get it. Others don't. In my practice and in the world around us.

Many do get it. They understand that we're taking extra precautions for everyone's good. These patients have been complimenting the staff for our conscientiousness.

Despite the concerns about contracting COVID-19 in a hospital, some of my little patients still require urgent heart operations. In order to get them out of the hospital as soon as possible, my surgical colleagues are discharging them to my outpatient care earlier than usual. "We truly appreciate that you guys remain open for us in the face of the increased risk to yourselves," said the parents of a small infant who had just undergone such a heart surgery.

No one likes to be criticized. No doctor likes to let their patients down. At first, I felt resentful about the negative feedback. But then I realized something else. This is a complicated situation. Emotions are running high. The stress of this pandemic affects each of us differently. It shines a spotlight on us, revealing the often repressed conflicts in our lives. Faced with the threat of this virus, our priorities change. We become less tolerant. With far less room in our lives for pettiness and bad behaviors, we are

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prone to react negatively.

More emotionally tuned in, I'm coming to better appreciate those who consistently carry out their responsibilities at work and home. I'm leaning on those with strong moral character; distancing myself from the morally compromised. Perhaps we all are.

I admire and praise those toiling longer and harder than ever: the police, ambulance medics, health care workers, food distributors, and public utility employees. Nonessential workers have been virtually removed from society. They stand idle at home, less productive than ever. They're doing their part, but they aren't receiving comparable recognition for adhering to social distancing, currently the most effective public health intervention against this viral scourge.

Some personality types thrive during a crisis. Generous community-minded people have made it their mission to help others—sewing masks by hand and volunteering at food pantries. I find that remaining available for my patients, staff, and community helps my anxiety. I'm concerned that some of us are hidden in the shadows, alone. Overwhelmed people who may be more introverted are now recoiling in isolation from society—virtually invisible. They may be the most vulnerable to depression and suicide.

Rich, poor, old, young, everyone is suffering. Many are anxious and stressed. Many are experiencing deep misery and pain. Some people have health insurance to cover testing and treatments for COVID-19. Others have insufficient health insurance coverage or no insurance at all. The poor have minimal resources to fight the onslaught of this infection or the financial consequences of social distancing. The financially fortunate can stock their refrigerators, but groceries can't quell the panic people feel.

Some people have personal confidence, emotional stability, and family support to help weather this storm. Others suffer from depression, anxiety, and loneliness—tossed and

battered by analogous circumstances.

The pandemic has taught me that immense stress makes it all too easy to judge others. We rush to place them into basic categories that are easier to process in the midst of chaos. "Those who get it and those who don't."

But as much as we want to criticize some and praise others, putting people into boxes is shortsighted and misguided. We need to listen and communicate with our hearts in collaboration with our minds. If we employ this emotional intelligence well, the spotlight allows us to look deeper and be more compassionate. Things are not so simple.

Where are you today? Where will you be tomorrow? We need to treat ourselves and each other with kindness. In the midst of a crisis, we may very well find ourselves needing help. The pandemic reveals what we already know: circumstances can change quickly. We miss what's truly going on in someone's life when we jump to conclusions.

A week later, I reached back out to the mom who had been so accusatory to my staff and me. I called her to check-in, find out if her daughter was still coughing, and make a plan for when it would be safe for them to be seen. Through tears, she apologized for her prior interactions with our team. She told me she is an emergency room nurse, physically and emotionally exhausted at work by the pandemic. Her husband had just lost his job and her mother had been hospitalized with COVID-19. In the midst of all of this, she was panicked that her daughter may now have a life-threatening heart condition. "We're here to help," I reassured. And I meant it.

Dr. Eric Fethke is a pediatric cardiologist, author, and legal adviser who has been practicing in New York for 22 years. He received his BA from Princeton University and his MD from Columbia University. He has taught medical students and residents at Columbia, Albert Einstein, and now Touro universities.

Gratitude Can Calm Our Urge to Compete with Others

Gratitude could help us get through the pandemic without turning on each other, a new study suggests

JILL SUTTIE

In the midst of the coronavirus outbreak, we are seeing many acts of kindness and even heroism. Neighbors look out for one another by buying groceries or singing songs together. When doctors, nurses, and paramedics ran out of masks, people donated or sewed new ones.

But not all people act kindly when feeling threatened. There are those who hoard medical supplies or refuse to stay physically distant from others. Sadly, some become more selfish when they think we're competing against each other for survival.

How can we avoid reacting in self-serving or vindictive ways during the pandemic? A new study suggests that practicing a little gratitude may be useful.

In this study, participants from the National University of Singapore played the "Trucking Game"—a research tool that measures how people bargain or cooperate in conflict situations. In the game, players try to get from point A to B as quickly as possible, while opponents can assist or block players at will. The game is over when both players reach their end point.

Before playing the game, some participants were asked to write about a situation that made them feel grateful, while others recalled events that brought them joy or were emotionally neutral (like their daily routine). When it came time for participants to play the game, they didn't know the other player wasn't a real person but a set of pre-programmed, highly competitive moves.

Participants had opportunities in the game to thwart the other player by blocking routes along the way or not stepping aside to let them pass, and many of the participants did so when faced with a competitive opponent. However, those induced to feel gratitude were much less likely to block their opponent's progress than those who'd been primed to feel joy or no particular emotion.

While not entirely surprised by these findings, study coauthor Lile Jia was impressed by them—especially given how competition usually brings out our worst instincts.

"Showing that gratitude can ameliorate competitive impulses in this setting speaks to the potency of this emotion in reducing undesired competition," says Jia.

To further test these results, he and his colleagues set up another experiment, this time using a random group of Americans of various ages (instead of the original group of Singaporeans, to see how culture might affect results). Participants were told they would be paired with another player (though, actually, there was no other player) to compete in a moderately difficult and timed word game. Before playing the game, they were induced to feel either gratitude or a neutral emotion.

After playing the game—in which participants were always told they lost—the researchers showed them a narrative describing their opponent as either competi-



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▲ Practicing gratitude can help people cooperate toward the shared goal, research suggests.

“Showing that gratitude can ameliorate competitive impulses in this setting speaks to the potency of this emotion in reducing undesired competition.”

Lile Jia, study coauthor

tive or not very competitive. The idea was that losing to a very competitive person might make participants feel more upset about losing and make them want to punish their opponent.

After "losing," participants were told that their opponents would be entering another competition that involved solving anagrams for a chance to win a cash prize. The participants could choose one of three clues to help their opponent solve the anagrams more quickly, with clues ranging from least helpful ("it starts with the letter P") to most helpful ("it starts with the letter P and it's an organ in your body"). Choosing less helpful clues was considered a form of vindictiveness.

Results showed that participants induced to feel gratitude were much more likely to give the most helpful clues than participants in a neutral mood. Even under circumstances where they might want revenge, people who felt grateful were less likely to be vindictive.

"Sabotaging their partner's chance of winning a lottery did not directly benefit the participants, who had already been eliminated from the competition—yet this harmful impulse existed," says Jia. "Fortunately, the impulse was weakened among those induced to feel grateful."

Why would gratitude reduce feelings of vindictiveness? Jia says it might be because grateful people are less selfish and show greater empathy toward others, in general. Given that people often respond to competition by becoming more competitive themselves—at the expense of others—it's little wonder that gratitude might reduce this tendency.

Jia's study adds to our understanding of

the power of gratitude by showing how it helps people be kinder to others in unfavorable as well as favorable circumstances. This could have huge consequences when we are in situations where we may be tempted not to cooperate or to lash out at others—like during the current pandemic.

"In such threatening interactions, destructive behavioral cycles are easily established," says Jia. "The present research underscores the potential of gratitude in stopping such destructive spirals."

Jia points to other ways gratitude can help during the pandemic, too—by strengthening relationships and building a sense of community.

Research suggests that practicing gratitude helps people "gel," he says, encouraging them to coordinate their actions toward a particular goal—something relevant to our current need to shelter in place. So long as cooperation is the norm in this situation, and grateful people don't feel that they are being taken advantage of, encouraging more gratitude is all to the (greater) good.

Jia's research reinforces the importance of practicing gratitude as we go through this pandemic. Not only will it help us be more cooperative, it's good for our personal well-being, too—protecting our mental health and making us feel more positive and optimistic about the future.

