WEEK 3, 2021

THE EPOCH TIMES

MIND & BODY

Research suggests running is one way to minimize disease.

Your daily patterns will create future physical functioning or pain. Regular exercise is an important pattern.

OSTILL IS FRANCK CAMHI/SHUTTERSTOCK

MADE TO MOVE

Vigorous Exercise Brings Additional Health Benefits

Even short bursts of exercise can boost metabolism, counteract risk of sedentary lifestyle

JOSEPH MERCOLA

There are lifestyle choices you make each day that are foundational to your overall health and wellness. Exercise is one of those choices. Data from two recent studies showed even short bursts of exercise can affect your metabolism, and vigorous exercise could reduce your risk of all-cause mortality.

Our ancestors naturally stayed fit as they engaged in physical labor each day. However, as society moved through the Industrial Revolution and into the current digital revolution, fewer people find time to move and exercise. That's unfortunate because including movement throughout the day helps protect your physical and mental health.

This is especially important as we are in flu season and dealing with other viral infections, namely SARS-CoV-2. A recent paper in Clinical and Experimental Medicine points out that most communicable diseases the world faces are acute viral respiratory infections, of which COVID-19 is only one.

The scientists concluded that regular exercise of adequate intensity could be "an auxiliary tool in strengthening and preparing the immune system for COVID-19."

Physical exercise stirs an important biochemical response, with the body releasing pro-and anti-inflammatory cytokines and increasing lymphocyte circulation.

"Such practice has an effect on the lower incidence, intensity of symptoms, and mortality in viral infections observed in people who practice physical activity regularly," write the researchers.

Continued on ***Page 2***

MINDSET MATTERS

How to Use Immediate Gratification to Reach Long-Term Goals

New Year's resolutions don't have to be painful. Here's how to feel good about your 2021 goals.

CHRISTINE CARTER

If you've made some New Year's resolutions or set some annual goals for yourself, you might be wondering, "Will I succeed this year?" The real test will come when you're stressed, tired, or just plain unmotivated.

Here's the plain truth: If your annual goals or New Year's resolutions feel like chores, or if they feel overwhelming, or if they feel even a little difficult, you likely won't do them over the long run. If they are something you feel like you "should" do, but that you don't actually want to do, eventually you won't do them at all.

All is not lost. Consider rewriting your annual goals into something more fun. Many

Continued on ***Page 6***

ANDREY YURLOV/SHUTTERSTOCK

Sometimes the best way to keep your resolution, is to keep it small and pleasurable.

MADE TO MOVE

Vigorous Exercise Brings Additional Health Benefits

Even short bursts of exercise can boost metabolism, counteract risk of sedentary lifestyle

Continued from ***Page 1***

While exercise strongly supports your immune system, lockdowns and fear have created an environment in which more people are ignoring physical activity as a strategy to protect their health. For many, recent months have been marked by an expanding waistline and higher levels of anxiety and stress. Exercise can help with all these problems and strengthen your everyday health.

Bursts of Exercise Help Metabolism

Despite eating the same food you did before March 2020, you may find your waistline expanding and the numbers on the scale growing. That's because while you can't out-exercise a bad diet, eating the same amount and moving less will slowly pack on the pounds.

Additionally, some people are emotional eaters and others have changed their eating habits as the pandemic raises their stress level. Researchers from Massachusetts General Hospital used data from the Framingham Heart Study participants to evaluate how short bursts of exercise may lower cardiovascular risk and mediate health benefits.

They measured 588 metabolites in the participants at rest and after approximately 12 minutes of exercise. They found there were changes in 502 of those metabolites, some of which were involved in insulin resistance, fat metabolism, the availability of nitric oxide, and the development of brown fat.

In a separate sample, they evaluated 177 metabolites and observed some of the same changes in 164 of them. Interestingly, they found that changes to the metabolites depended on the amount of exercise, gender, and body mass index of the individual. The higher the body mass index, the greater the changes in cardioprotective metabolites.

The researchers identified four separate signatures in metabolite responses to exercise. They concluded that in this sample of 411 participants, short acute bursts of exercise could elicit metabolic changes associated with cardiovascular health. Dr. Gregory Lewis, from Massachusetts General Hospital and lead researcher, commented:

"Much is known about the effects of exercise on cardiac, vascular, and inflammatory systems of the body, but our study provides a comprehensive look at the metabolic impact of exercise by linking specific metabolic pathways to exercise response variables and long-term health outcomes.

"What was striking to us was the effects a brief bout of exercise can have on the circulating levels of metabolites that govern such key bodily functions as insulin resistance, oxidative stress, vascular reactivity, inflammation, and longevity."

The researchers found the metabolite called glutamate, which is linked to heart disease and a shorter life span, fell by 29 percent. Another metabolite, dimethylguanidino valeric acid (DMGV), also associated with diabetes and increased risk of liver disease, dropped by 18 percent. Nitric oxide, associated with mitochondrial health, rose by 29 percent.

"Intriguingly, our study found that different metabolites tracked with different physiologic responses to exercise, and might therefore provide unique signatures in the bloodstream that reveal if a person is physically fit, much the way current blood tests determine how well the kidney and liver are functioning. Lower levels of DMGV, for example, could signify higher levels of fitness," notes co-first author Matthew Nayor, with the Heart Failure and Transplantation Section in the Division of Cardiology at Massachusetts General Hospital.

How to Gauge Physical Activity

The link between physical exercise and better health has been known for a long time. The Centers for Disease Control and Prevention advocates for consistent physical activity each day, saying: "Regular physical activity is one of the most important things you can do for your health. Everyone can experience the health benefits of physical activity—age, abilities, ethnicity, shape, or size do not matter."

Staying fit during lockdown isn't hard and can even be fun.

In 2018, the Department of Health and Human Services released the second edition of their Physical Activity Guidelines for Americans. In it, they recommend adults should have at least 150 minutes and up to 300 minutes a week of moderate-intensity exercise.

Alternatively, the CDC recommends including 75 to 150 minutes of vigorous aerobic physical activity. Muscle-strengthening activities involving major muscle groups on two or more days a week are also recommended.

The intensity of a given exercise is measured by the metabolic equivalent of task (MET), in which one MET is how much energy is spent while you're at rest. Comparatively, moderate activities range up to 5.9 MET. Walking three miles per hour is equivalent to 3.5 METs, which falls under moderate-intensity activity. Vigorous activities are more than six MET. For example, running a 10-minute mile measures 10 MET.

Exercise Lowers Mortality Risk

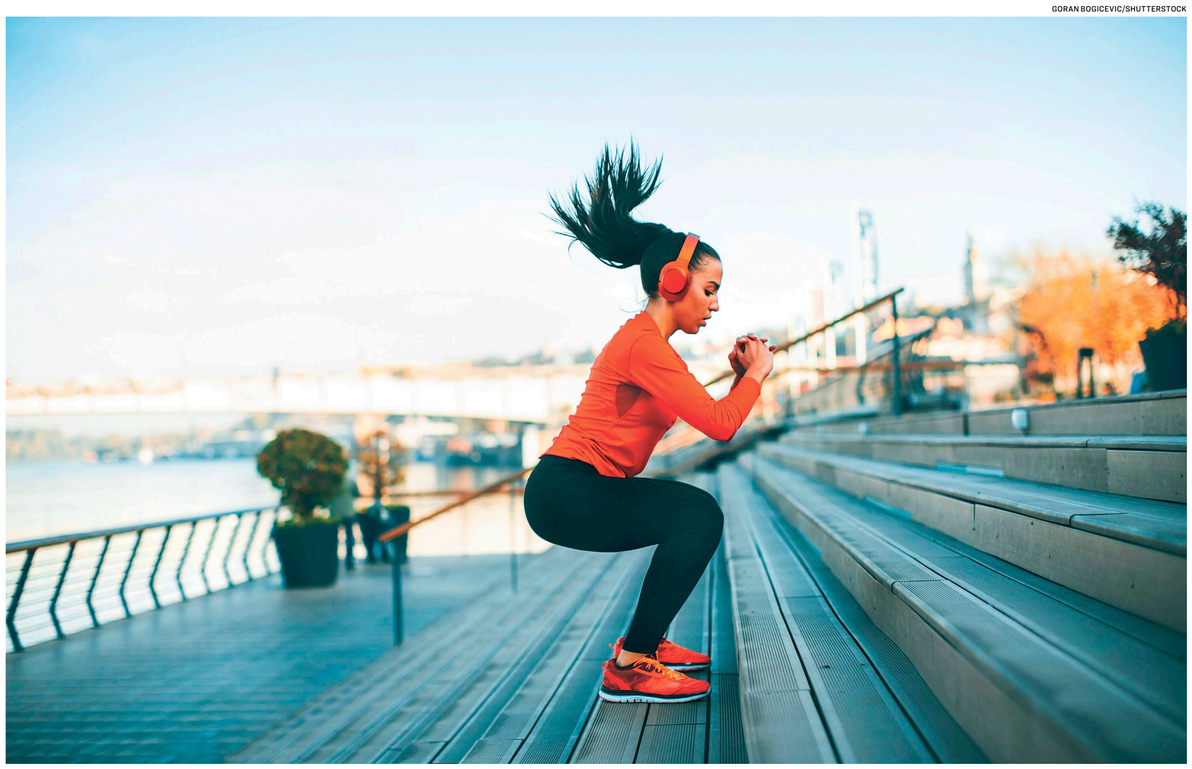
The second study was released in the Journal of the American Medical Association Internal Medicine. Researchers sought to discover if there is a difference in all-cause mortality between people who engage in vigorous activity compared to those who are moderately active.

The researchers gathered information from 403,681 participants and compared their level of activity against all-cause, cardiovascular, and cancer mortality. Participants were from the National Health Interview Survey ending in 2013, in which researchers gathered self-reported data on physical activity that was then linked to the National Death Index through December 31, 2015.

ELDAR NURKOVIC/SHUTTERSTOCK

We may be stuck inside but that doesn't mean we should get too comfortable. Exercise is important to physical health and mental well-being.

GORAN BOGICEVIC/SHUTTERSTOCK



After analyzing the data, they concluded people who had a higher proportion of vigorous activity during the week as compared to moderate activity had lower all-cause mortality. They suggested public health interventions should include recommendations for at least 150 minutes of moderate physical activity a week, but also advised officials to include guidance on the benefits linked to vigorous activity.

The study was only one of several published in the past two years that has demonstrated the significant health benefits for people who remain active. One paper published in August 2019 reported data presented at the European Society of Cardiology Congress. It found that living a sedentary lifestyle for 20 years was associated with double the risk of mortality compared to those who were active.

A second study published in the BMJ during the same month found people who were more physically active, regardless of intensity, had a lower risk of dying prematurely. The World Health Organization (WHO) also recently updated its recommendations for physical activity.

The WHO noted the significant contribution exercise makes to managing non-communicable diseases, reducing depression and anxiety, and enhancing learning and judgment. According to the WHO, up to 5 million deaths every year could be prevented if people were more active and, importantly, more than 80 percent of adolescents worldwide don't get enough exercise.

Most recently, a large retrospective study was done on 6.1 million people in South Korea in which the researchers measured moderate-to-vigorous physical activity against the risks of a major cardiovascular event or all-cause mortality in people with metabolic syndrome. The data showed people who engaged in moderate to vigorous physical activity had significantly lower risks of both.

Inactivity Another Pandemic Health Risk

One of the potential long-term health impacts of the coronavirus lockdown in 2020 that was recognized early in the pandemic was the rising number of mental health conditions reported. Ongoing unemployment, loss of income, and the fear of the unknown all contribute to depression, stress, and anxiety.

Another long-term health risk from the pandemic is the impact that stay-at-home measures may have had on your exercise habits. These in turn have a significant impact on your mental health. A paper published in the Journal of Sport and Health Science cautioned that the recommendation to restrict your movements doesn't mean reducing the amount of physical activity you get.

Our ancestors naturally stayed fit as they engaged in physical labor each day.

ESB PROFESSIONAL/SHUTTERSTOCK

There is plenty of room outside to go exercise even with social distancing requirements. And it can help compensate for bad habits that come with working from home.

Stuart Phillips, a professor at McMaster University in the department of kinesiology, is concerned that the prolonged stay in place orders may lead to unanticipated health issues from inactivity. He led a team that published a paper in the Journals of Gerontology in which they evaluated the effect of just two weeks of inactivity on insulin sensitivity.

The participants were pre-diabetic and limited their activity to 1,000 steps each day to mimic the level of activity a person who is hospitalized or housebound may experience. They found just two weeks of limited activity led to a lower rate of protein synthesis and a deterioration of blood sugar control.

Other health risks that are associated with inactivity include the risk of high blood pressure, rising inflammation, bone loss, and potential hormonal imbalances. Added to this, inactivity increases your risk of lower back pain, which is one of the most common health complaints and a major cause of disability.