"If we take a broader look at the benefits of gratitude, then the argument for encouraging feeling more gratitude becomes all the stronger," says Jia.

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Life Today Is Far More Stressful for Middle-Age Men Than in the 1990s

Everyone is slightly more stressed than in previous decades, but 45- to 64-year-old men have been hit hardest

MAT LECOMPTÉ

Middle-aged men are facing more stress compared to those a few decades ago—even before COVID-19 started spreading across the globe.

According to a study led by a team of researchers from Penn State, there is a slight increase in daily stress for everyone compared to the 1990s. However, when researchers looked at samples of men between the ages of 45 and 64, there was a sharp increase in daily stress.

"On average, people reported about 2 percent more stressors in the 2010s compared to people in the past," said David M. Almeida, professor of human development and family studies at Penn State. "That's around an additional week of stress a year. But what surprised

us is that people at mid-life reported a lot more stressors, about 19 percent more stress in 2010 than in 1990. And that translates to 64 more days of stress a year."

The Changing Health of Adults

The findings are part of a larger project aiming to discover whether the health of middle-aged adults has been changing over time.

"Certainly, when you talk to people, they seem to think that daily life is more hectic and less certain these days," Almeida said. "And so, we wanted to actually collect that data and run the analyses to test some of those ideas."

The study used data collected from 1,499 participants in 1995 and 782 different people in 2012. All participants were in-



FIZKES/SHUTTERSTOCK

▲ Participants had significantly more daily stress and lower well-being in the 2010s compared to the 1990s.

terviewed daily for eight consecutive days and asked about their stressful experiences throughout the previous 24 hours. This included work stress, family stress, or feeling overwhelmed. They were also asked how severe their stress was and whether those stressors were likely to impact other areas of their lives.

"We were able to estimate

not only how frequently people experienced stress, but also what those stressors mean to them," Almeida said. "For example, did this stress affect their finances or their plans for the future. And by having these two cohorts of people, we were able to compare daily stress processes in 1990 with daily stress processes in 2010."

The study was able to conclude that participants had significantly more daily stress and lower well-being in the 2010s compared to the 1990s. Participants also reported a 27 percent increase in the belief that stress would affect their finances and a 17 percent increase in the belief that stress would affect their future plans.

"We thought that with the economic uncertainty, life might be more stressful for

younger adults," Almeida said. "But we didn't see that. We saw more stress for people at mid-life. And maybe that's because they have children who are facing an uncertain job market while also being responsible for their own parents. So, it's this generational squeeze that's making stress more prevalent for people at mid-life."

So, if life feels more stressful now than it did a few decades ago, you are not alone. While many people believe a stereotype about a midlife crisis due to a fear of death and getting older, the study findings suggest midlife distress may be due to different reasons.

Mat Lecompte is a freelance health and wellness journalist. This article was first published on Bel Marra Health.

Change Your Visuals, Change Your Habits

What we see around us can prompt us to act, so it's a good idea to hide temptations

JOSHUA BECKER

I bought some almonds over the weekend. I especially like those Wasabi Soy Sauce almonds from Blue Diamond, so I bought a jar. Not a big deal, just a little snack.

Except that I did something unusual with this jar of almonds. I left them out on my counter—right in front of where I like to write.

And guess what? I can't stop eating them. Every time I look up from my computer, there they are. So I walk over to grab a few ... every couple sentences. I've gone months without eating almonds, but now, all of a sudden, I can't seem to stop.

I see them and I want them—almost intuitively.

This is not a phenomenon unique to me (or almonds).

In fact, there is a lot of research supporting this hypothesis that the visuals in our environment impact our behavior.

The things we see affect our habits. From food and cigarettes to work and social media, the items in our field of vision influence us—every minute of every day.

Of course, in this reality of human nature, there is opportunity.

If we change our visuals, we can change our habits.

Changing our environment is one of the easiest and most significant steps we can take to change our habits.

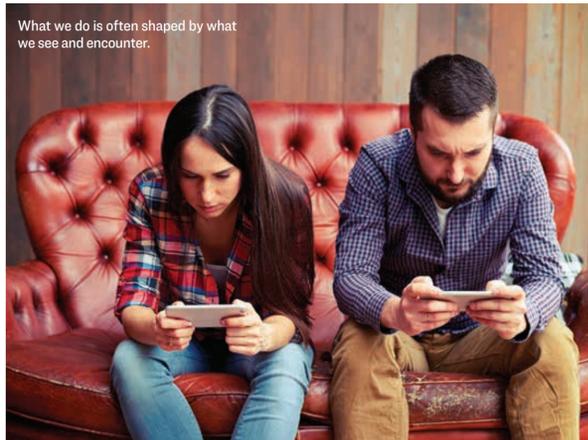
Want to eat less junk food? Remove it from your pantry and your countertop.

Want to watch less television? Remove your large screen from your living room or bedroom.

Want to play fewer video games? Remove your console.

Want to waste less time on your

Changing our environment is one of the easiest and most significant steps we can take to change our habits.



phone? Remove your time-wasting apps. Or better yet, put your phone away in a drawer when you get home.

Want to shop less? Unsubscribe from email newsletters or throw away junk mail before it enters your home.

Want to spend less money eating out? Take a different route home—away from all the restaurants.

From home and office to the work that we do, the physical items around us have a significant impact on habits. Remove those that do not contribute to your best life.

Does removing items from our field of vision solve all our problems and immediately result in a more disciplined, meaningful life? Of course not.

We still need to replace unhealthy habits with healthy habits. But this can also be accomplished by placing healthy visuals in front of us.

Life change is never easy. But there are some steps we can take to bring it about easier.

Changing our visuals is one of them.

Now, excuse me, while I go grab another almond.

Joshua Becker is an author, public speaker and the founder and editor of "Becoming Minimalist" where he inspires others to live more by owning less. Visit Becoming-Minimalist.com



Better to stock the fridge with healthy foods than problematic indulgences.

Public Health

Rarely Spotlighted Until It's Too Late

While the big money goes to health care, public health is the broader guarantee of our well-being

Choices on public health can come back to haunt us.



JULIE ROVNER

The United States is in the midst of both a public health crisis and a health care crisis. Yet most people aren't aware these are two distinct things.

And the response for each is going to be crucial.

If you're not a health professional of some stripe, you might not realize that the nation's public health system operates in large part separately from the system that provides most people's medical care.

Dr. Joshua Sharfstein, a former deputy commissioner for the Food and Drug Administration and now vice dean at the school of public health at Johns Hopkins University in Baltimore, distinguishes the health care system from the public health system as "the difference between taking care of patients with COVID and preventing people from getting COVID in the first place."

In general, the health care system cares for patients individually, while public health

is about caring for an entire population. Public health includes many things a population takes for granted, such as clean air, clean water, effective sanitation, food that is safe to eat, as well as injury prevention, vaccines, and other methods of ensuring the control of contagious and environmental diseases.

In fact, it is public health, not advances in medical care, that has accounted for most of the increases in life expectancy during the past two centuries. Well before the advent of antibiotics and other 20th-century medical interventions, public health activities around clean water, food safety, and safer housing led to enormous gains.

"It's pretty invisible" if the public health system is working well, said Sharfstein, who also once served as Maryland's state health secretary. "It's the dog-that-doesn't-bark agency."

But while public health isn't as flashy as a new drug or medical device or surgical procedure, it can simultaneously affect many more lives at once.

Dr. Arthur Kellermann, a former emergency-room physician and public health researcher at Emory University

"I'm sure I saved more lives keeping Georgia's motorcycle law on the books than all the trauma resuscitations I did."

Dr. Arthur Kellermann, former emergency-room physician and public health researcher, Emory University

in Atlanta, told me: "I'm sure I saved more lives keeping Georgia's motorcycle law on the books than all the trauma resuscitations I did."

Still, because the public health system mostly operates in the background, it rarely gets the attention or funding it deserves until there's a crisis.

Public health is "a victim of its own success," said Jonathan Oberlander, a health policy researcher and professor at the University of North Carolina-Chapel Hill.

"People can enjoy clean water and clean air but don't always attribute it to public health," he said. "We pay attention to public health when things go awry. But we tend to pay not a lot of attention in the normal course of events."

Public health as a scientific field was created largely to address the sort of problem the world is facing today. Sharfstein noted that Baltimore established the nation's first public health department in 1793 to address a yellow fever epidemic. But between emergencies, the public health domain is largely ignored.