In older adults with arthritis, lower levels of physical activity are associated with a measurable decline in their ability to perform activities of daily living, such as grocery shopping, meal preparation, and managing money. In other words, lack of activity can affect the health of everyone across the age span.

Tips to Stay Active and Exercise at Home

Staying or working at home can create poor movement routines. People who previously had the habit of getting out of their chair at the office every 20 to 30 minutes, or those who had a job that required movement throughout the day, may find binge-watching television or working all day at the computer throws a wrench in those habits.

Even just a little bit of exercise is better than nothing, and sitting all day can increase your risk of heart disease. There are a variety of ways to simply and easily exercise at home that can reduce your potential exposure to viral infections and can help prevent mental and physical health problems. Here are several suggestions to help you move throughout the day.

Walking is fantastic exercise, and easy to squeeze in throughout the day.

LJUPCO SMOKOVSKI/SHUTTERSTOCK

Activity Snacks

Phillips suggests that "prolonged periods of sitting should be broken up with 'activity snacks' like a little walk or going up and down a flight of stairs. A short daily walk has amazing properties from not just a physical, but a psychological perspective. We don't have to run a marathon."

In other words, small movements may have big benefits. Consider taking a walk in the morning and another in the afternoon as the weather permits. Getting outdoors has additional benefits for your immune system, specifically from your exposure to the sun that may boost your vitamin D production.

Nonexercise Movement

This type of activity may be as important as exercise. Make it a point to get up from your chair at least every 30 minutes to stretch and move around. If you are working from home or spending more time in front of a computer or television screen than what is considered healthy, opt for using a Swiss ball. These large, inflatable balls can be ordered online and most come with a pump. Sitting on one at your desk or while watching television encourages movement and helps strengthen your core muscles.

Strengthening

With inactivity, you can lose muscle mass and strength. You don't need a gym or fancy equipment to get a workout. You don't even have to leave home. Bodyweight exercises such as pushups, squats, planks, and lunges are great ways to strength train from home without equipment.

Indoor Exercise

Getting some aerobic activity and exercise at home isn't nearly as challenging as you might imagine. If you don't have a favorite aerobic workout video, consider climbing the stairs or purchasing a stationary bike, which can be delivered straight to your door.

Dr. Joseph Mercola is the founder of Mercola.com. An osteopathic physician, best-selling author, and recipient of multiple awards in the field of natural health, his primary vision is to change the modern health paradigm by providing people with a valuable resource to help them take control of their health. This article was originally published on Mercola.com

NATASHA BREEN/SHUTTERSTOCK

FOOD AS MEDICINE

Korean Superfood May Reduce Body Fat

Iconic side dish has therapeutic benefits to go along with its delicious flavor

Kimchi is a staple of Korean cuisine and jam-packed with probiotics that make it especially healthy.

Fermented foods such as kimchi may be one key to preventing obesity. A June 2020 study evaluated whether the Lactobacillus sakei bacteria derived from the Korean side dish can cause weight loss in obese individuals, with promising results.

Obesity is one of the most visible public health problems around the world today, yet it also seems to be one of the most neglected. The World Health Organization has described obesity as a global epidemic. The increased prevalence of obesity has been linked to increased death from Type 2 diabetes, high blood pressure, heart disease, and some forms of cancer.

Data suggested that L. sakei might be helpful in reducing body fat mass in obese individuals without serious side effects.

RANTA IMAGES/SHUTTERSTOCK

Kimchi is usually eaten as a side dish but can also be eaten on its own and is also often used in soup. There are many varieties made from different vegetables.

For those who are overweight or obese, diet is always one of the best places to start. And when it comes to food, one of the best places to improve your diet is ingesting more fermented foods that contain healthy bacteria called probiotics. A 2016 clinical trial found a probiotic product with or without dietary fiber controlled body fat mass, with some bacteria strains reducing waist circumference and food intake.

Now, a June 2020 study has provided insight on how Lactobacillus sakei (L. sakei) bacteria derived from kimchi, a staple food in Korea, can aid in weight loss.

L. Sakei Influence on Obesity, Gut Microbiota

L. sakei, commonly found in meat and fish, is used to ferment meat in Western countries. A previous study showed that eating it from Korean kimchi for eight-weeks slashed body weight and fat mass in animal models with high-fat diet-induced obesity.

The new randomized, double-blind, placebo-controlled clinical trial involved 114 obese individuals, or those with a body mass index (BMI) of more than 25 kg/m2. The participants were randomly assigned to the L. sakei or placebo group for 12 weeks. The researchers then measured changes in body fat, weight, and waist circumference.

After 12 weeks, the researchers saw a 0.2 kg reduction in body fat mass in the L. sakei group while finding a 0.6 kg increase in the placebo group. Waist circumference was also 0.8 centimeters (cm) smaller in the L. sakei subjects than those in the placebo group. BMI and body weight didn't change, and adverse events were mild and similar between the groups.

Data suggested that L. sakei might be helpful in reducing body fat mass in obese individuals without serious side effects.

While recognizing limitations in their study, including the need to probe significant body fat and weight changes beyond 12 weeks of treatment, the researchers cited evidence that food changes the human gut microbiota, the collection of microbes (mainly bacteria) that live in the human gut and provide a myriad of services, including aiding with immunity and digestions. Diet plays an important role in the gut's bacterial environment and the progression of obesity. The gut microbiota is an extremely complex, abundant group of microbes that colonize the human body and radically influence health.

"Changes in the composition of the gut microbiota may contribute to alterations in body weight and composition," the researchers wrote.

Gut-derived short-chain fatty acids (SCFAs) have been previously found to cause weight regulation through their stimulatory impact on anorexigenic (appetite-suppressing) gut hormones and in the increase in the synthesis of the satiety hormone leptin.

Kimchi and Overall Wellness

Kimchi has been consumed by Koreans as a salted and fermented vegetable side dish for about 2,000 years. As a probiotic, it packs many health benefits into its tasty form. All of kimchi's traditional ingredients are health-boosting foods in their own right: cruciferous vegetables, garlic, ginger, and red pepper, to name a few. Previous research had already begun to identify some of its health benefits.

A 2019 study published in Food Science and Biotechnology concluded that the probiotic Lactobacillus plantarum (L. plantarum) 200655 isolated from kimchi has antioxidant and immune-enhancing properties. This makes the strain ideal for older people.

Korean researchers also developed a kimchi recipe boosting its anticancer action, adding mustard leaf, Chinese pepper, and Korean mistletoe extract. Lab tests on human colon cancer cells revealed that the mistletoe extract increased the inhibition rate to 80 percent from 62 percent.

In another study, exopolysaccharide obtained from L. plantarum offered protection against rotavirus-induced diarrhea and regulated inflammatory response. The probiotic strain was one among 263 strains found in 35 samples of kimchi.

In a study of 102 healthy Korean men aged 40 to 64 years, researchers associated eating up to 453 g of kimchi a day with higher HDL cholesterol and lower levels of LDL cholesterol.

In the GreenMedInfo.com database, you'll find nearly 50 abstracts with kimchi research for a further look into this fermented food for healthy weight management and other health benefits.

Obesity is one of the most visible public health problems around the world today, yet it also seems to be one of the most neglected.

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OVERTREATMENT

Children's Hospitals Are Partly to Blame as Superbugs Increasingly Attack Kids

Antibiotic misuse remains widespread and now threatens to make antibiotics useless as germs develop resistance

LAURA UNGAR

A memory haunts Christina Fuhrman: the image of her toddler Pearl lying pale and listless in a hospital bed, tethered to an IV to keep her hydrated as she struggled against a superbug infection.

"She survived by the grace of God," Fuhrman said of her eldest child in this central Missouri city almost five years ago. "She could've gone septic fast. Her condition was near critical."

Pearl was fighting Clostridium difficile, or C. diff, a type of antibiotic-resistant bacteria known as a superbug. A growing body of research shows that overuse and misuse of antibiotics in children's hospitals—which health experts and patients say should know better—helps fuel these dangerous bacteria that attack adults and, increasingly, children. Doctors worry that the COVID-19 pandemic will only lead to more overprescribing.

A study published in the journal Clinical Infectious Diseases in January found that 1 in 4 children given antibiotics in U.S. children's hospitals are prescribed the drugs inappropriately—the wrong types, or for too long, or when they're not necessary.

Dr. Jason Newland, a pediatrics professor at Washington University in St. Louis who co-authored the study, said that's likely an underestimate because the research involved 32 children's hospitals already working together on proper antibiotic use. Newland said the nation's 250-plus children's hospitals need to do better.

"It's irresponsible," Fuhrman said. Coupled with parents begging for antibiotics in pediatricians' offices, it's "just creating a monster."

Using antibiotics when they're not needed is a longstanding problem, and the pandemic "has thrown a little bit of gas on the fire," said Dr. Mark Schleiss, a pediatrics professor at the University of Minnesota Medical School.

Although fears of COVID-19 mean fewer parents are taking their children to doctors' offices and some have skipped routine visits for their kids, children are still getting antibiotics through telemedicine visits that don't allow for in-person exams. And research shows that more than 5,000 children infected with COVID-19 were hospitalized between late May and late September. If symptoms point toward a bacterial infection on top of the coronavirus, Schleiss said, doctors sometimes prescribe antibiotics, which don't work on viruses, until tests rule out bacteria.

MATTHEW MATLOCK

Christina Fuhrman contracted a C. diff infection in 2012, and her daughter Pearl contracted one in 2015. C. diff, a bacterium causing diarrhea and colitis, is a superbug fueled by the overuse of antibiotics.

At the same time, Newland said, the demands of caring for COVID patients take time away from what are known as "stewardship" programs aimed at measuring and improving how antibiotics are prescribed. Often such efforts involve continuing education courses for health care professionals on how to use antibiotics safely, but the pandemic has made those more difficult to host.

"There's no doubt: We've seen some extra use of antibiotics," Newland said. "The impact of the pandemic on antibiotic use will be significant."

Habits Drive Superbug Growth

Bacteria most susceptible to an antibiotic die quickly, but surviving germs can pass on resistant features, then spread. This is how antibiotic resistance develops. The process is driven by prescribing habits that lead to high levels of antibiotic use.

A March study in the journal Infection Control & Hospital Epidemiology found that the rates of antibiotic use on patients at 51 children's hospitals ranged from 22 percent to 52 percent. Some of those medications treated actual bacterial infections, but others were given in hopes of preventing infections or when doctors didn't know what was causing a problem.

"I hear a lot about antibiotic use for the 'just in case' scenarios," said Dr. Joshua Watson, director of the antimicrobial stewardship program at Nationwide Children's Hospital in Ohio. "We underestimate the downsides."

Newland said each specialty in medicine has its own culture around antibiotic use. Many surgeons, for example, routinely use antibiotics to prevent infection after operations.

Outside of hospitals, doctors have long been criticized for prescribing antibiotics too often for ailments such as ear infections, which can sometimes go away on their own or can be caused by viruses that antibiotics won't counter.

Dr. Shannon Ross, an associate professor of pediatrics and microbiology at the University of Alabama at Birmingham, said not all doctors have been taught how to use antibiotics correctly.

"Many of us don't realize we're doing it," she said of overuse. "It's sort of not knowing what you're doing until someone tells you."

All this drives the growth of numerous superbugs in the very population served by these hospitals. Numerous studies, including one published in the Journal of Pediatrics in March, cite the rise among kids of C. diff, which causes gastrointestinal problems. A 2017 study in the Journal of the Pediatric Infectious Diseases Society found that cases of a certain type of multidrug-resistant Enterobacteriaceae rose 700 percent in American children in just eight years. And a steady stream of research points to the stubborn prevalence in kids of the better-known MRSA, or methicillin-resistant Staphylococcus aureus.

Superbug infections can be extremely difficult—and sometimes impossible—to treat. Doctors often must turn to strong medicines with side effects or give drugs intravenously.

"It's getting more and more worrisome," Ross said. "We have had patients we have not been able to treat because we've had no antibiotics available" that could kill the germs.

Doctors say the world is nearing a "post-antibiotic era," when antibiotics no longer work and common infections can kill.

A Monster Unleashed

Superbugs spawned by antibiotic overuse put everyone at risk.

Like her daughter, Fuhrman also suffered through a C. diff infection, getting sick after taking antibiotics following a root canal in 2012. While killing harmful germs, antibiotics can also destroy those that protect against infection. Fuhrman cycled in and out of the hospital for months. When she finally got better, she tried to avoid using antibiotics and never gave them to her daughter.

That's because antibiotics affect your microbiome by wiping out bad germs and the good germs that protect your body against infections.

Pearl's first symptoms of C. diff arose about three years later, at around 20 months old. Fuhrman noticed her daughter was having lots of bowel movements. The mom eventually found pus and blood in her daughter's stools. One day, Pearl was so pale and weak that Fuhrman took her to the emergency room. She was discharged, then spiked a fever and returned to the hospital.

Doctors treated Pearl with Flagyl, a broad-spectrum antibiotic. But two days after the last dose, she went downhill. The infection had returned. She recovered only after going to the Mayo Clinic in Rochester, Minnesota, for a fecal microbiota transplantation, in which she received healthy donor stool from her dad through a colonoscopy.

Since her family's ordeal, Fuhrman has been trying to raise awareness of superbugs and antibiotic overuse. She serves on the board of the Peggy Lillis Foundation, a C. diff education and advocacy organization, and has testified before a presidential advisory committee in Washington, D.C., about superbugs and antibiotic stewardship.

In March, the Centers for Medicare & Medicaid Services began requiring all hospitals to document that they have antibiotic stewardship programs.

One approach, Schleiss said, is to restrict antibiotics by "saving our most magic bullets for the most desperate situations." Another is to stop antibiotics at, say, 72 hours, after reassessing whether patients need them. Meanwhile, doctors are calling for more research into antibiotic use in children.

Fuhrman said hospitals must do all they can to stop superbug infections. The stakes are enormous, she said, pointing toward Pearl, now a 7-year-old first-grader who likes to wear a pink hair bow and paint her tiny fingernails a rainbow of pastel colors.

"Antibiotic are great, but they have to be used wisely," Fuhrman said. "The problem of superbugs is here. It's in our backyard now, and it's just getting worse."

Laura Ungar is the midwest editor/correspondent and she covers health issues out of Kaiser Health News' St. Louis office. This article was originally published on Kaiser Health News.

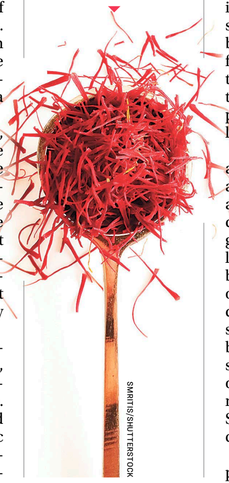
A Natural Treatment for Antidepressant-Induced Sexual Side Effects

70 percent of people taking common antidepressants suffer side effects that may be treated, or avoided, with saffron

MICHAEL GREGER

Years ago, I covered a head-to-head comparison of saffron versus Prozac for the treatment of depression and saffron seemed to work just as well as the drug. In the years since, five other studies have found that saffron beat out placebo or rivaled antidepressant medications.

Five other studies have found that saffron beat out placebo or rivaled antidepressant medications.



SMRITIS/SHUTTERSTOCK

It may be the spice's red pigment, crocin, since that alone beat out placebo as an adjunct treatment, significantly decreasing symptoms of depression, symptoms of anxiety, and general psychological distress. Perhaps, its antioxidants played a role in "preventing free radical-induced damage in the brain." The amount of crocin the researchers used was equivalent to about a half teaspoon of saffron a day.

If the spice works as well as the drugs, one could argue that the spice wins, since it doesn't cause sexual dysfunction in the majority of men and women like most prescribed antidepressants do. SSRI drugs like Prozac, Paxil, and Zoloft cause "adverse sexual side effects" in around 70 percent of people taking them. What's more, physicians not only significantly underestimate the occurrence of side effects, but they also tend to underrate how much they impact the lives of their patients.

Not only is this not a problem with saffron, the spice may even be able to treat it, as I explore in my video Best Food for Antidepressant-Induced Sexual Dysfunction. "In folk medicine, there is a widely held belief that saffron might have aphrodisiac effects." To test this, men with Prozac-induced sexual impairment were randomized to saffron or placebo for a month. By week four, the saffron group "resulted in significantly greater improvement in erectile function ... and intercourse satisfaction," and more than half of the men in the saffron group regained "normal erectile function." The researchers concluded that saffron is an "efficacious treatment" for Prozac-related erectile dysfunction. It has all been found to be effective for female sexual dysfunction as well. Female sexual function increased by week four, improving some of the Prozac-induced sexual problems but not others. So, it may be better to try saffron in the first place for the depression and avoid developing these sexual dysfunction problems, since they sometimes can persist even after stopping the drugs, potentially worsening one's long-term depression prognosis.

This includes unusual side effects, such as genital anesthesia, where you literally lose sensation. It can happen in men and women. More rarely, antidepressants can induce a condition called restless genital syndrome. You've heard of restless legs syndrome? Well, this is a restless between-the-legs syndrome. These PSSDs, or Post-SSRI sexual dysfunctions, meaning dysfunctions that appear or persist after stopping taking these antidepressants, can be so serious that "prescribing physicians should mention the potential danger of the occurrence of genital (e.g., penile or vaginal) anesthesia to every patient prior to any SSRI treatment." If you're on one of these drugs, did your doctor warn you about that?

All hope is not lost, though. Evidently, penile anesthesia responds to low-power laser irradiation. After 20 laser treatments to his penis, one man, who had lost his penile sensation thanks to the drug Paxil, partially regained his "penile touch and temperature sensation." However, he still couldn't perform to his girlfriend's satisfaction, and she evidently ended up leaving him over it, which certainly didn't help his mood. But, before you feel too badly for him, compare a little penile light therapy to clitoridectomy, clitoris removal surgery, or another Paxil-related case where a woman's symptoms only improved after six courses of electroshock therapy.

Pass the paella!

In folk medicine, there is a widely held belief that saffron might have aphrodisiac effects.

Michael Greger, M.D., FACLM, is a physician and New York Times bestselling author. He has lectured at the Conference on World Affairs, the National Institutes of Health, and the International Bird Flu Summit, testified before Congress, appeared on "The Dr. Oz Show" and "The Colbert Report," and was invited as an expert witness in defense of Oprah Winfrey at the infamous "meat defamation" trial. This article was originally published on NutritionFacts.org

FIZKES/SHUTTERSTOCK

The soothing motions of knitting create more than beautiful sweaters.

Keep Your Hands Busy for Heart Health

Meditating can melt away stress but some people need another option

MAT LECOMPTE

Mindfulness meditation may help ease stress and promote a healthier heart, but it's not always easy to do. Stopping everything you're doing and sitting in silence is a learned skill.

Getting engaged in the rewarding labor of a hobby can offer a meditative experience that combats stress.

I'm sure you can relate. It's easy for your mind to start racing once you're alone with your thoughts. Sitting in a comfortable, quiet space can get uncomfortable and loud inside your head. It can serve as a perfect platform for overthinking, which can boost stress.

Too much stress is no good for your heart, especially if you're feeling it all day, every day.

Stress can boost heart disease risk by setting off a chain of physiological reactions that can have some dangerous effects.

Your body releases adrenaline when you feel stressed. Adrenaline increases your heart rate and breathing and boosts blood pressure. When it continues, it strains the heart.

There are also indirect effects. Stress may lead you to engage in behavior that boosts the risk of heart disease. Research links stress to bad food choices that include fat and sugar, which can boost cholesterol and blood pressure. Stress can also zap your energy and limit your physical activity.

So, if mindfulness meditation doesn't work for you, try keeping your hands busy. Sitting down with some knitting, woodworking, jigsaw puzzles, or cooking can all help take your mind off your stressful thoughts, help you relax, and offer something enjoyable to think about.

Sometimes just the repetitive motion of knitting is enough to reduce stress and take your mind off any troubles.

If you're struggling with stress and really can't sit quietly in meditation, try putting your hands to work. It can ease the burden on your heart and mind.

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

KER_VII/SHUTTERSTOCK

Focus on what drives you this moment to take a better-than-nothing step toward a long-term goal.

MINDSET MATTERS

How to Use Immediate Gratification to Reach Long-Term Goals

New Year's resolutions don't have to be painful. Here's how to feel good about your 2021 goals.

Continued from ***Page 1***

people feel like doing something that is fun and easy doesn't count, especially if it is supposed to be good for you. You want something impressive, right? Maybe something that will make you immediately look better in a bathing suit. No pain, no gain, right?

Wrong. You have a choice: Do something hard and ambitious for a short period of time and then quit it, or do something that makes you feel something you want to feel for the rest of your life. I promise the people who know about these things (like your doctor, therapist, or coach) want you to pick the healthy or productive habit that you are going to stick with, no matter how unambitious. This is about hardwiring a good habit into your brain that you can build on later.

If your new habit is something you feel like you 'should' do, but don't actually want to do, eventually you won't do it at all.

If we want our habits to stick, we need to start really, really small. It is hard for us humans to make lots of behavior changes all at once. Creating a new habit or routine can take a great deal of energy and focus, and we have only so much self-control in a given day to work with. Also, you might have noticed that the global crisis that we are in is pretty distracting these days, which makes piling individual change on top of massive societal change even harder.

So, the first step is to break your desired habit down into its most simple behavior, something you can do in less than five minutes from start to finish. Do this knowing that you are starting to carve a neural pathway in your brain that will eventually become an unshakable habit.

The first few steps of establishing any new habit can be hard, though, so you need to do something really, really, really easy—something that requires so little effort that your brain doesn't put up any resistance when you start it, and you can feel successful for completing it. The idea is to create a habit that doesn't depend on effort or willpower, so this first extraordinarily unambitious habit is about initiating the neural pathway—starting to form the groove—and nothing else.

Once you have a routine or resolution so easy you have no excuse not to do it, this will be your "Better Than Nothing" (BTN) habit or resolution. Mine was to change into my walking shoes and walk our dogs to the end of the block. You will be able to do your BTN routine when you are exhausted, when you have no time, when you are a little under the weather, and when you really feel like staying on the couch. For me, this means a teeny little bit of physical activity that is better than not moving at all.

Every few days, you can expand this routine if you want to, but only if you are itching to do more, and only if the expansion feels really easy.

If, at any time, you feel any resistance to your BTN routine, you'll know it isn't yet easy enough. Start by cutting it in half in terms of time and effort. Many people need to start with something that takes less than 30 seconds—say, putting your shoes on and walking out the door. This sounds ridiculous, I know. Remember, we are all about establishing the neural pathway at this stage in the game, and to do that, all we need to do is associate your anchor or trigger with something that will someday become a habit.

Even after you start expanding, you'll need to hang on to some form of a BTN routine: something you can still do even when you aren't feeling great, when you don't have time, and when the unexpected happens. We can do this by making the activities themselves more rewarding—more fun—by pairing them with things we enjoy.

For example, I love reading, so I listen to audiobooks while I clean up at the end of each evening. My husband watches TikTok while he takes his huge pile of supplements in the morning. Remember that when you are first building a new habit, any action is better than none. Once you've started, there are tricks to help you stay on track—little things that make your effort feel rewarding. Here are three of them.

Tricks to Stay on Track

Use B.J. Fogg's "Yay me!" reward: When you finish doing what you intend to do, congratulate yourself. I'm a huge fan of this one because it's easy and it works. Even something as small as a short mental victory dance can trigger a little hit of dopamine, enough to tell your brain to repeat whatever you just did. So, when I find myself outside walking around in the fresh air, I congratulate myself.

Really relish the positive emotions that your new habit elicits. Be intentional about this. "Take in the good" of them, as psychologist Rick Hanson would say. For example, I tend to feel happiest when I'm exercising outside and I consciously look up at the trees (rather than down at the trail, as I am inclined). When I look up at the trees, I tend to feel a warm, relaxing sense of awe spread over me. I try to do this each time I'm out, so that I can really feel the calm.

Add something to your new habit that you'll look forward to when you think about it. I supercharged my desire to get out on the trail with my dogs by letting myself listen to audiobooks while I walk. Because I'd read about the incredible benefits of mindfulness, I felt like I "should" make myself just walk quietly in nature, undistracted, when out on a hike. But then I noticed that I most wanted to get outside and walk when I had something I couldn't wait to get back to listening to ... and I decided to give myself permission to do something I really enjoy. This means that I'm even more committed to my hikes, because, as Michelle Segar compellingly writes, "We approach what feels good and avoid what feels bad."

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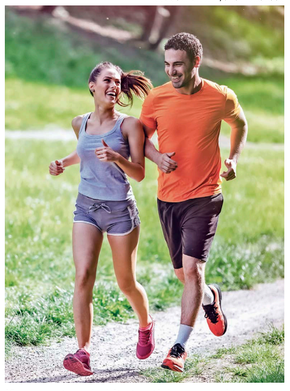

If we want our habits to stick, we need to start really, really small.

LEGACY

Living in the Shadow of Death

We treasure what we know to be finite, which includes our time in this life

JOSHUA BECKER

My grandfather passed away over Christmas.

At his funeral, I delivered the eulogy. Here is a portion of what I said:

"What can I say about this man? What can I say about a man I've always wanted to be just like? What can I say about a man who shaped my worldview and understanding of God more than anyone else? What can I say about a man I named my own son after?"

During one of my last conversations with my grandfather, before he got sick on Thanksgiving, he made a statement to me that I found to be incredibly profound.