Continued on Page 11

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Herbal Formula Eases Aches and Pains

Steuart's Pain Formula uses a unique blend of safe, natural pain fighters to help you reclaim your life and get back to the things you love. No burning or irritation (menthol and capsaicin-free); leaves no odor or residue; stops pain fast. Promotes healing, with no side effects.

Pain Formula penetrates skin quickly to carry a special extract of the pain relief plant (Arnica) and healing stimulation from the herb Comfrey straight to your source of pain. Steuart's Comfrey is grown especially for Pain Formula, and it's extracted using a "first-of-its-kind" proprietary technique. The result is a potent solution like no other for muscle and joint pain; pain sufferers can get back to their favorite activities, stimulate healing, and fight inflammation.

Mark Newhall, Editor, FARM SHOW: "My dad, who is 93, goes through about 6 bottles of Pain Formula a year. He uses it on his knee every day. He tells me he's never found anything else that works even a fraction as well as Steuart's. The direct quote from my dad is, 'I don't know how I would get by without Steuart's Pain Formula.'"

Davey Peterson, Mabel, Minn.: Davey had been experiencing very sharp pain in his left knee for several months. His job as a welder kept him on his feet; his workday was painful and it was difficult to sleep. He started using Steuart's Pain Formula each morning and is able to work pain-free. His sleep is uninterrupted by his pain. He says "I am so glad I tried this product and I recommend it to others!"

Daniel Poray, Alexandria, Va.: "I was diagnosed with arthritis in my right leg and knee. I use Steuart's Pain Formula twice a day and the pain has dramatically gone away and my movement, flexibility and range of motion have increased. The doctor recommended a cortisone shot but I was skeptical. Then I found Steuart's and glad I did!"

Betty Brooks, Buhl, Idaho: "I put Pain Formula on my knees about 10:00 a.m. this morning, and it's now 9:00 p.m. and I'm still pain-free. I've had knee surgery and tried just about every product on the market - and this works. I've had a very good day! I could feel it working as soon as I put it on."



War broke out in Eastern Ukraine in 2014 between Ukraine and Russia-backed separatists. In April of 2015, Gary Steuart reached out to the Ukraine military in the war zone, and was able to introduce Steuart Lab's products to the medical personnel and soldiers.

One person who became familiar with Steuart's products was a Special Operations soldier named Andre. In 2018, Andre was injured in a vehicular accident. He had multiple fractures to his left leg. He started using Steuart's Pain Formula. He applied it topically twice daily. He experienced significant pain relief. Steuart also advised him that the product would stimulate healing because it contains Comfrey, a recognized healing agent.

One year later, Andre's leg is healed and he has returned to active duty. His doctors in Kiev told him that his expected recovery time was shortened by using Steuart's Pain Formula. Other Steuart's products used by Ukraine military include Steuart's Wound Cream, Propolis Tincture, and Foot Cream.



The larger 5-oz. size Pain Formula sells for \$34.90. A smaller 1.8 oz. bottle sells for \$18.90. Shipping is free within the continental US with code ET20.

Tom Donelson, Fargo, NDak.: He has been using Steuart's Pain Formula for over 2 years. "I give samples to anyone I meet who complains of joint or muscle pain. I've had minor knee surgery and a torn meniscus, as well as a degenerating disc. I originally used to take 2 to 3 ibuprofen a day. But now, after using Steuart's, I'm down to 2 to 3 a week. This product is great for anyone that doesn't want to or can't take drugs to manage pain. One woman I gave a sample to had jaundice in her liver from taking pain medication for arthritis. She's off medication and completely satisfied with this alternative. It's a wonderful product!"

No-hassle Money Back Guarantee

"If you find that Steuart's Pain Formula doesn't give you the relief you need, we will issue you a prompt, courteous refund - no hassles, catches, or hoops to jump through. You can even use the ENTIRE bottle. Just send back your receipt and empty container, and we'll refund your payment as soon as possible." -Steuart

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Many of us don't think much about tea, other than that it's an alternative to coffee and you get it in Chinese restaurants. After water, tea is the second most consumed beverage on our planet.

**The Health
Benefits of Tea**

Green tea is packed with vitamins and antioxidants

LYNN JAFFEE

I love to think about sipping a cup of tea on a friend's deck at the base of the Rockies, savoring the view and catching up on life. Drinking tea is something I associate with good memories and comfort. There are also memories of times camped somewhere in the desert, when I crawled out of my sleeping bag for my first cup of tea of the day. And I think of the many times when I've been sick or upset, when a warm cup of tea has coaxed me back from the brink.

Many of us don't think much about tea, other than that it's an alternative to coffee and you get it in Chinese restaurants. However, tea is the second-most consumed beverage on our planet, only behind water. In addition, tea has some very real health benefits. Here are some other things you may not know about this fabulous drink:

1) Tea comes from the plant *Camellia sinensis*. It's grown in temperate countries around the world, most notably China and India. White, yellow, green, oolong, black, and pu-erh teas all come from the *Camellia* plant, but are processed differently to achieve different tastes.

2) Herbal teas contain fruits and herbs, but are made without *Camellia* tea leaves. Herbal tea can be consumed for its flavor or for health benefits. In Chinese medicine, one of the primary ways medicinal herbs are consumed is boiled in water as a decoction, which is essentially an herbal tea. Some common herbs that can be steeped into a tea include mint, ginger, cinnamon, and chrysanthemum.

3) Why is green tea served in Chinese restaurants? The answer is based on Chinese dietary therapy, in which you need a little warmth, or digestive fire, to properly digest your foods. When you drink an ice-cold beverage with your meal, it slows down your digestion. All that cold demands energy from your body to warm up your food, digest it, and convert it into nutrients. Therefore, a little warm tea is considered a digestive aid.

4) Tea is healthy for you in other ways, too. A little tea is good for you if you have asthma, as it's considered to be a bronchodilator—it can open up your lungs. In addition, research studies are suggesting that tea offers protective effects against cancer. Not convinced?

Tea is also packed with vitamins and antioxidants to counteract oxidative stress to your body from free radicals which increase your risk for disease and accelerate the aging process.

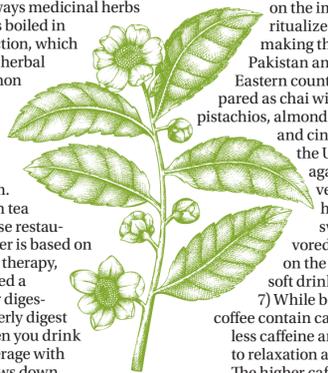
5) Tea comes in loose leaves and, for convenience, in tea bags. However, the trade-off for the convenience of tea bags is that the tea leaves dry out and lose their flavor faster, the leaves are broken in the process of bagging them, and the small size of a tea bag causes the leaves to be packed tighter and less able to diffuse properly when steeping. So if you want the best taste, consider a tea ball and loose tea. Or, if you like your tea in bags, keep it air tight and drink it sooner rather than later.

Tea is the second most consumed beverage on our planet, only behind water. In addition, tea has some very real health benefits.

6) While tea is the second-most consumed beverage worldwide, cultural connections to this flavorful drink vary widely throughout the world. In Great Britain, there is high tea with lots of food and pastries, but the tea ceremonies of China and Japan focus on the importance and ritualized precision of making the tea itself. In Pakistan and other Middle Eastern countries, tea is prepared as *chai* with a mixture of pistachios, almonds, cardamom, and cinnamon. In the United States, against all convention, tea has been iced, sweetened, flavored, and has taken on the persona of a soft drink.

7) While both tea and coffee contain caffeine, tea has less caffeine and lends itself to relaxation and reflection. The higher caffeine content in coffee makes it a little edgier and more energizing. When I'm feeling under the weather, herbal tea is my first choice. However, when I want to relax, catch up with friends, or catch the sunrise, I'll make myself a cup of green tea.

Lynn Jaffee is a licensed acupuncturist and the author of "Simple Steps: The Chinese Way to Better Health." This article was originally published on *AcupunctureTwinCities.com*



Tea comes from the plant *Camellia sinensis*. It's grown in temperate areas around the world.

Public Health

Rarely Spotlighted Until It's Too Late

While the big money goes to health care, public health is the broader guarantee of our well-being

Continued from Page 9

"In the U.S., 97 cents of every health dollar goes to medical care," he said. "Three cents goes to public health."