He said, "We live our entire lives under the shadow of death."

While I didn't tell him at the time, I found the statement to be deep and life-enhancing when understood correctly. In fact, merely hearing it brought about further resolve of my desire to live a minimalist life.

Consider its weight: We all live under the shadow of death.

That statement has been true in 2020 maybe more than any other year as local and national media regularly report death counts from all over the world and daily public service announcements can be heard over the airwaves asking us to act responsibly.

But death is not new to us—despite the unprecedented times we live in.

In fact, we live every day with the understanding that it may be our last. Not in a morbid, depressing way (shockingly so), but in the awareness and reality of understanding life.

Every time I get in my car to drive to work or the grocery store, I know, instinctively, something tragic could happen to me or another driver. I also know, full-well, that even if I don't leave my house, a medical emergency could befall me or someone I love. I am not immune from a cancer diagnosis, a heart attack, a stroke, or a brain aneurysm.

I have plenty of loved ones who unexpectedly received life-changing news, or were tragically stricken.

As Grandpa said, "Life is lived under this shadow of death." The reality of it surrounds us every day of our lives. And even if we don't have a close, loved one who recently passed away, we almost certainly know someone who has.

Nobody escapes life alive.

We live every day with the understanding that it may be our last.

ANNA_KIM/SHUTTERSTOCK

Somehow it seems, human beings are able to both live with the knowledge of death and somehow function apart from it.

But somehow it seems, human beings are able to both live with the knowledge of death and somehow function apart from it.

Death is inevitable. And yet, I am able to live wholly today, focused on the present and the future, as if it won't happen to me. I am aware of coming death, but not paralyzed by it. It is a fascinating paradox and ability of the human mind when you think about.

While the shadow of death does not paralyze me, in the quiet moments of life, the shadow motivates and sharpens the wisest among us.

Only a fool lives as if their life will never end.

We receive one life to live, with a limited number of days and a limited number of resources with which to accomplish our purpose. Almost all of the resources we consume during our journey are limited: money, time, energy, space, focus, capacity, even the relationships we are able to pursue.

This reality of our finite nature is an incredibly important truth. It is one we should intentionally choose to focus on each day. Because when we do, it changes our actions, our motivations, and our pursuits. It changes us:

Because life is finite, we make better choices.

Because time is finite, we spend our days on things that matter.

Because money is finite, we spend it on pursuits that will outlast us.

Because our energy is finite, we choose carefully where we focus our passions.

Because our days are finite, we value relationships and love.

Because I live under the shadow of death, I will choose a minimalist life and reject the empty promise of consumerism and what this world offers. I will live for greater pursuits.

Life will end—indeed. And that realization should affect the decisions I make each day. But rather than causing me to throw in the towel and give up on life, this shadow of death will spark hope and resolve and passion to spend each remaining day of my life making the most of it.

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 BecomingMinimalist.com

TRAVEL MAN/SHUTTERSTOCK

Remembering our mortality can help us better mind how we use the hours and days life gives us.

MINDSET MATTERS

Challenges Beat Resolutions–Every Day of the Week

Set yourself a task with a clear completion, however small, and start your streak

JAY HARRINGTON

As a young comedian, Jerry Seinfeld hung a big calendar on his wall. He began writing jokes every day. After he wrote, he put a big red X over that day.

According to Seinfeld: "After a few days you'll have a chain. ... Your only job is to not break the chain."

Seinfeld didn't resolve to become a great comedian. He challenged himself to write every day.

See the difference? It's not just semantics.

Challenges are action oriented, whereas resolutions are outcome oriented. With a resolution, you think about who you want to become. With a challenge, you become that person through the consistent action you take.

If you challenge yourself to write, or paint, or work out every day, you need to write, paint, or work out. The action is clear, specific, and deadline driven.

On the other hand, if you resolve to "become a better writer," there's less urgency to get moving. What does "better" even mean?

Resolutions can also be limiting—we're poor judges of our potential. Why set an arbitrary aspirational outcome for yourself when you can't possibly know how much farther your daily action can take you?

Don't Fixate on Outcomes

Consider the example of John Grisham.

Approaching the age of 30, Grisham was busy with his legal career, working 60 to 70 hours a week at a law firm in Mississippi.

Grisham wanted to write a novel but couldn't afford to stop practicing law to pursue his dream.

He created a challenge for himself. Every day, Grisham would wake up at 5 a.m. sharp and hustle to his office. He would be at his desk, coffee, pen, and legal pad in hand, by 5:30 a.m.

He challenged himself to write at least one page per day. Sometimes he wrote more. Three years later, by sticking to his rigorous daily writing routine, Grisham finished writing and editing his first novel, "A Time to Kill."

Twenty-eight publishers rejected "A Time to Kill." Eventually, a small publisher agreed to print 5,000 copies. While "A Time to Kill" was a bit of a dud when it launched, Grisham kept writing, and his second book, "The Firm," achieved massive success. He has since gone on to sell more than 300 million books.

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Resolutions can be vague and easy to procrastinate on. Walking 15 minutes a day, however, is a challenge you can put a checkmark beside.

The thing that stops people from becoming a better version of themselves is themselves.

Focus on a Better Future Self

The real benefit of challenges is that they lead to sustainable behavior change.

If you write for 30 days straight, it will become habitual. The action will become ingrained. You'll start seeing benefits from your work, and you'll want to engage in more of the behavior that created the results.

The thing that stops people from becoming a better version of themselves is themselves. We harbor limiting beliefs about what we're capable of.

According to Harvard psychologist Dr. Daniel Gilbert, most people assume that their current self is their forever self.

"Human beings are works in progress that mistakenly think they are finished," he says.

The best way to overcome this limiting belief is to envision a better version of you—and start taking action to become your chosen future self.

What do you want to achieve? What actions will lead to the result?

Research shows that more than 80 percent of people abandon their New Year's resolutions by the second week of February.

Buck the odds. Take action every day. Don't break the chain.

Jay Harrington is an author, lawyer-turned-entrepreneur, and runs a northern Michigan-inspired lifestyle brand called Life and Whim. He lives with his wife and three young girls in a small town and writes about living a purposeful, outdoor-oriented life.

MAVO/SHUTTERSTOCK

Cafes are lively with the warm energy of people.

Why Being Stuck at Home Drains Our Creativity

Cafes offer far more than caffeinated beverage according to our history–and ongoing research

KORYDON SMITH, KELLY HAYES MCALONIE & REBECCA ROTUNDO

While the pandemic has caused thousands of small businesses to temporarily close or shutter for good, the disappearance of the corner coffee shop means more than lost wages.

It also represents a collective loss of creativity.

Researchers have shown how creative thinking can be cultivated by simple habits such as exercise, sleep, and reading. But another catalyst is unplanned interactions with close friends, casual acquaintances, and complete strangers. With the closure of coffee shops—not to mention places like bars, libraries, gyms, and museums—these opportunities vanish.

Of course, not all chance meetings result in brilliant ideas. Yet, as we bounce from place to place, each brief social encounter plants a small seed that can gel into a new idea or inspiration.

By missing out on chance meetings and observations that nudge our curiosity and jolt "a-ha!" moments, new ideas, big and small, go undiscovered.

It's Not the Caffeine, It's the People

Famous artists, novelists, and scientists are often seen as if their ideas and work come from a singular mind. But this is misleading. The ideas of even the most reclusive of poets, mathematicians, or theologians are part of larger conversations among peers, or are reactions and responses to the world.

As author Steven Johnson wrote in "Where Good Ideas Come From," the "trick to having good ideas is not to sit around in glorious isolation and try to think big thoughts." Instead, he recommends that we "go for a walk," "embrace serendipity" and "frequent coffeehouses and other liquid networks."

A well-designed coffee shop can facilitate creativity—where the unplanned friction between people can ignite sparks of innovation.

Just as today's freelance writers might use coffee shops as a second office, it was the tea- and coffeehouses of London in the 18th century that spurred the Age of Enlightenment. Then, as now, people intuitively knew they were "more productive or more creative when working from coffee shops," according to David Burkus, author of "The Myths of Creativity." As research shows, it's not the caffeine; it's the people. Simply being around other people who are working can motivate us to do the same.

In other words, creativity is social.

It's also contextual. The built environment plays a hidden but crucial role. Architectural researchers in the United Kingsom, for instance, found that classroom design impacts the speed at which students learn. They found that classroom features, such as furniture and lighting, have as much impact on learning as teachers. Similar aspects of cafe design can enhance creativity.

Designing for Creativity

Buildings influence a wide range of human functions. Temperature and humidity, for example, affect our ability to concentrate. Daylight is positively linked to productivity, stress management, and immune functions. And air quality, determined by HVAC systems as well as the chemical composition of furnishings and interior materials like carpet, affects both respiratory and mental health. Architectural design has even been connected to happiness.

Likewise, a well-designed coffee shop can facilitate creativity—where the unplanned friction between people can ignite sparks of innovation.

Philosopher Michel de Certeau said that the spaces we occupy are a backdrop on which the 'ensemble of possibilities' and 'improvisation' of everyday life occur.

Two newly completed coffee shops, the Kilogram Coffee Shop in Indonesia and Buckminster's Cat Cafe in Buffalo, New York, were designed with this kind of interactivity in mind.

Each has open, horizontal layouts that actually encourage congestion, which fosters chance encounters. Lightweight and geometric furniture enables occupants to rearrange seating and accommodate groups of various size, such as when a friend unexpectedly arrives. There are views outside, which promote calmness and offer more opportunities to daydream. And there is a moderate level of ambient noise—not too high or low—which induces cognitive disfluency, a state of deep, reflective thinking.

Restoring the Soul of the Coffee Shop

Of course, not all coffee shops have closed. Many shops have reduced indoor seating capacity, limited patrons to exterior seating, or have restricted services to takeout only as a means to stay open. All of them have faced the difficult task of implementing safeguards while retaining the atmosphere of their establishments. Some design elements, like lighting, can easily be retained amidst social distancing and other safety measures. Others, like movable seating for collaboration, are harder to achieve safely.

While these tweaks allow businesses to stay open and ensure the safety of customers, they sap spaces of their souls.

Philosopher Michel de Certeau said that the spaces we occupy are a backdrop on which the "ensemble of possibilities" and "improvisation" of everyday life occur.

When social life fully transitions into the digital realm, these opportunities become limited. Conversations become prearranged, while the side chats that take place before or after a meeting or event have been quashed. In video meetings, participants speak to either the whole room or no one.

For cafe owners, employees, and customers, the post-pandemic era can't come soon enough. After all, while customers ostensibly stop by their local coffee shop for a jolt of caffeine, the true draw of the place is in its haptic and hectic spirit.

Korydon Smith is a professor of architecture and co-founder of Global Health Equity at the University at Buffalo, Kelly Hayes McAlonie is an adjunct instructor of architecture at the University at Buffalo, and Rebecca Rotundo is an associate director of instructional design at the University at Buffalo. This article was first published on The Conversation.

HALFPOINT/SHUTTERSTOCK

Studies have shown that walking can relieve depression, reduce anxiety, and boost our creative and cognitive function.

Walking Your Way to Emotional Balance

Walking is the very best form of exercise and a neurological tonic, experts say

CONAN MILNER

In 2007, author Nita Sweeney suffered one devastating loss after another. That year, seven of her close friends and family members died.

Sweeney already struggled with chronic depression and bipolar disorder. But with so many loved ones passing away in such a short period of time, she fell to new depths, both mentally and physically.

"I was just emotionally paralyzed, and I started to gain a lot of weight," she said. "I was in such bad physical shape that even walking around the block was kind of a stretch."

Sweeney finally climbed out of her despair by putting one foot in front of the other. From 2007 to 2017, she went from barely being able to get out of bed, to walking every day and clocking many miles per week. Today, she walks alone, with her husband, in groups, with her dog, and whenever or wherever she finds an opportunity.

She says the rhythm of walking heals her.

"I don't know the science, but I know that there is something that happens when I feel the sway and rhythm of my body and my arms swing," she said.

This feeling has carried Sweeney through three full marathons, 26 half marathons, and more than 60 shorter races. Her running is slow (and mixed with lots of walking), but Sweeney isn't driven by speed, medals, or even physical fitness. For her, it's a "mental health journey."

In her book, "Depression Hates A Moving Target: How Running with My Dog Brought Me Back From the Brink," Sweeney describes how she was able to find emotional balance one step at a time.

Continued on ***Page 11***

"There is something about slowing down to the pace of the walk that lets things drop away in a way that they don't with other exercise.

Nita Sweeney, author

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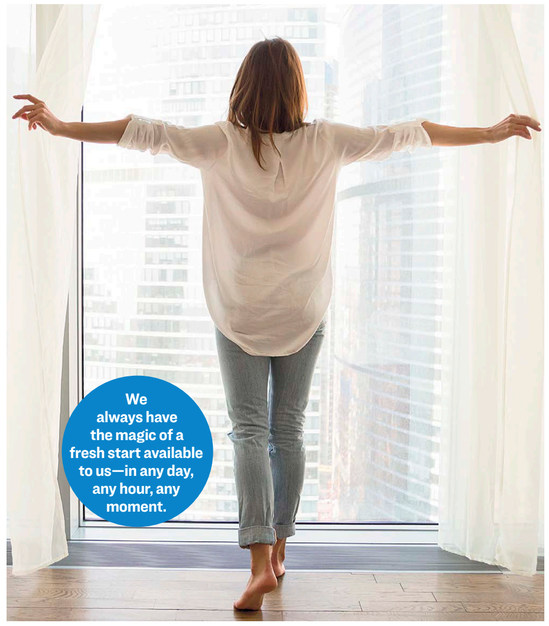

WISE HABITS

A New Year Is a Beautiful Fresh Start

The New Year gives us a major reset, but we can invoke a fresh start anytime

LEO BABAUTA

At the beginning of every year, it's like a blank slate: The year can be whatever you want it to be.

This is freeing, exhilarating, magical.

Take advantage of it, my friends.

Of course, we always have the magic of a fresh start available to us—in any day, any hour, any moment. Every morning is a beautiful fresh start! In fact, right this moment, you have the opportunity of a fresh start.

We should take advantage of these opportunities to see the freshness of the moment in front of us.

I recently was talking with my Zen teacher and admitted I hadn't been studying as much as I'd committed to doing. She advised: "Start at one." Basically, in basic breath meditation, where you might count your breaths, your mind will get distracted and wander. And then you can simply start at one.

Start at One—this is one of my mantras this year.

Let's look at how to practice with this during each day, and a couple ways you can take advantage of Starting at One as we look at this beautiful year in front of us.

Practicing a Fresh Start in Each Day

Every morning, you get to ask yourself:

- What would I like to do with this incredible day?
- What would make today incredible for me?
- What am I feeling called to do today? What's most important?

You can wipe the slate clean of whatever happened the day before (no matter what it was), and just start anew.

And then you get a couple hours into it, and maybe you find yourself off course. You've gotten distracted, or caught up in busywork.

Start again.

Take a breath, and imagine this next moment is a blank slate. What is most important right now? What would you like to do with this incredible hour in front of you?

Start again. And find gratitude that you get to start again, over and over.

Practicing With the Blank Slate of a New Year

We're a bit into the new year, and you might have already started to lose the freshness of this year. Don't. We're at the very beginning, and we can do whatever we like with this year.

What would make this an amazing year for you?

What is possible for you this year?

Who would you like to be?

Fresh starts are always possible. Every time you fail at a goal, fall off a new habit, or give in to temptation, you can just dust yourself off and try again.

Take a notebook and pen, and spend 30 minutes thinking about this fresh space, and writing out some notes.

Is this the year you finally write your book, launch something, create something? Grow your business to a new level, launch a new mission, help others in a big way? Tackle something hard and scary and meaningful?

Are there new habits you want to create?

This is your year, to use however you like. What magic can you create?

Putting It Into Action

Once you have an idea of what you'd like to do or create, it's time to make it actually happen.

Write it down and commit to it. Tell others and promise to report to them weekly. Adjust your plan each week, with the blank slate of the new week. Do a review each month, and get yourself back on track with each fresh month.

One small step at a time, make it happen. One fresh start at a time.

Leo Babauta is the author of six books, the writer of Zen Habits, a blog with over 2 million subscribers, and the creator of several online programs to help you master your habits. Visit ZenHabits.net

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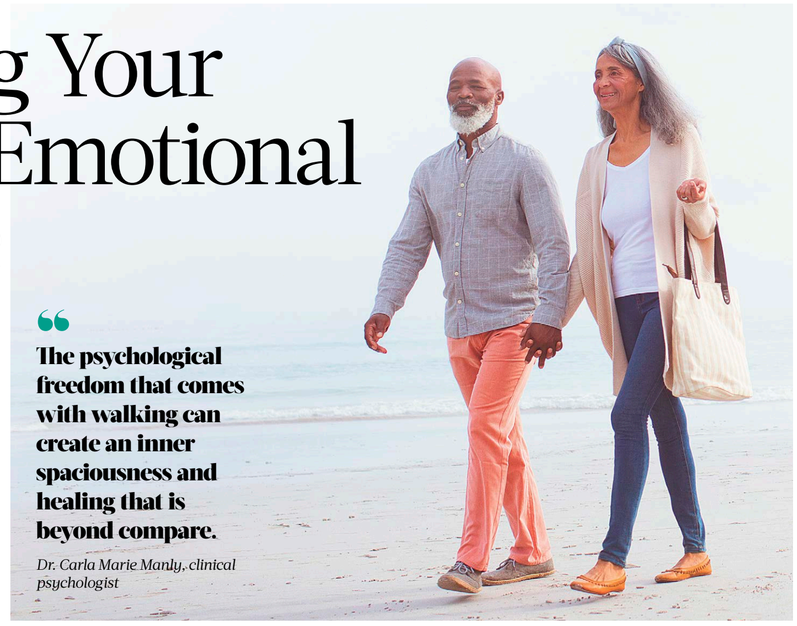
Walking Your Way to Emotional Balance



The psychological freedom that comes with walking can create an inner spaciousness and healing that is beyond compare.

Dr. Carla Marie Manly, clinical psychologist

Continued from ***Page 9***

"I know there are physical benefits. When I stop walking, I gain weight. When I walk again, I lose it. It's that simple," she said. "But for me, it's more emotional than physical. There is something about slowing down to the pace of the walk, that lets things drop away in a way that they don't with other exercise."

There is evidence to validate Sweeney's experience. Studies have shown that walking can relieve depression, reduce anxiety, and boost our creative and cognitive function.

When you add in the proven physical benefits that come from walking, it almost sounds too good to be true. The 2015 report from Harvard Medical School titled, "Walking for Health: Why this Simple Form of Activity Could Be Your Best Health Insurance," discusses solid science that shows walking can lower your blood pressure, fight heart disease, reduce the risk for Type 2 diabetes, and help you lose weight.

Getting the arms and legs and moving like that is a neurological tonic. It is as close to a gosh darn panacea as we have.

Dr. Eugene Charles, chiropractor and director, Applied Kinesiology Center of New York

Walking for Peace of Mind

It's clear we don't walk as much as we used to. In the past, we had no choice. Unless you owned a horse or canoe, walking was the only way to get around. With the rise of cars and a growing distance between home and work, walking for more than a short distance has become quaint, almost obsolete. It's no longer a reasonable option when you have places to go and people to see.

Modern transit allows us to cover far more ground in less time. But while walking may not be practical for daily travel, it could help us better handle our hectic schedules.

The swinging of your arms stimulates your lymphatic system to pump waste out of your blood.

One reason walking has become a priority for Sweeney is that it helps her work off anxiety.

"It's a way for me to calm down," she said. "I just need a little bit of the rhythm, not much, but I just feel better."

Clinical psychologist Dr. Carla Marie Manly says that, psychologically speaking, "walking is simply amazing." She points to research proving that walking as little as 12 minutes can elevate your mood for several hours.

"When we walk, we are actually able to leave our troubles behind on physical and metaphorical levels," Manly said. "The psychological freedom that comes with walking can create an inner spaciousness and healing that is beyond compare."

Manly observed walking's healing power when she worked with juveniles on probation. She would often do "walk and talk" therapy with these kids, and saw them thrive with the sense of freedom that walking delivers.

"Their troubles and issues felt less pressing when they were outside walking with me," she said. "Adults can benefit in the same way."

Whether it's crawling, walking, or running, this cross-lateral motion helps align both your body's structure and your brain, by bridging its right and left hemispheres.

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Manly takes her own medicine. Her mornings always begin with a walk in a nearby park. If there's a break in her client schedule, she'll grab another five- to 10-minute walk around the block to clear her head and move her body.

"For me, a day without a walk is like a day without water."

The Best Exercise

We all know we should move more, but we may dismiss walking because it seems far too basic to be a viable or effective fitness option. It doesn't seem to provide enough of a challenge to make a difference.

Dr. Eugene Charles, a Manhattan-based chiropractor and director of the Applied Kinesiology Center of New York, says his patients are usually more interested in Zumba, cross-fit, Pilates, hot yoga, or other exercises of the moment than they are with walking.

But Charles says walking should be everyone's primary exercise. He recommends 45 minutes a day for those who want to lose weight, 30 minutes for those trying to maintain their weight, and a walk any time you're feeling down. Charles says walking will make all of your other physical endeavors that much better—even if you're already very active.

"I believe all exercise is good, but walking is the best, because it really suits the human frame," Charles said. "Getting the arms and legs and moving like that is a neurological tonic. It is as close to a gosh darn panacea as we have."

If the goal of exercising is a more functional mind and body, Charles says walking accomplishes this better than anything else. He describes walking as a way to tune up your mind and body. Walking makes you stand up straighter, it increases circulation to the entire body and sets it to a soothing rhythm. It also improves balance and coordination.

Walking does all this by engaging what is known as the "cross-crawl" mechanism, where your right arm and left leg (and vice versa) move back and forth in tandem. This symmetrical crossover pattern is what babies develop as they learn to crawl, and is found to be essential to both their physical and cognitive development.

Charles says whether it's crawling, walking, or running, this cross-lateral motion helps align both your body's structure and your brain, by bridging its right and left hemispheres.

"My opinion is that walking stimulates the cerebellum, which helps with memory, cognition, and can prevent Alzheimer's and Parkison's. I tell my patients, 'If you walk, you'll get smarter. If I'm wrong, you're just going to be in great shape,'" Charles said.

One of the best things about walking is how easy and accessible it is.

Other aspects of walking also contribute to your health with every step. Proper heel-to-toe form stimulates the receptors in the bottoms of your feet to relieve stress throughout your body and pump oxygenated blood up to your brain. The swinging of your arms stimulates your lymphatic system to pump waste out of your blood.

In short, regular walking makes you better equipped to handle life.

Movement Motivation

One of the best things about walking is how easy and accessible it is. All you need is a dry path (or a treadmill) and a decent pair of shoes.

The hardest part, however, is getting started.

Sweeney says her depression and bipolar disorder can still hold her down, but if she can find some momentum for a walk, she knows things will get better.

"You just have to push back a little. It doesn't have to be that much," she said. "If I can just get myself moving at all, then everything else conspires to help me move wherever I'm heading."

Of course, there are also benefits from strenuous exercise that leaves you huffing, puffing, and sore the next day. But it doesn't have to be part of your walking routine. Charles says to take it easy, especially if you're in pain, weak, or just starting out.

"You can make it as sublime, peaceful, and rhythmic as you want. It's really up to you," he said. "Even if you walk at a snail's pace, it's still healthy for you."

Proper heel-to-toe form stimulates the receptors in the bottoms of your feet to relieve stress throughout your body and pump oxygenated blood up to your brain.

Seasoned walkers often advise that you get more out of your walk if you leave your gadgets behind. Let your arms swing. Let your mind wander. Notice the details in the world around you. Enjoy the moment.

Caleb Backe, a personal trainer and wellness expert for Maple Holistics, says walking works best when we take the chance to unplug. He prefers to walk in silence.

"Walking in silence with yourself, ideally in a natural setting, allows for true introspection," he said. "You'll recognize a good walk when you get back home and feel like a better version of yourself."

Sweeney is part of a walking group to help keep her motivated and to provide a sense of community. But she says these group walks are no replacement for her quiet walks alone, which she considers "almost sacred."

"It's a special time with myself," she said. "I like walking with my husband, but there's something about just being out there alone that is a respite from the craziness of life."

POSITIVE AGING

Our Resilience Factor

The ability to adapt to hardship will decide whether we can rise up to meet to life's challenges

Unfortunately, we humans have adapted to focus more on bad life experiences than good ones.

MARILYN MURRAY WILLISON

According to conventional wisdom, every person on the planet faces challenges, even though it sometimes seems that a chosen few skate through life unscathed.

The truth is, at some point or another, events—a broken heart, family conflicts, a health crisis, job loss, money problems, political upheaval—will bring us to our knees.

The good news is that it's possible to survive (and even thrive) afterward as long as we're resilient. Resilience is the ability to adapt in the face of adversity or change and recover well from hardship and tragedy. Our resilience can deepen if we face the stresses of life.

My favorite go-to source for boosting my personal resilience is a terrific book published over a decade ago that is full of timeless wisdom and useful tools. "The Resilience Factor: 7 Essential Skills for Overcoming Life's Inevitable Obstacles," by Drs. Karen Reivich and Andrew Shatté, is based on proven ways to counteract negative and defeatist thought patterns.