It wasn't that long ago when rebuilding the nation's public health infrastructure was a top priority. In the wake of the Sept. 11, 2001, terrorist attacks and the anthrax attacks a month later, Congress devoted significant time, attention, and dollars to public health.

Emerging from that flurry of activity from 2001 to 2004 was a bipartisan bill providing more than \$4 billion to dramatically expand the nascent Strategic National Stockpile, to rebuild and modernize the capacity of state and local public health departments to deal with public health emergencies and to further protect the nation's supply of drinking water from potential terrorist attacks. Also created during that period was Project Bioshield, a federal program to provide incentives to private industry to develop vaccines and countermeasures for biological terror agents as well as naturally occurring biological threats.

But as the threat of biological terrorism seemed to wane, so did public health funding from Congress and the states. After accounting for inflation, funding for the federal Centers for Disease Control and Prevention has decreased over the past de-

cade, according to the Trust for America's Health, a nonpartisan research and advocacy group.

And while the Affordable Care Act established a public health fund worth \$15 billion over 10 years—the Prevention and Public Health Fund—it has been repeatedly raided by both parties in Congress to pay for other, sometimes non-health items. For example, the fund was cut by more than \$1 billion in 2018 to help cover the costs of a bipartisan budget bill.

Those choices on public health can come back to haunt us. Now, as the United States mourns the COVID-19 deaths of more than 90,000 people in just about three months, public health professionals again have the attention of policymakers. The question for them is, how best to seize the moment?

"The trick is to put in solutions that will work for a long time," said Sharfstein. "It really matters how you handle a crisis because it might determine how you handle the next 50 or 60 years."

The clock is ticking.

Julie Rovner is KHN's chief Washington correspondent. She has covered health care for more than 30 years and offers insight and analysis of policies and politics in her regular *HealthBent* columns. This article was originally published on *Kaiser Health News*.



While public health isn't as flashy as a new drug or medical device or surgical procedure, it can simultaneously affect many more lives at once.

**iPhone 11 May Emit Over 2 Times
the Legal RF Radiation Limits**

Research identifies health concerns with cellphone technology even as companies create more powerful devices

As the use of mobile devices grows, health officials have raised concerns about the harm they may have on human health. Radiofrequency (RF) radiation is a leading cause for concern, and a troubling report published by the RF Exposure Lab located in San Marcos, California, found that RF emissions put out by the iPhone 11 may be more than twice the allowable amount listed by the U.S. Federal Communications Commission.

Critics of the study quickly pointed out that the devices tested include iPhones housed in Gadget Guards using alara technology, both of which are sold by the company Penumbra Brands, which commissioned the study.[i]

But while the test results did cause some controversy among health officials and Apple product users, the underlying concern regarding the possible adverse effects of RF radiation on the body remains.

How RF Radiation Affects the Body
As use of cellular devices and exposure to RF radiation levels have increased, health officials and consumer watchdogs have raised concerns about the possible long-term risks of RF radiation exposure. Multiple studies have been conducted to test whether varying levels of exposure are safe and to determine what effects it has on our health. The results are varied, but concerning:

- In 2011, the International Agency for Research on Cancer (IARC) listed RF radiation as a possible human carcinogen.[ii] The IARC also states that the

While researchers agree they don't yet fully understand the potential ramifications radiofrequency radiation exposure could have on human health, these studies and others like them indicate there is cause for concern.

Eliminate or limit children's time on cellphones, as they may be most susceptible to this type of radiation.



BEATRIZ VERA/SHUTTERSTOCK

use of mobile devices raises levels of RF radiation exposure to potentially hazardous levels.[iii]

- The Hardell group, an oncology group based in Sweden, found that patients who were exposed to RF radiation before the age of 20 had the highest risk of glioma, a rare but malignant type of brain tumor.[iv],[v] The studies also indicated that RF radiation from cellphones significantly raised the risk of developing acoustic neuroma, a noncancerous tumor that grows in the inner ear.[vi]
- The U.S. National Toxicology Program (NTP) reported significant increases in incidence of glioma, malignant schwannoma, and DNA damage to multiple organs from RF radiation exposure in large animal studies.[vii]
- A 2015 animal study concluded that human exposure to RF radiation should be as limited as possible after finding a significant increase in heart schwannoma and malignant tumor incidence in rats exposed to RF radiation.[viii],[ix]
- DNA damage was found to be higher in the ear canals of participants exposed to non-ionizing electromagnetic fields from using cellphones than in participants who did not use cellphones.[x]
- RF exposure may be causing adverse effects in neurodevelopment. Researchers found that infants who were exposed to RF radiation from maternal cellphone use during pregnancy were more likely to have increased blood lead levels. Furthermore, researchers found that RF radiation seems to disrupt the release of melatonin, possibly affecting fetal brain development by impacting the sex hormones of the mother during pregnancy.[xi],[xii]
- According to a report by the Department of Community Medicine in Delhi, India, short-term effects of cellphone use include headaches, dizziness, high blood pressure, and increased heart rate variability when mobile devices were kept near the chest for long periods of time, which could be related to RF radiation exposure.[xiii] Long-term effects of RF radiation damage from mobile devices include DNA and chromosomal damage.[xiv]

Practical Tips to Avoid RF Radiation
While researchers agree they don't yet fully understand the potential ramifications RF radiation exposure could have on human health, these studies and others like them indicate there is cause for concern. According to the Environmental Health Trust Database of World Wide Policies on Cell Phones, Wireless and Health, 45 countries or governing bodies have issued health warnings in regard to RF radiation.[xv]

While it may not be practical to completely remove cellphones and other sources of RF radiation from your life, there are some practical tips you can follow to reduce your exposure to RF radiation from your cellphone:

- Remove cellphones from your bedroom at night.
- When possible, leave your cellphone at home or in another room of the house; avoid carrying your cellphone in your pocket.
- Use a headset or the speaker-mode option as much as possible. When speaking on the cellphone, don't hold it too close to your ear.
- If pregnant, avoid unnecessary RF exposure as there is increasing evidence that RF radiation may cause developmental problems. Do not put your cellphone in your bra or on your stomach.[xvi]
- Switch your cellphone to airplane mode when not in use.
- Eliminate or limit children's time on cellphones, as they may be most susceptible to this type of radiation.

To stay up to date on the latest research studies regarding RF radiation and other public health issues, please visit our *GreenMedInfo.com* database for more information.

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Vitamin D Deficiency in Pregnancy Linked to Higher ADHD Risk in Children

Researchers gain broader understanding of what happens when we don't get enough of the 'sunshine nutrient'

The value of vitamin D cannot be overemphasized, especially for pregnant women. In a Finnish study, the risk of attention deficit hyperactivity disorder (ADHD) was 34 percent greater in children whose mother suffered from a vitamin D deficiency during pregnancy, compared to those whose mother's vitamin D status was sufficient in the first and second trimesters.

Vitamin D deficiency has been linked to wide-ranging health consequences, from dementia and cognitive impairment to the occurrence of various types of cancers. About 1 billion people worldwide have vitamin D deficiency, while half of the population suffers from insufficient levels of the "sunshine nutrient."

Sun exposure takes on greater value and significance in light of new data emerging on vitamin D's importance. A long list of studies verify the benefits of vitamin D, including in the area of maternal health and child nutrition.

Low Vitamin D During Pregnancy Linked to ADHD Risk in Baby
In the study, the Finnish registry identified 1,067 children with ADHD—born from 1998 to 1999 and diagnosed according to International Classification of Diseases standards—and 1,067 matched controls. The data was collected prior to the current recommendation in the country for vitamin D intake during pregnancy, which is 10 micrograms (400 IU) a day throughout the year.

Researchers adjusted for maternal age and socioeconomic status, as well as psychiatric history. Dr. Minna Sucksdorff from the University of Turku in Finland, whose group collaborated with researchers from Columbia University in New York, said in a statement that alongside genotype, prenatal factors such as vitamin D deficiency while



AFRICA STUDIO/SHUTTERSTOCK

pregnant can influence the development of ADHD. Millions of children in the United States have been diagnosed with ADHD. According to a 2016 parent survey, 6.1 million, or 9.4 percent, of children have the condition, with a staggering 4 million of them aged 6 to 11 years.