We all remember how Eeyore from the Winnie-the-Pooh books by A. A. Milne wallowed in dreary and pessimistic thoughts in sharp contrast to his upbeat and optimistic friend Tigger. How annoying that tendency was, though his friends would cheer him up over and over again without complaint.

Unfortunately, we humans have adapted to focus more on bad life experiences than good ones. Why? Because our brains want us to "overlearn" from situations like betrayal, bullying, deprivation, and disappointment so that we can program ourselves to avoid those events in the future or react quickly to them when and if they reappear.

The human brain tries to help us solve problems by 1) understanding their origin, 2) challenging the way we think about future problems, and 3) helping us become more resilient in the face of adversity. According to Reivich and Shatté, there are easy steps to help us build our own resilience bank account:

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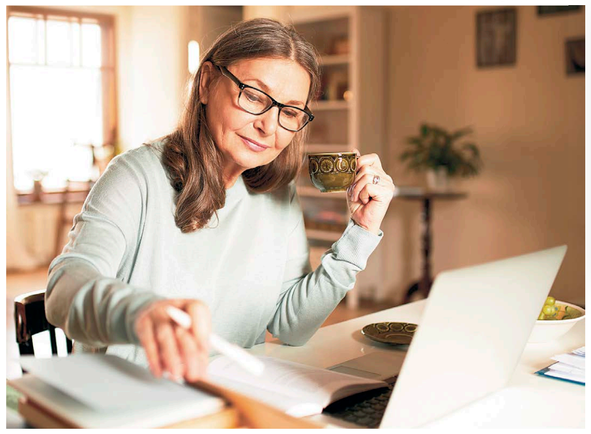

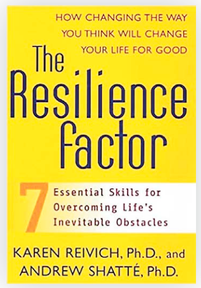

"The Resilience Factor: 7 Essential Skills for Overcoming Life's Inevitable Obstacles," by Drs. Karen Reivich and Andrew Shatté.

- When faced with adversity, listen to your thoughts; pay attention to what you say to yourself in that situation, and then analyze how those thoughts affect your behavior and feelings.
- Avoid negative thoughts and self-talk that undermine your resilience.
- Identify your deep or hidden beliefs, and then measure how and when they help or hurt you.
- Avoid imaginary "what if" thoughts and the misperception that every failure or mistake is (or will be) catastrophic.
- If you feel emotionally overwhelmed or stressed, do your very best to remain calm and focused.
- Flip your counterproductive thoughts into more resilient ones.

While this is definitely not a traditional motivational book, it does have useful "resilience quotient" activities, charts, and tests to help readers evaluate and improve different areas of their life. The goal is to help us understand our beliefs, improve our reactions, and become better at overcoming adversity. The ultimate message is for us to minimize what has gone wrong in the past so that we can build, expand, and improve the good things that are already in our lives.

One of the easiest ways to build resilience and begin being nicer to ourselves in troubling times is to ask what we would say to a friend who happened to be in the same situation.

One of the easiest ways to build resilience and begin being nicer to ourselves in troubling times is to ask what we would say to a friend who happened to be in the same situation. Chances are we would be kinder, not as critical, and less judgmental to someone else than we would be to ourselves.

Marilyn Murray Willison has had a varied career as a six-time nonfiction author, columnist, motivational speaker, and journalist in both the UK and the U.S. She is the author of The Self-Empowered Woman blog and the award-winning memoir "One Woman, Four Decades, Eight Wishes." She can be reached at MarilynWillison.com. To find out more about Marilyn and read her past columns, please visit the Creators Syndicate website at Creators.com. Copyright 2020 Creators.com

When Empathy Hurts, Compassion Can Heal

A new study shows compassion training can help us cope with other peoples' distress

ADAM HOFFMAN

Empathy can be painful.

Or so suggests a growing body of neuroscientific research. When we witness suffering and distress in others, our natural tendency to empathize can bring us vicarious pain.

Is there a better way of approaching distress in other people? A recent study, published in the journal Cerebral Cortex, suggests that we can better cope with others' negative emotions by strengthening our own compassion skills, which the researchers define as "feeling concern for another's suffering and desiring to enhance that individual's welfare."

"Empathy is really important for understanding others' emotions very deeply, but there is a downside of empathy when it comes to the suffering of others," says Olga Klimecki, a researcher at the Max Planck Institute for Human Cognitive and Brain Sciences in Germany and the lead author of the study. "When we share the suffering of others too much, our negative emotions increase. It carries the danger of an emotional burnout."

The research team sent study participants to a one-day loving-kindness meditation class, which utilized techniques and philosophies from Eastern contemplative traditions. Participants, none of whom had prior meditation experience, practiced extending feelings of warmth and care toward themselves, a close person, a neutral person, a person in difficulty, and complete strangers, as a way of developing their compassion skills.

Both before and after the training, participants were shown videos of people in distress (e.g., crying after their home was flooded). Following exposure to each video, the researchers measured the subjects' emotional responses through a survey. Their brain activity was also recorded using an fMRI machine, a device that tracks real-time blood-flow in the brain, thereby enabling the scientists to see what brain areas were active in response to viewing the videos.

They found that the compassion training led participants to experience significantly more positive emotion when viewing the distressing videos. In other words, they seemed better able to cope with distress than they did before the training—and they coped better than a control group that did not receive the compassion training.

"Through compassion training, we can increase our resilience and approach stressful situations with more positive affect," says Klimecki.

The positive emotional approach was accompanied by a change in brain activation pattern: Before the training, participants showed activity in an "empathic" network associated with pain perception and unpleasantness; after the training, activity shifted to a "compassionate" network that has been associated with love and affiliation.

Their new brain-activation patterns more closely resembled those of an "expert" who had meditated every day on compassion for more than 35 years, whose brain was scanned by the researchers to provide a point of comparison. This result suggests that the training brought about fundamental changes in the ways their brains processed distressing scenes, strengthening the parts that try to alleviate suffering—an example of neuroplasticity, when the brain physically evolves in response to experience.

Negative emotions did not disappear after the loving-kindness training; it's just that the participants were less likely to feel distressed themselves. According to Klimecki and her colleagues, this suggests that the training allowed participants to stay in touch with the negative emotion from a calmer mindset. "Compassion is a good antidote," says Klimecki. "It allows us to connect to others' suffering, without being too distressed."

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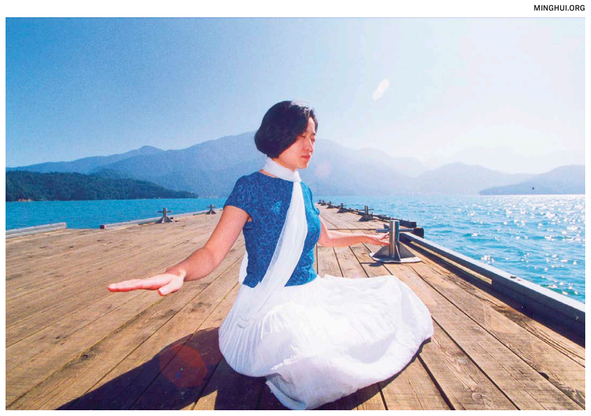


Through the cultivation of compassion we can change the way we respond to certain situations.

The main takeaway is that we can shape our own emotional reactions, and can alter the way we feel and respond to certain situations.

The main takeaway is that we can shape our own emotional reactions, and can alter the way we feel and respond to certain situations. In other words, says Klimecki, "Our emotions are not set in stone."

So is taking a compassion course like the one offered through this study the only way to build compassion? No. Research suggests you can cultivate a compassionate mindset through encouraging cooperation, practicing mindfulness, refraining from placing blame on others, acting against inequality, and being receptive to others' feelings without adopting those feelings as your own.

Adam Hoffman is a Greater Good editorial assistant. This article was originally published on Greater Good online magazine.

Children's Hospitals Grapple With Wave of Mental Illness

Social distancing directly interferes with the social connection at the heart of many therapies

CARMEN HEREDIA RODRIGUEZ

Krissy Williams, 15, had attempted suicide before, but never with pills.

The teen was diagnosed with schizophrenia when she was 9. People with this chronic mental health condition perceive reality differently and often experience hallucinations and delusions. She learned to manage these symptoms with a variety of services offered at home and at school.

But the pandemic upended those lifelines. She lost much of the support offered at school. She also lost regular contact with her peers. Her mother lost access to respite care—which allowed her to take a break.

On a Thursday in October, the isolation and sadness came to a head. As Krissy's mother, Patricia Williams, called a mental crisis hotline for help, she said, Krissy stood on the deck of their Maryland home with a bottle of pain medication in one hand and water in the other.

Before Patricia could react, Krissy placed the pills in her mouth and swallowed.

The higher demand for child mental health services caused by the pandemic has made finding a bed at an inpatient unit more difficult.

Efforts to contain the spread of the novel coronavirus in the United States have led to drastic changes in the way children and teens learn, play, and socialize. Tens of millions of students are attending school through some form of distance learning. Many extracurricular activities have been canceled. Playgrounds, zoos, and other recreational spaces have closed. Kids like Krissy have struggled to cope, and the toll is becoming evident.

Government figures show the proportion of children who arrived in emergency departments with mental health issues increased 24 percent from mid-March through mid-October, compared with the same period in 2019. Among preteens and adolescents, it rose by 31 percent. Anecdotally, some hospitals said they're seeing more cases of severe depression and suicidal thoughts among children, particularly attempts to overdose.

The increased demand for intensive mental health care that has accompanied the pandemic has worsened issues that have long plagued the system. In some hospitals, the number of children unable to immediately get a bed in the psychiatric unit rose. Others reduced the number of beds or closed psychiatric units altogether to reduce the spread of COVID-19.

"It's only a matter of time before a tsunami sort of reaches the shore of our service system, and it's going to be overwhelmed with the mental health needs of kids," said Jason Williams, a psychologist, and director of operations of the Pediatric Mental Health Institute at Children's Hospital Colorado.

"I think we're just starting to see the tip of the iceberg, to be honest with you."

Before COVID, more than 8 million kids between ages 3 and 17 were diagnosed with a mental or behavioral health condition, according to the most recent National Survey of Children's Health.

A separate survey from the Centers for Disease Control and Prevention found 1 in 3 high school students in 2019 reported feeling persistently sad and hopeless—a 40 percent increase from 2009.

The COVID-19 pandemic appears to be adding to these difficulties. A review of 80 studies found that forced isolation and loneliness among children correlated with an increased risk of depression.

"We're all social beings, but they're [teenagers] at the point in their development where their peers are their reality," said Terrie Andrews, a psychologist and administrator of behavioral health at Wolfson Children's Hospital in Florida. "Their peers are their grounding mechanism."

Children's hospitals in New York, Colorado, and Missouri all reported an uptick in the number of patients who thought about or attempted suicide. Clinicians also mentioned spikes in children with severe depression and those with autism who are acting out.

The number of overdose attempts among children has caught the attention of clinicians at two facilities. Andrews from Wolfson Children's said the facility gives out lockboxes for weapons and medication to the public—including parents who come in after children attempted to take their life using medication.

Children's National Hospital in Washington, D.C., also has experienced an uptick, said Dr. Colby Tyson, associate director of inpatient psychiatry. She's seen children's mental health deteriorate due to a likely increase in family conflict—often a consequence of the chaos caused by the pandemic. Without school, connections with peers, or employment, families don't have the opportunity to spend time away from one another and regroup, which can add stress to an already tense situation.

"That break is gone," she said.

The higher demand for child mental health services caused by the pandemic has made finding a bed at an inpatient unit more difficult.

Now some hospitals report running at full capacity and having more children "boarding," or sleeping in emergency departments before being admitted to the psychiatric unit. Among them is the Pediatric Mental Health Institute at Children's Hospital Colorado. Williams said the inpatient unit has been full since March. Some children now wait nearly two days for a bed, up from the eight to 10 hours common before the pandemic.

Cincinnati Children's Hospital Medical Center in Ohio is also running at full capacity, according to clinicians, and had several days in which the unit was above capacity and placed kids in the emergency department as they waited to be admitted. In Florida, Andrews said, up to 25 children have been held on surgical floors at Wolfson Children's while waiting for a spot to open in the inpatient psychiatric unit. Their wait could last as long as five days, she said.

Multiple hospitals said the usual summer slump in child psychiatric admissions was missing last year. "We never saw that during the pandemic," said Andrews. "We stayed completely busy the entire time."

Some facilities have decided to reduce the number of beds available to maintain physical distancing, further constricting supply. Children's National in D.C. cut five beds from its unit to maintain single occupancy in every room, said Dr. Adelaide Robb, division chief of psychiatry and behavioral sciences.