Controversial Vitamin D Recommendations

Back in 2011, a controversial report on dietary reference intakes for calcium and vitamin D from the Institute of Medicine (IOM) found bone health to be the only area of benefit. The committee also recommended only 600 IU per day of vitamin D and a serum 25(OH)D concentration—a precursor to the active vitamin D form—of 20 ng/ml or 50 nmol/l for people ages 1 to 70 years, and 800 IU per day for those at least 71 years old.

The vitamin D research community, however, was quick to disagree with the official recommendations, citing the very low recommended dose of the nutrient as a failure "in a major way on logic, on science, and on effective public health guidance."

As ADHD emerges as one of the most prevalent chronic conditions among children, the study results may have great significance for public health, according to primary investigator professor Andre Sourander. He pointed to vitamin D deficiency as a global problem, where levels among mothers in several immigrant groups, for instance, languished at insufficient amounts.

A previous study demonstrated that the effects of vitamin D during fetal development are mostly mediated through the active form of vitamin D called 1,25-dihydroxy vitamin D binding to vitamin D receptors. This then regulates the expression of more than 200 genes, specifically upregulating some two-thirds and downregulating the remaining one-third.

Estimates from a population study for the world's six geopolitical regions pinpointed a reduction in all-cause mortality rates from higher mean serum 25(OH)D concentrations. Serum 25(OH)D, also known as calcifediol, is a prohormone that is produced in the liver using vitamin D. Doctors measure calcifediol to determine the body's vitamin D levels.

The researchers also looked at the relationships between serum 25(OH)D and disease outcomes for conditions ranging from cancer and cardiovascular disease to diabetes, Alzheimer's, multiple sclerosis, and more.

Millions of children in the United States have been diagnosed with ADHD. According to a 2016 parent survey, 6.1 million, or 9.4 percent, of children have the condition, with a staggering 4 million of them aged 6 to 11 years.

The GreenMedInfo.com database provides at least 573 abstracts with vitamin D deficiency research to help you make informed choices about your vitamin D levels.

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Dementia: Eating Plenty of Apples, Berries and Tea Linked to Lower Risk

New research takes detailed look at effects of flavonoids on 2,800 participants over nearly 20 years

ELEFTHERIA KODOSAKI & KEITH MORRIS

We're often told to eat more fruits and vegetables—and for good reason. Many of the nutrients found in fruits and vegetables are responsible for important health benefits, in particular preventing a wide range of diseases, including heart disease and diabetes.

A growing body of evidence even suggests that flavonoids, a group of compounds found in almost every fruit and vegetable—including tea, citrus fruit, berries, red wine, apples, and legumes—can actually reduce your risk of developing certain cancers, heart disease, and stroke. Now, recent evidence suggests that diets high in flavonoids can lower your risk of dementia.

Flavonoids are thought to lower cancer risk by making malignant cancer cells less able to divide and grow. They also act as antioxidants, which can prevent or slow damage to cells caused by unstable molecules. They even reduce inflammation in the body, which is a common feature of many chronic diseases. Most of these mechanisms explain the health benefits reported in animal or cell-based studies. The data from these studies can reveal how flavonoids work on the



ZIGAG MOUNTAIN ART

human body as well.

However, previous studies using animal or cell models don't necessarily translate to people. In humans, even when diets are high in flavonoids, these aren't always readily absorbed into the gut. Flavonoids are also difficult to study as they belong to a very diverse group of chemical compounds. Not much is known about how they are metabolized after being consumed, or their potential to enter and act in certain tissues of the body, such as the brain.

We know that Alzheimer's disease is associated with a number of factors, including genetics, family history, aging, environmental factors, health conditions (particularly obesity and

diabetes), race, and sex. This is why predicting and preventing the disease is often difficult. But several studies suggest that consuming flavonoid-rich diets can help manage some of the symptoms of Alzheimer's disease and benefit cognitive ability. Which perhaps is not surprising, as dementia is linked to chronic diseases such as diabetes, cardiovascular disease, and stroke. Flavonoids have been shown to help manage and prevent these diseases.

Until now, studies have struggled to pinpoint which flavonoids make the difference. This latest study has been able to show which flavonoids are linked with lower risk of dementia.

Alzheimer's and diet

The recent study published in The American Journal of Clinical Nutrition is one of the most detailed to date.

Researchers followed 2,801 subjects between the ages of 28 and 62 over a period of 19.7 years. Participants had their consumption of flavonoids measured throughout. These numbers were also statistically adjusted if participants changed the amount of flavonoids they ate on average during the study.

The researchers found that higher long-term dietary intake of flavonoids is associated with lower risks of dementia in American adults.

Given the complexity of flavonoids, the authors looked at the effect of different types of flavonoids in the diet. They found those eating a higher amount of three classes of flavonoids (specifically flavonols, anthocyanins, and flavonoid polymers) had lower risk of dementia. Flavonols and anthocyanins had a similar association with Alzheimer's specifically.

The foods they looked at included orange juice, tea, oranges, apples, blueberries, pears, and strawberries. Tea, apples, and pears were common sources of flavonols and flavonoid polymers. Anthocyanins are found in berries and red wine.

However, these types of studies can be affected by many variables in the sample study. These include a wide range of population factors, known as "confounders," that have to be accounted for, as they can impact the reported results. Confounders can include anything from social status, gender, race, to weight or occupation.

The study accounted for several confounders including age, sex, education level, energy intake, smoking, cholesterol levels, hypertension, genetics, and diabetes. They were able to show that regardless of these confounders, eating a diet rich in flavonoids over your lifetime helped reduce Alzheimer's risk.

Though this study doesn't explain why flavonoids have this beneficial effect on Alzheimer's disease, it's clear that high, long-term dietary intake of a wide range of flavonoids is associated with lower risks of dementia in adults. However, it doesn't claim flavonoids cure dementia, nor will consuming flavonoids on their own prevent it.

Researchers found those eating a higher amount of three classes of flavonoids had lower risk of dementia.

Eating foods high in flavonoids will be even more beneficial alongside other lifestyle changes, such as quitting smoking, managing a healthy weight, and exercising.

Eleftheria Kodosaki is an academic associate at the Cardiff Metropolitan University in Wales, and Keith Morris is a professor of biomedical sciences and biostatistics at the Cardiff Metropolitan University. This article was first published on The Conversation.

Sleep Like a Baby During the COVID-19 Crisis

10 tips to get a great night's sleep even amid the stress of a global pandemic

THE

FAUSTIN ETINDELE

The crisis created by the COVID-19 pandemic has created a generalized climate of anxiety, which has increased stress levels that can lead to insomnia—even in people who do not usually suffer from it. While it is true that good sleep is essential to health in normal times, this becomes even more the case in this period of confinement.

Sleep of good quality and of sufficient duration is essential to being mentally and physically functional. Conversely, poor sleep can put a person at risk. Lack of sleep, whether or not it is caused by a physiological or behavioral disorder, increases obesity, reduces immunity, impairs job performance, memory, and many other functions.

In my research in sleep medicine and social epidemiology, I analyze sleep disorders in atypical cases, such as people with Parkinson's disease, call center and customer service workers, or video game players.

Here are 10 recommendations to promote sleep, based on both my observations and the scientific literature:

1. Establish a regular schedule. Regular bedtime and wake-up times will help you maintain a healthy sleep routine.

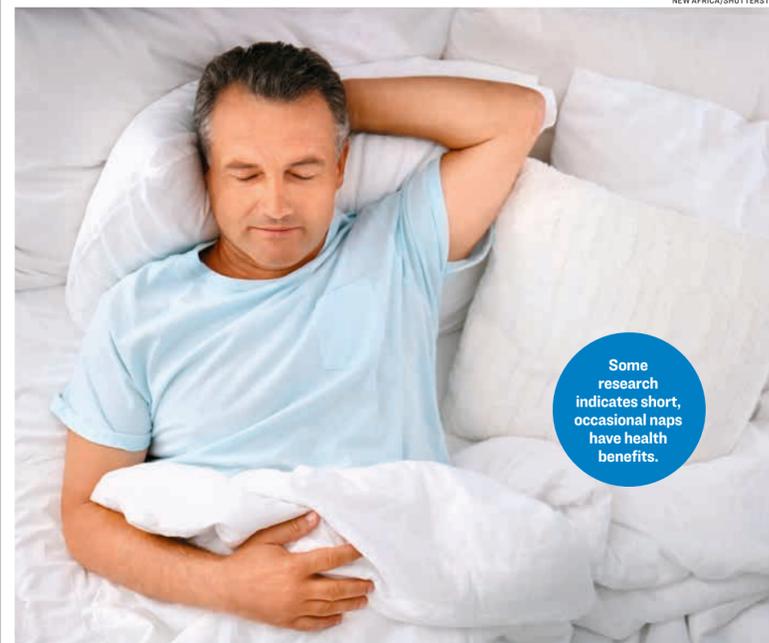
2. Keep in contact with natural light. Open your windows or get outside and expose yourself to sunlight. This can be good for improving your mood and regulating your body clock. In addition, it is an opportunity to get some fresh air in a controlled manner for a short period of time.

3. Maintain daily physical activity. Staying active during social distancing helps you build up enough body fatigue to fall asleep more easily and get a deeper sleep.

4. Limit naps. Unless you have had very little sleep the previous night, it is important to avoid sleeping during the day or in the afternoon, as this reduces sleep pressure and increases the risk of insomnia. Some research, however, indicates the health benefits of short, occasional naps.

5. Maintain a social life. Bad news in the media can create anxiety. It is important to use your social networks to seek

It is better to adopt a healthy lifestyle than to resort to medication, both in normal situations and during confinement due to COVID-19.



Some research indicates short, occasional naps have health benefits.



FOXADRO/SHUTTERSTOCK

Exercise Ideas for Older Folks Stuck at Home

Gentle exercises can help vulnerable seniors maintain muscle mass

MOHAN GARIKIPARITHI

The longer you're at home isolating, the larger the toll it can take on your health. This is especially true if you're spending a lot of time sitting around.

Older folks, in particular, are at a higher risk of potential damage from inactivity. The more inactive you are, the higher the chance for illness and injury you have. Loss of muscle, strength, and endurance are also major concerns that can increase chances of frailty.

So, how can you increase activity in your home? It's a lot easier than you think. Finding little ways to incorporate fitness into your day can make a big difference in helping to maintain and strengthen muscle.

The results could be less joint pain, a healthier heart, lower risk for falls, and a healthier metabolism. Including activity into sedentary periods is one place to start. So, when you're chatting on the phone, walk around your home. Hit every corridor

and staircase if possible and try to move throughout the duration of the phone call.

You can also commit to doing laps of your home during commercial breaks of your favorite television shows. If you're more into streaming, get up every 30-minutes for a few laps before flipping it back on.

It's pretty easy to get sucked into a Netflix hole, so set a timer if need be.

Aerobic activity like walking and climbing the stairs can help lower blood pres-

sure and support from friends and family to keep your spirits up and maintain your mental health. This is especially important when living alone or away from family.

6. Be disciplined in your diet. Avoid drinking coffee in the afternoon as it can cause nervousness and delay sleep in the evening. Eating large, overly rich meals before going to bed can also delay sleep, though some people have no problem sleeping, even if they drink a lot of coffee and eat a lot.

7. Avoid backlit devices before bedtime. New technologies are an integral part of our lives and we're all a little addicted to our smartphones, tablets, and laptops. It is important to set them aside at least 30 minutes before your scheduled sleep time. If you're worried you won't be able to do that, you can set the device to "night mode" to reduce its brightness, specifically blue light. This will prevent disturbances in the biological clock and will be beneficial for your quality of sleep in the long term.

8. Avoid staying in bed if you don't sleep. The brain is like a computer, which associates certain events with certain functions. The brain will associate bed and darkness with sleep and trigger the whole process of falling asleep. The brain will not be able to do this if it is distracted by other activities such as video games, homework, physical activity, and alcohol. Do not stay in bed for more than half an hour after going to bed if you are not sleeping. When sleep is delayed, it is best to get out of bed, do a quiet activity, and return to bed only when signs of fatigue—heavy eyelids, yawning, etc.—appear. Reading a book, listening to soft music, doing deep-breathing exercises or yoga, or any other relaxing activity can help.

9. Accept that not all our nights of sleep are perfect or restful. We are all subject to stress and each of us has our own stress management techniques. We must avoid worrying if we haven't slept well for a few days. Often, people have trouble sleeping because of a sometimes trivial problem, an argument with a loved one, or work-related anxiety. Identifying your stress and learning how to manage it is a good start.

Poor sleep can put a person at risk. Lack of sleep, increases obesity, reduces immunity, impairs job performance, memory, and many other functions.

10. Avoid sleeping pills. Generally, the easy solution is the one that carries the most risk. Prolonged use of sleep aids, such as benzodiazepines or anxiolytics, could worsen a situation that was not initially serious. It is better to adopt a healthy lifestyle than to resort to medication, both in normal situations and during confinement due to COVID-19.

Remember that to be able to work effectively, live well, and take care of your loved ones, you need to sleep well—in normal times or during COVID-19 confinement.

Faustin Etindele is a sleep medicine and social epidemiology fellow at the Université du Québec in Montréal in Canada. This article was first published on The Conversation.

NEW AFRICA/SHUTTERSTOCK

sure and improve heart health. But it's also important to focus on muscle strength.

For the lower body, the squat is a terrific exercise and there are a few easy ways to do it. One is to stand up with your back against the wall. Have your feet slightly in front of you (about a foot or two from the wall) and shoulder-width apart. Bend your knees and slide your back down, keeping it against the wall the entire time.

Go as far down as you can (with knees aligned with your foot) and hold it. Slowly slide back up the wall and repeat.

Another way to include squats into your day is to do a few every time you get up from a seated position. So, sit and stand a few times before moving on to your task.

For your upper body, you can do some counter-push-ups whenever you walk into

the kitchen (place hands on the counter's edge and perform standing push-ups). You can also use soup cans or water bottles to perform arm curls. Those items can also be pressed over the head to activate your shoulders.

Short bursts of activity meshed into your day can help you stay strong and healthy at home. Take advantage of this time to boost your activity levels.

Mohan Garikiparithi holds a degree in medicine from Osmania University (University of Health Sciences). He practiced clinical medicine for over a decade. During a three-year communications program in Germany, he developed an interest in German medicine (homeopathy) and other alternative systems of medicine. This article was originally published on Bel Marra Health.

How Loneliness Hurts Us and What to Do About It

Former US Surgeon General Vivek Murthy's new book, 'Together,' explores how to combat the problem of loneliness

JILL SUTTIE

When Dr. Vivek Murthy served as the U.S. surgeon general during part of the Obama and Trump administrations, he became increasingly concerned at how many people across the country were experiencing loneliness. Even in the hubbub of populated cities, many didn't have close personal relationships, a supportive group of friends, or a sense of belonging within a community, all of which are central to our well-being.

In his new book, "Together: The Healing Power of Human Connection in a Sometimes Lonely World," Murthy synthesizes the research on loneliness, giving us a primer on what it is and how it hurts our physical and mental health, as it decreases our longevity. He also dispenses advice on how to build better relationships and create a more relationship-centered society.

I spoke to him about his book and its implications, both generally and during this time of sheltering-in-place, where social connection is even harder to come by.

JILL SUTTIE: Research shows that we tend to underestimate other people's loneliness compared to our own. Why do you think that is, and how does it affect loneliness?
DR. VIVEK MURTHY: Dr. Vivek Murthy: I think part of the reason we underestimate the loneliness of people is that it's often hidden. Loneliness, unfortunately, carries stigma with it. People who feel lonely often are ashamed to admit it. They think it's equivalent to admitting that they are not likable or that they're socially insufficient in some way.

It can be hard to admit loneliness, even to a spouse. We can be at a party, surrounded by people, and still feel lonely. We often look around us and see people who are seemingly leading happy lives—certainly on their social media feeds—and we assume that we're the only ones who are struggling.

Also, loneliness is hard to see because it doesn't always look like the stereotype of a person sitting alone in a corner. Loneliness can actually manifest in different ways with different people. It can look like irritability and anger, fatigue, reclusiveness, depression, or anxiety. We may chalk these up to other conditions or concerns, but many of these states have their roots (at least partially) in loneliness.

MS. SUTTIE: You write that a third of Americans over 45 years old consider themselves to be lonely. Is that pattern common around the world or more unique to the United States?