The measures taken to curb the spread of COVID-19 have also affected the way hospitalized children receive mental health services. In addition to providers wearing protective equipment, some hospitals like Cincinnati Children's rearranged furniture and placed cues on the floor as reminders to stay 6 feet apart. UPMC Western Psychiatric Hospital in Pittsburgh and other facilities encourage children to keep their masks on by offering rewards like extra computer time. Patients at Children's National now eat in their rooms, a change from when they ate together.

Despite the need for distance, social interaction still represents an important part of mental health care for children, clinicians said. Facilities have come up with various ways to do so safely, including creating smaller pods for group therapy. Kids at Cincinnati Children's can play with toys, but only with ones that can be wiped clean afterward. No cards or board games, said Dr. Suzanne Sampang, clinical medical director for child and adolescent psychiatry at the hospital.

"I think what's different about psychiatric treatment is that, really, interaction is the treatment," she said, "just as much as a medication."

The added infection-control precautions pose challenges to forging therapeutic connections. Masks can complicate the ability to read a person's face. Online meetings make it difficult to build trust between a patient and a therapist.

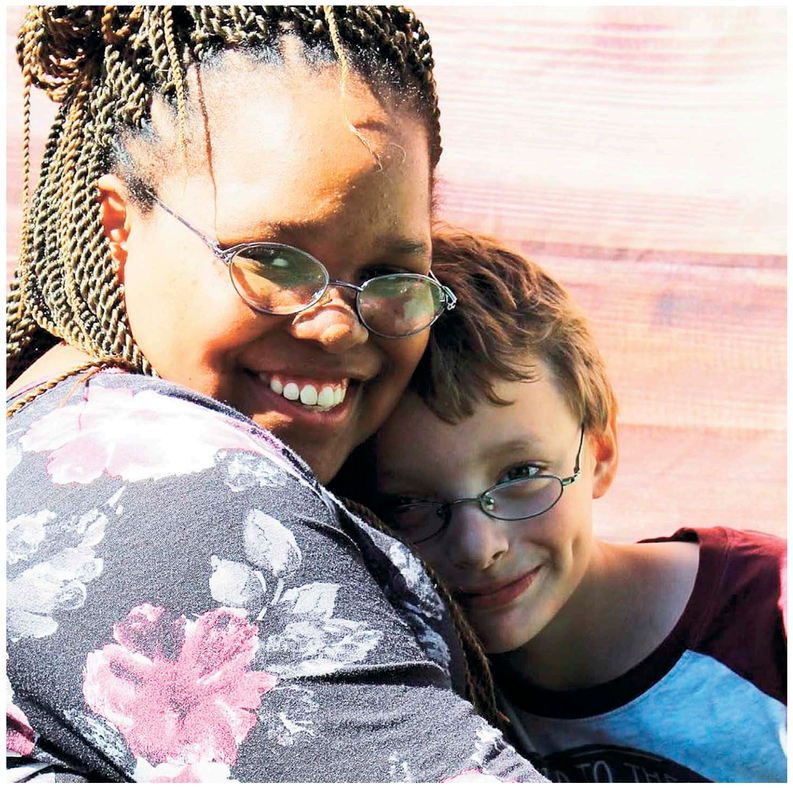
"There's something about the real relationship in person that the best technology can't give to you," said Robb.

For now, Krissy is relying on virtual platforms to receive some of her mental health services. Despite being hospitalized and suffering brain damage due to the overdose, she is now at home and in good spirits. She still has fun, like trying to beat her mother at Super Mario Bros. on the Wii. But being away from her friends, she said, has been a hard adjustment.

"When you're used to something," she said, "it's not easy to change everything."

If you have contemplated suicide or someone you know has talked about it, call the National Suicide Prevention Lifeline at 1-800-273-8255, or use the online Lifeline Crisis Chat, both available 24 hours a day, seven days a week.

PATRICIA WILLIAMS



Krissy Williams, pictured with her brother, lives with schizophrenia. The disruption to her school and health services caused by COVID-19 worsened her mental health. In October, she tried to take her own life.

"We're all social beings, but they're [teenagers] at the point in their development where their peers are their reality.

Terrie Andrews, psychologist and administrator of behavioral health, Wolfson Children's Hospital in Florida

Carmen Heredia Rodriguez is a reporter for Kaiser Health News, which first published this article. KHN's coverage of these topics is supported by The John A. Hartford Foundation, Gordon and Betty Moore Foundation, and The SCAN Foundation.

ADRIAN PRANATA/UNSPLASH

Landmark Publication on Vitamin C for COVID-19

Research review cements case for vitamin C as a standard therapeutic protocol

JOSEPH MERCOLA

Regardless of what the mainstream media wants you to think, many are starting to realize that vitamin C (ascorbic acid) and vitamin D both have an enormous amount of research showing they provide important immune function enhancements, and that your immune function is your frontline defense against all illness, including COVID-19.

The following was reported in the paper "Optimal Nutritional Status for a Well-Functioning Immune System Is an Important Factor to Protect Against Viral Infections," published April 23, 2020:

"The role nutrition plays in supporting the immune system is well-established. A wealth of mechanistic and clinical data show that vitamins, including vitamins A, B6, B12, C, D, E, and folate; trace elements, including zinc, iron, selenium, magnesium, and copper; and the omega-3 fatty acids eicosapentaenoic acid and docosahexaenoic acid play important and complementary roles in supporting the immune system."

"Inadequate intake and status of these nutrients are widespread, leading to a decrease in resistance to infections and as a consequence an increase in disease burden."

High-Dose Vitamin C Acts as Antiviral Drug

As explained by Dr. Andrew Saul, editor-in-chief of the Orthomolecular Medicine News Service, at extremely high doses, vitamin C actually acts as an antiviral drug, effectively inactivating viruses.

His Tokyo presentation, "Orthomolecular Medicine and Coronavirus Disease: Historical Basis for Nutritional Treatment," highlights the fact that when used as a treatment, high doses of vitamin C—often 1,000 times more than the U.S. Recommended Dietary Allowance (RDA)—are needed.

It's a cornerstone of medical science that dose affects treatment outcome, but this premise isn't accepted when it comes to vitamin therapy the way it is with drug therapy. Most vitamin C research has used inadequate, low doses, which don't lead to clinical results.

"The medical literature has ignored over 80 years of laboratory and clinical studies on high-dose ascorbate therapy," Saul notes, adding that while it's widely accepted that vitamin C is beneficial in fighting illness, controversy exists over to what extent.

"Moderate quantities provide effective prevention," he says. "Large quantities are therapeutic."

Landmark Paper Puts Vitamin C on COVID-19 Treatment Map

While health authorities and mainstream media have ignored, if not outright opposed, the use of vitamin C and other supplements in the treatment of COVID-19, citing lack of clinical evidence, we now have a landmark review recommending the use of vitamin C as an adjunctive therapy for respiratory infections, sepsis, and COVID-19.

The review was published Dec. 7, 2020, in the journal Nutrients. It was co-written by Dr. Paul Marik who, in 2017, developed a groundbreaking vitamin C-based treatment for sepsis. Marik is now heading up the Front Line COVID-19 Critical Care Alliance, which has developed a highly successful treatment for COVID-19.

The COVID-19 protocol was initially dubbed MATH+ (an acronym based on the key components of the treatment), but after several tweaks and updates, the prophylaxis and early outpatient treatment protocol is now known as I-MASK+ while the hospital treatment has been renamed I-MATH+, due to the addition of the drug Ivermectin. Vitamin C remains a central component of the treatment.

The two protocols are available for download on the FLCCC Alliance website in multiple languages. The clinical and scientific rationale for the I-MATH+ hospital protocol has also been peer-reviewed and was published in the Journal of Intensive Care Medicine in mid-December 2020.

As explained in the Nutrients review abstract:

"There are limited proven therapies for COVID-19. Vitamin C's antioxidant, anti-inflammatory and immunomodulating effects make it a potential therapeutic candidate, both for the prevention and amelioration of COVID-19 infection, and as an adjunctive therapy in the critical care of COVID-19.

"This literature review focuses on vitamin C deficiency in respiratory infections, including COVID-19, and the mechanisms of action in infectious disease, including support of the stress response, its role in preventing and treating colds and pneumonia, and its role in treating sepsis and COVID-19.

"The evidence to date indicates that oral vitamin C (2-8 g/day) may reduce the incidence and duration of respiratory infections and intravenous vitamin C (6-24 g/day) has been shown to reduce mortality, intensive care unit (ICU) and hospital stays, and time on mechanical ventilation for severe respiratory infections ...

"Given the favorable safety profile and low cost of vitamin C, and the frequency of vitamin C deficiency in respiratory infections, it may be worthwhile testing patients' vitamin C status and treating them accordingly with intravenous administration within ICUs and oral administration in hospitalized persons with COVID-19."

International Vitamin C Campaign Launched

In a Dec. 16, 2020, action alert, Rob Verkerk, founder and scientific director of the Alliance for Natural Health, announced the launch of an international vitamin C campaign in response to the landmark review, which "puts all the arguments and science in one, neat place."

> **There is ample evidence to show that supplements like zinc, vitamin C, and vitamin D can help prevent and treat COVID-19, but we're prevented from learning about these benefits by the federal government.**
>
> *Rob Verkerk, founder and scientific director, Alliance for Natural Health*

As noted by Verkerk, there are several reasons to take supplemental vitamin C. First, your body can't make it. Second, most people don't get sufficient amounts from their diet, and, third, your body's requirement for vitamin C can increase 10-fold whenever your immune system is challenged by an infection, disease, or physical trauma.

In fact, the Nutrients review points out that it's common for hospitalized patients to have overt vitamin C deficiency, defined as a blood level at or below 11 umol/L. This is particularly true for older patients and those hospitalized for respiratory infections.

According to the authors, "Vitamin C concentrations are three to 10 times higher in the adrenal glands than in any other organ. It is released from the adrenal cortex under conditions of physiological stress (ACTH stimulation), including viral exposure, raising plasma levels fivefold."

In his action alert, Verkerk notes:

"Taking vitamin C as a preventative and then upping your intake if you're infected is a no brainer. So is using vitamin C intravenously for those with acute respiratory infections, or sepsis, in critical care.

"So much so, that we argue—given the now available evidence—that doctors and other health professionals who avoid recommendations on vitamin C in relation to COVID disease prevention and treatment, should be considered medically negligent ...

"There is ample evidence to show that supplements like zinc, vitamin C, and vitamin D can help prevent and treat COVID-19, but we're prevented from learning about these benefits by the federal government.

"Because supplements are not, and can never become, FDA-approved, they cannot claim to have an impact on disease, even when we know they can. This nonsense has to stop."

How Vitamin C Works

As mentioned, the Nutrients review details vitamin C's mechanisms of action and how it helps in cases of infectious disease, including the common cold, pneumonia, sepsis, and COVID-19. For starters, vitamin C has the following basic properties:

- Anti-inflammatory
- Immunomodulatory
- Antioxidant
- Antithrombotic
- Antiviral

ELNUR/SHUTTERSTOCK

Vitamin C deficiency, and COVID-19 share many of the same risk factors, including male gender, darker skin, older age, and comorbidities such as diabetes, high blood pressure, and COPD.

Beneficial antiviral effects apply to both the innate and adaptive immune systems. When you have an infection, vitamin C improves your immune function in part by promoting the development and maturation of T-lymphocytes, a type of white blood cell that is an essential part of your immune system.

Phagocytes, immune cells that kill pathogenic microbes, are also able to take in oxidized vitamin C and regenerate it to ascorbic acid.

Vitamin C Actions Against COVID-19

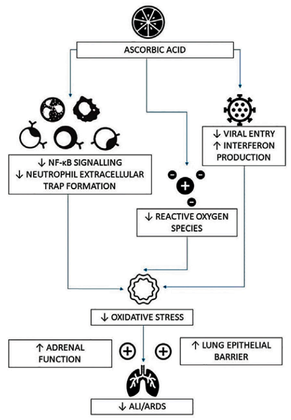
With regard to COVID-19 specifically, vitamin C helps downregulate inflammatory cytokines, thereby reducing the risk of a cytokine storm. It also reduces inflammation through the activation of NF-κB and by increasing superoxide dismutase, catalase, and glutathione. Epigenetically, vitamin C regulates genes involved in the upregulation of antioxidant proteins and downregulation of proinflammatory cytokines.

Vitamin C also upregulates expression of Type-1 interferons, your primary antiviral defense mechanism, which SARS-CoV-2 downregulates.

Vitamin C eliminates ACE2 upregulation induced by IL-7. This is particularly noteworthy, as the ACE2 receptor is the entry point for SARS-CoV-2 (the virus' spike protein binds to ACE2).

Vitamin C also appears to be a powerful inhibitor of Mpro, a key protease (enzyme) in SARS-CoV-2 that activates viral nonstructural proteins.

The graph below, from the Nutrients review, illustrates the key ways in which vitamin C ameliorates the pathology seen in COVID-19.