DR. MURTHY: Many societies that would consider themselves part of modern-day culture are finding that they have high levels of loneliness among older populations. There are several reasons why that's happening. One is that, as people get older, sometimes they experience greater illness, which can limit their ability to physically go out and see others. Second, as people get older, they often encounter difficulties with hearing and vision, and not being able to hear well, in particular, can be a significant

barrier to engaging with others.

It's important to note that in the United States health care system, we tend to focus on physical illness and don't focus enough on mental health or on vision, dental care, or hearing—areas where we really need to support people. You see that reflected in reimbursement policies; it's still expensive for many older adults to get hearing aids, even if they have coverage from Medicare.

Some of these practical barriers to connecting with others become significant as we get older, but there's also a cultural element here. In the United States and other modern societies, there is extraordinary value that's placed on youth, and as people get older, they often feel less useful to society or less valued simply because they're not young anymore. If we feel we're just a burden on other people, that can impact how we engage with other people and how fulfilling our interactions are.

“**Even if you spend less time with someone, making that time count is really important.**”

Dr. Vivek Murthy, former U.S. surgeon general

MS. SUTTIE: You write that we need three levels of connection—intimate (partner or spouse), relational (circle of friends), and collective (community)—to avoid loneliness. Why is community important?

DR. MURTHY: As human beings, we evolved to need each other and to be part of a community. There's something deeply ingrained in us about wanting to be a part of a shared identity. So, we find ourselves gravitating toward various affinity groups based on shared religious beliefs or shared race and ethnicity or shared nationality or shared interest, and we derive a lot of meaning and value from a common identity with others.

One thing that COVID-19 is highlighting for so many people experiencing physical distancing is not only how important relationships with family and friends are, but also how meaningful our interactions with neighbors, relatives, and strangers in our communities are. How nice it would be to just sit in a coffee shop and work while being surrounded by strangers or to go and shoot hoops on the basketball court with other people! There is a sense of connection we experience, even with strangers, that's very valuable, that makes you feel like you're part of something bigger.

When you understand that we need intimate connection, good friends, and community, you start to recognize why somebody can be in a deeply fulfilled marriage and still feel lonely. And that doesn't mean that your spouse isn't giving you what you need; it just means that we need different types of connection in our life.

MS. SUTTIE: You write that loneliness is bad for you, but solitude can be good. What are the differences between these?

DR. MURTHY: It's important to recognize

that loneliness is a subjective state. It's not about how many people you have around you; it's about how you feel about the connections that you have in your life. Loneliness results when the connections we need are greater than the connections we have.

Solitude is an experience of being alone, but it's pleasant, centering, and grounding, and it's actually quite important in maintaining our emotional well-being. If we allow ourselves moments of solitude and let the noise around us settle, we can reflect on what's happening in our life and simply be in a world that is constantly about doing and taking action. When we approach other people from a place of being grounded and centered, we find our interactions are often more positive, because we can show up more authentically as ourselves.

I believe that in this time of turmoil, when the world seems to be racing faster and faster, the moments of solitude are even more important than they were before. Those few minutes that we take to simply be, to feel the wind against our face, to feel gratitude by remembering three people or three things to be thankful for, can be really grounding and renewing.

MS. SUTTIE: The current pandemic is presenting some unique challenges for people in staying off loneliness. What can we do?

DR. MURTHY: Loneliness was a problem long before we had COVID-19. But I worry that the physical separation we're being forced to observe, and the fear that many people are experiencing right now (about other people being infected and transmitting infections to them), run the risk of deepening our separation from each other, contributing to a social recession that is just as important as the economic recession we will be facing.

It doesn't have to be that way. We can use this moment to step back and take stock of

our relationships and ask ourselves, "What role do we want people to play in our lives?"

We can use this moment to take simple steps to strengthen our connections now for after the pandemic is over. One is making a commitment to spend at least 15 minutes a day with people we love—whether on video conference or by phone. That time can be valuable in helping elevate our mood and make others feel better, too.

Second, we can focus on the quality of the time we have with other people, by listening carefully and by sharing more openly when we're with others. One of the most tangible ways to do that is eliminating distraction. Like many people, I've been guilty of catching up with a friend on the phone while also looking at my inbox or jotting down a question that just popped into my mind.

Even if you spend less time with someone, making that time count is really important. Five minutes of conversation where we're open, listening deeply, and showing up fully is often more fulfilling than 30 minutes of distracted conversation.

Third, you can look for ways to serve others, recognizing that service is a powerful antidote. When we're chronically lonely, our focus shifts inward and our threat level rises. Over time, our sense of ourselves starts to erode as we start to believe that the reason we're lonely is that we're not likable. But service is powerful because it breaks those harmful cycles by shifting the focus from ourselves to someone else in the context of a positive interaction.

Serving others also reaffirms to us that we have value to bring to the world. During this time of COVID-19, service can look like checking on a neighbor, calling a friend to see how they're doing, delivering food to a friend who might be struggling to telework and homeschool their children. Service can be a lifeline in terms of connection.

MS. SUTTIE: Do you hold out hope that the mutual concern and cooperation we're seeing during the pandemic will last into the future?

DR. MURTHY: We were designed as human beings to be connected with each other and to help and support each other, and we see those instincts arise during times of crisis. When a hurricane or a tornado devastates a community, people rise up and come together to face adversity. The challenge is that they often retreat back to their ways of life after that and the lessons of community often get forgotten.

I think with COVID-19, we're seeing a pandemic that we'll remember for the rest of our lives. The intensity, duration, and challenge of this experience are unlike anything we've seen in our lifetime. I hope that will increase the chance that we can hold on to the lessons that we are learning now about the power of community, the importance of relationships, and the truth of our interdependence.

I think one of the most important challenges of our time is deciding whether to continue down the path of deepening loneliness or use this opportunity to choose a different way forward, to build a people-centered life and society. In a truly people-centered world, we prioritize our relationships and where we put our time, attention, and energy. We also design workplaces to strengthen human connection and design schools and curricula to give children a foundation for healthy relationships from the earliest ages.

And we recognize that relationship is at the heart of healthy dialogue and, without dialogue and community, people can't talk about the big challenges they're facing and find a way forward. When we're faced with big challenges—like climate change, future pandemics, and health care and economic disparities—we

“**Loneliness can actually manifest in different ways with different people. It can look like irritability and anger, fatigue, reclusiveness, depression, or anxiety.**”

Dr. Vivek Murthy, former U.S. surgeon general

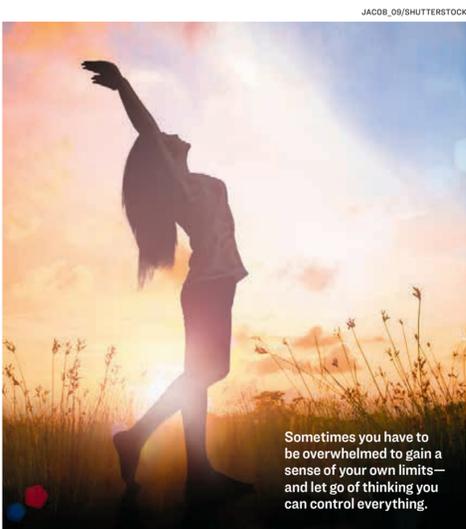
need to be able to work together, which stems from our ability to talk to and truly listen to one another. You don't bring people together in dialogue just by putting them in the same room and hoping something happens; dialogue is built on relationships.

Medicine is intuitively built on an understanding of relationships, but that wasn't a prominent part of my training. Our doctors and nurses need to be able to understand just how important loneliness is for the health outcomes that they're trying to optimize. They should be able to identify loneliness when it exists and have a conversation with patients about it, without taking on the entire burden of solving loneliness themselves.

We need more partnerships between the health care system and community organizations, which can step in and help support people who need stronger connections. This is what's behind the "social prescribing" movement in the United Kingdom and other countries, where health care systems are partnering with community organizations to identify people who are struggling with loneliness and then getting them resources, support, and the community they need.

Once we ask the question, "How do we put people first?" we get a different answer than if our primary objective is to maximize revenue or maximize power or another outcome that's not human-centered. If I had a single credo for this book, it would be three simple words: Put people first. That's the credo we need to guide ourselves in our own lives and as we design our institutions and public policy.

Jill Suttie, Psy.D., is Greater Good's book review editor and a frequent contributor to the magazine. This article was originally published by the Greater Good online magazine.



Sometimes you have to be overwhelmed to gain a sense of your own limits—and let go of thinking you can control everything.

MINDSET MATTERS

Why Surrender Is So Powerful, and How to Experience It

Surrender happens when we know that we can't think our way through our predicament

NANCY COLIER

Surrender is at the heart of many spiritual practices; it's both powerful and profound. But what does it mean to surrender?

Surrender is too often misunderstood—boiled down to a few affirmations about "letting go," and then misused as a self-help instruction. But, in our misunderstanding, we drain surrender of the true miracle that it is.

First, it may be helpful to define what surrender is not. Surrender is not failure, defeat, or punishment.

At some point, we all encounter a situation that rocks the foundation of who we are and what we think we can bear. Sometimes, it's a long-term situation, and at other times, it's a sudden event that overwhelms us and renders our usual coping strategies useless. While the details may differ, what these experiences share is the power to bring us to our knees, figuratively, and often literally.

They also have the power to change us.

Our minds try to control everything we encounter; that's their nature. Ostensibly, our minds do this to try to make us happy and improve our lives. We have seemingly endless

strategies for trying to ensure that our lives contain the experiences we want and don't contain the experiences we don't want.

Our minds will fight, reject, ignore, push against, and maneuver in order to change situations that we don't want. And then there comes a time when we can't keep fighting, either because it's too painful or because we finally understand that it's futile and some other unknown path is needed. Surrender begins here, where all other strategies end. But surrender isn't a strategy; it is the absence of strategies.

Surrender happens when we know that we don't know any-

thing anymore, and certainly not anything that can help us. It arrives when we can't think our way through our predicament. In true surrender, we don't know if what's to come will be better or worse, more comfortable or less. All we know is that we can't do it the way we've been doing it a moment longer.

The Path to Surrender

Surrender itself is easy; it's the path to surrender that's excruciating. But what's amazing is that when surrender does arrive, it's accompanied by a great sense of peace. It's not that the situation remarkably gets better or easier, but we feel better when we know we feel down that we can't

fix or figure it out.

Oddly, something within us relaxes when we acknowledge that we don't know the way. We feel an inner softening when we agree to turn it over to something larger—the unknowable, or simply the truth of our own helplessness. From our knees, paradoxically, we feel a remission from the suffering.

When we surrender, we give up, but not in the way that we usually think of giving up. We don't give up on the situation, but rather, we give up the notion that we can manage the situation. We give up the belief that we can make reality different than what it is.

Giving up the mistaken belief

that we are in charge offers profound relief.

Surrender is a true gift. It gives us the opportunity to feel the river of life carrying us, taking us where we need to go. Often, when surrender happens, we don't trust that anything will take care of us or show us the way. That's what makes surrender so unthinkable. But when we finally let go of the reins, the most remarkable opportunity appears, to directly experience a larger source of wisdom and grace. So if surrender only enters when all other strategies have been exhausted, why bother? Do we simply wait for surrender's arrival or is there anything we can do to encourage its presence?

We don't always need to be on our knees to reach true surrender. In truth, we can practice it on a smaller scale, in the OK moments, before we are on

our knees. This will help us in those times when even the idea of practicing surrender will be untenable.

How to Surrender

To practice, we simply surrender to what is, right now. We drop into our direct experience—what we are sensing, feeling, and living in this moment. We agree to feel life as it is, without our mind adding, taking away, manipulating, or doing anything whatsoever to it.

Try asking yourself: What would it be like if I let everything be just as it is? If I don't do anything to it, what is my actual experience in this moment? Feel this, here, now.

Surrender, at its core, is the willingness to meet life as it is, to stop fighting with or trying to change what is so. And remarkably, no matter what the catalyst, or whether it's a mo-

ment's surrender or a lifetime's, the resulting gift remains the same: relief, gratitude, grace, and sometimes even joy.

Surrender isn't something that our minds can accomplish, but it is something that, with awareness, we can invite into our lives. And thankfully, when we have no other choice but to surrender the illusion of control, we can then experience the presence of something larger and unknowable. We can experience ourselves flowing down the river that is life—the river we are actually part of. Then, having experienced surrender, we can relax and trust that it's safe to let go.

Nancy Colier is a psychotherapist, interfaith minister, public speaker, workshop leader, and author of "The Power of Off: The Mindful Way to Stay Sane in a Virtual World." For more information, visit NancyColier.com

America's Exceptional Principles

Will Get Us Through the COVID-19 Crisis

RICHARD GRABER

American exceptionalism is confronting its greatest test in modern times.

In less than two months, unemployment has hit Great Depression-era levels. The federal government has injected trillions of dollars into the economy, causing U.S. debt as a percentage of GDP to exceed debt undertaken during World War II. The future of entire industries hangs in the balance, schools and universities are shut down, and everything from weddings to baseball seasons are postponed.

A threat that only entered our consciousness late last year has claimed tens of thousands of lives, leaving fear and uncertainty in its wake.

But it's precisely because America is exceptional that many of COVID-19's most pressing challenges are being met. It is American exceptionalism that will lead us out of crisis and onto the road to recovery. Now more than ever, we must preserve, protect, and strengthen it.

America has always stood apart. Alexis de Tocqueville, observing our fledgling democracy in the early 19th century, wrote, "The situation of the Americans is therefore quite exceptional, and it may be believed that no democratic people will ever be placed in a similar one." President Abraham Lincoln believed that a nation "conceived in liberty" was worth the heavy toll of civil war.

Still, the concept of exceptionalism continues to be debated among scholars and politicians.

At The Bradley Foundation, we believe

American exceptionalism is a set of ideals upon which our country was founded. It's our political framework, which upholds individual liberty, limited government, and the rule of law. It's our economic system, which values the dignity of work, encourages innovation, and embraces the pursuit of opportunity. And it's our commitment to civil society—voluntary groups, schools, neighborhoods, and churches—that leads to flourishing communities across the country.

The principles and institutions that characterize American exceptionalism have made us the freest and most prosperous country on Earth. They have also been resilient during this crisis.

At no other time have the tenets of federalism been so fully on display. From the coronavirus pandemic's onset, governors galvanized in ways they believed were best for their states. While critics say this created a patchwork of policies, that's precisely what the Founding Fathers intended. Policies that work in California may not work in South Dakota. In cases where a state's authority has been challenged, courts are weighing in, thanks to our system of checks

and balances.

The economy has been devastated, but private enterprise is adapting through innovation. Restaurants are offering curbside service; distilleries have turned into sanitizer factories; clothing companies are churning out face masks; automakers are producing ventilators; online learning tools have proliferated to help educate the legion of homeschoolers. The ingenuity and initiative of the private sector, even when hamstrung, are rising up to meet the needs of the crisis.

Despite social distancing, civil society has filled voids in ways that government simply cannot. Voluntary groups have organized food collections; churches have provided drive-up services; neighbors have deployed as errand runners for the elderly; arts groups have found virtual ways for people to enjoy music, dance, and theater.

These efforts epitomize American exceptionalism and will serve as the catalyst for the nation's recovery.

Our constitutional framework provides the latitude to balance human safety with civil liberties. The debate on both sides will

continue to be messy. Yet, the ability to voice different perspectives is itself a freedom and puts pressure on elected officials at all levels to make sound decisions. Months from now, we'll have the opportunity to evaluate their performance through our votes. In the meantime, states will continue to adapt, implement, and modify recovery blueprints.

Because of our free-market system, biotech companies are in a race to create a COVID-19 vaccine, in the same way that private efforts supported the development of the polio vaccine, kidney transplants, advances in the fight against cancer, and numerous other medical

breakthroughs. The tech sector, too, will play a critical role as we increasingly look at new ways to work, educate, and connect.

Our public officials should trust and empower civil society to find solutions to the unique problems within communities. Those efforts have already been bolstered by the incredible generosity of American philanthropy. According to *The Economist*, American foundations, corporations, and individuals have donated at least \$5.3 billion to more than 1,200 organizations around the world in response to the crisis.

Yes, the response has been far from perfect and there will be plenty of time to assess the mistakes. But if we lose sight of what makes America exceptional and what it means to be a citizen of this great country, we will have lost our way. Going forward, let our renewed appreciation of freedom be an opportunity to strengthen the ideals upon which America was founded.

Richard William Graber is the president and CEO of The Lynde and Harry Bradley Foundation in Milwaukee, Wis. This article was originally published on FEE.org



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