Clinical Evidence

The Nutrients review also includes clinical evidence for the role of vitamin C in COVID-19, noting that early oral supplementation might help prevent a mild case from developing into something more serious. In patients with critical symptoms, intravenous administration of vitamin C has been shown to speed up recovery, reducing both ICU stays and mortality.

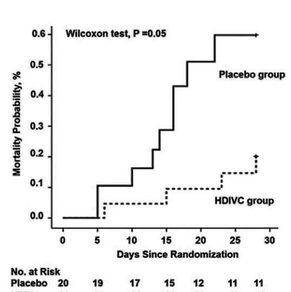
Interestingly, vitamin C deficiency, and COVID-19 share many of the same risk factors, including male gender, darker skin, older age, and comorbidities such as diabetes, high blood pressure, and COPD. All of these subgroups are at increased risk for severe COVID-19 and, according to the review authors, all "have also been shown to have lower serum vitamin C levels."

Commenting on the clinical evidence supporting the use of vitamin C in the treatment of COVID-19, the authors write:

"There are currently 45 trials registered on Clinicaltrials.gov investigating vitamin C with or without other treatments for COVID-19. In the first RCT to test the value of vitamin C in critically ill COVID-19 patients, 54 ventilated patients in Wuhan, China, were treated with a placebo (sterile water) or intravenous vitamin C at a dose of 24 g/day for 7 days ...

"The more severely ill patients with SOFA [sequential organ failure assessment] scores ≥3 in the vitamin C group exhibited a reduction in 28-day mortality: 18 percent versus 50 percent in univariate survival analysis (Figure 2). No study-related adverse events were reported."

Figure 2 below, from version 1 of the study, "High-Dose Vitamin C Infusion for the Treatment of Critically Ill COVID-19," posted on the preprint server Research Square August 10, 2020 (updated Sept. 23, at which point it was renamed), shows the 28-day mortality rates between critically ill COVID-19 patients given high-dose IV vitamin C (HDIVC) compared to those given a placebo.



The Nutrient review also summarizes findings from other COVID-19 trials using vitamin C, as well as a few case reports:

"In the UK, the Chelsea and Westminster hospital ICU, where adult ICU patients were administered 1 g of intravenous vitamin C every 12 h together with anticoagulants, has reported 29 percent mortality, compared to the average 41 percent reported by the Intensive Care National Audit and Research Centre (ICNARC) for all UK ICUs ...

"The Frontline COVID-19 Critical Care Expert Group (FLCCC), a group of emergency medicine experts, have reported that, with the combined use of 6 g/day intravenous vitamin C (1.5 g every 6 h), plus steroids and anticoagulants, mortality was 5 percent in two ICUs in the US (United Memorial Hospital in Houston, Texas, and Norfolk General Hospital in Norfolk, Virginia), the lowest mortality rates in their respective counties.

"A case report of 17 COVID-19 patients who were given 1 g of intravenous vitamin C every 8 h for 3 days reported a mortality rate of 12 percent with 18 percent rates of intubation and mechanical ventilation and a significant decrease in inflammatory markers, including ferritin and D-dimer, and a trend towards decreasing FiO2 requirements.

"Another case of unexpected recovery following high-dose intravenous vitamin C has also been reported. While these case reports are subject to confounding and are not prima facie evidence of effects, they do illustrate the feasibility of using vitamin C for COVID-19 with no adverse effects reported."

How Much Vitamin C Do You Need?

As detailed in the introduction of the Nutrients review, primates and humans are dependent on an adequate supply of vitamin C from fruits and vegetables. Gorillas need 4.5 grams a day, while smaller primates weighing around 7.5 kilos need about 600 mg per day. This gives us a clue as to what the human requirement might be, and it's quite a bit higher than the daily recommended intake. According to the authors:

"The EU Average Requirement of 90 mg/day for men and 80 mg/day for women is to maintain a normal plasma level of 50 umol/L, which is the mean plasma level in UK adults. This is sufficient to prevent scurvy but may be inadequate when a person is under viral exposure and physiological stress.

"An expert panel in cooperation with the Swiss Society of Nutrition recommended that everyone supplement with 200 mg 'to fill the nutrient gap for the general population and especially for the adults age 65 and older. This supplement is targeted to strengthen the immune system.' The Linus Pauling Institute recommends 400 mg for older adults (>50 years old).

"Pharmacokinetic studies in healthy volunteers support a 200-mg daily dose to produce a plasma level of circa 70 to 90 umol/L. Complete plasma saturation occurs between 1 g daily and 3 g every four hours, being the highest tolerated oral dose, giving a predicted peak plasma concentration of circa 220 umol/L.

"The same dose given intravenously raises plasma vitamin C levels approximately tenfold. Higher intakes of vitamin C are likely to be needed during viral infections with 2–3 g/day required to maintain normal plasma levels between 60 and 80 umol/L. Whether higher plasma levels have additional benefit is yet to be determined, but would be consistent with the results of the clinical trials discussed in this review."

While high-dose vitamin C regimens typically call for intravenous administration, if treating a viral infection at home (be it COVID-19 or something else), you could use oral liposomal vitamin C, as this allows you to take far higher doses without causing loose stools.

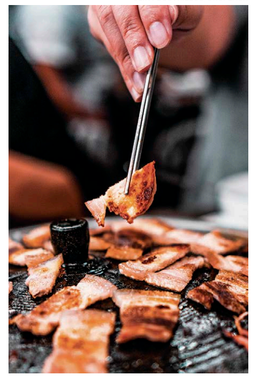
You can take up to 100 grams of liposomal vitamin C without problems and get really high blood levels, equivalent to or higher than intravenous vitamin C. I view that as an acute treatment, however. I discourage people from taking mega doses of vitamin C on a regular basis if they're not actually sick, because it is essentially a drug—or at least it works like one.

Saul, who has worked with and recommended vitamin C for most of his professional life suggests taking "enough vitamin C to be symptom-free," whatever dosage that might be. When you're well, you typically don't need more than the 200 mg to 400 mg recommended in the quote above.

Dr. Joseph Mercola is the founder of Mercola.com. An osteopathic physician, best-selling author, and recipient of multiple awards in the field of natural health, his primary vision is to change the modern health paradigm by providing people with a valuable resource to help them take control of their health. This article was originally published on Mercola.com

Kidney Toxins Created by Meat Consumption

CLINT BUSTRILLOS/UNSPLASH



MICHAEL GREGER

A diet rich in animal-sourced foods like meat, eggs, and cheese can contribute to heart disease, stroke, and death through a biochemical process that clogs arteries with plaque.

Atherosclerosis is the formal term for plaque collecting on and hardening the arterial walls. Animal foods increase the production of an atherosclerosis-inducing substance called Trimethylamine N-oxide (TMAO).

With the help of certain gut bacteria, the choline and carnitine found concentrated in animal products can get converted into TMAO.

Cholesterol is a primary cause of atherosclerosis, but TMAO appears to accelerate the process. Research led by Stanley Hazen, an endocrinologist and head of preventive cardiology and cardiac rehabilitation at the Cleveland Clinic in Ohio, tells us TMAO appears to increase the ability of inflammatory cells within the atherosclerotic plaque in the artery walls to bind to bad LDL cholesterol. This can make the cells more prone to gobble up cholesterol.

The findings provide researchers important insight on how cholesterol causes heart disease.

TMAO does more than worsen atherosclerosis, contributing to strokes and heart attacks. It also contributes to heart and kidney failure, note researchers at the Cleveland Clinic. If you look at diabetics after a heart attack, a really high-risk group, nearly all who started out with the most TMAO in their bloodstream went on to develop heart failure within 2,000 days, or about five years. In comparison, only about 20 percent of those starting out with medium TMAO levels in the blood went into heart failure and none at all in the low TMAO group.

So, those with heart failure have higher levels of TMAO than controls, and those with worse heart failure have higher levels than those with lesser stage heart disease. If you follow people with heart failure over time, as researchers in Norway did, within six years, half of those who started out with the highest TMAO levels were dead. This finding has since been replicated in two other independent populations of heart failure patients.

NANXI WEI/UNSPLASH

The question is, why? It's probably unlikely to just be additional atherosclerosis, since that takes years. For most who die of heart failure, their heart muscle just conks out or there's a fatal heart rhythm. Maybe TMAO has toxic effects beyond just the accelerated buildup of cholesterol.

> **The worse our kidney function gets, the higher our TMAO levels rise, and those elevated levels correlate with the amount of plaque clogging up their arteries in their heart.**

What about kidney failure? People with chronic kidney disease are at a particularly "increased risk for the development of cardiovascular disease," notes Wilson Tang (Cleveland Clinic) in the Journal of the American Society of Nephrology.

The cause is thought to be because of a diverse array of uremic toxins. These are toxins that would normally be filtered out by the kidneys into the urine but may build up in the bloodstream as kidney function declines. When we think of uremic toxins, we usually think of the toxic byproducts of protein putrefying in our gut, which is why specially formulated plant-based diets have been used for decades to treat chronic kidney failure. Indeed, those who eat vegetarian diets form less than half of these uremic toxins.

Those aren't the only uremic toxins, though. TMAO, which, as we've discussed, comes from the breakdown of choline and carnitine found mostly in meat and eggs, may be increasing heart disease risk in kidney patients as well.

How TMAO seems to down-regulate reverse cholesterol transport, meaning it subverts our own body's attempts to pull cholesterol out of our arteries, according to research done in France and Federal Fluminense University in Brazil.

And, indeed, the worse our kidney function gets, the higher our TMAO levels rise, and those elevated levels correlate with the amount of plaque clogging up their arteries in their heart. But once the kidney is working again with a transplant, your TMAO levels can drop right back down. So, TMAO was thought to be a kind of biomarker for declining kidney function—until a paper was published from the Framingham Heart Study, which found that "elevated choline and TMAO levels among individuals with normal renal [kidney] function predicted increased risk for incident development of CKD [chronic kidney disease]." This suggests that TMAO is both a biomarker and itself a kidney toxin.

Indeed, when you follow kidney patients over time and assess their freedom from death, as the Cleveland Clinic did, you discover those with higher TMAO, even controlling for kidney function, lived significantly shorter lives.

This indicates this is a diet-induced mechanism for progressive kidney scarring and dysfunction, "strongly implying the need to focus preventive efforts on dietary modulation," wrote the researchers in an article published in Circulation Research. What might that look like? For people concerned about this issue, it would mean eating fewer foods that are dietary sources of TMAO generation, such as some species of deep-sea fish, eggs, and meat.

It also depends on what kind of gut bacteria you have. You can feed a vegan a steak, and they still don't really make any TMAO because they haven't been fostering the carnitine-eating bacteria. Researchers are hoping, though, that one day, they'll find a way to replicate "the effects of the vegetarian diet ... by selective prebiotic, probiotic, or pharmacologic therapies."

Michael Greger, M.D., FACLM, is a physician, New York Times bestselling author, and internationally recognized professional speaker on a number of important public health issues. He has lectured at the Conference on World Affairs, the National Institutes of Health, and the International Bird Flu Summit, testified before Congress, appeared on "The Dr. Oz Show" and "The Colbert Report," and was invited as an expert witness in defense of Oprah Winfrey at the infamous "meat defamation" trial. This article was originally published on NutritionFacts.org

Sunscreen Chemical May Play a Part in Breast Cancer

Benzophenone-3 is a common incredient in sunscreens, but there are safer alternatives

MICHIGAN STATE UNIVERSITY

The common sunscreen ingredient benzophenone-3, also known as oxybenzone or BP-3, can play a role in the development of mammary gland tumors, according to new research in mice.

"Our set of results suggest caution in using BP-3 and the need to dig deeper to understand what it can do in mammary glands and tumorigenesis," says Richard Schwartz, professor in the microbiology and molecular genetics department at Michigan State University, who has been researching the interaction of diet and cancer cell growth and proliferation for more than 12 years.

"This is the first published result that makes a convincing case that BP-3 can change cancer outcomes."

The effects of BP-3 varied depending on when the mice were fed a certain type of diet.

The study appears in Oncotarget.

Schwartz and coauthor Sandra Haslam, professor emeritus in the physiology department, previously conducted successful experiments in mouse models that elucidated a relationship between diets high in saturated animal fats with higher incidence and shorter latency of breast cancer.

"We were excited about the results of our diet experiments, but the [the National Institute for Environmental Health Sciences (NIEHS)] was interested in funding a chemical study, so we decided to combine the two," Schwartz says.

The researchers landed on BP-3, a ubiquitous and easily absorbed chemical. A recent report in the Journal of the American Medical Association found that after just one heavy application of sunscreen, blood levels of BP-3 exceeded the Federal Drug Administration's guidance for chemicals at a threshold of toxicological concern, and the Centers for Disease Control found BP-3 in 98 percent of adult urine samples.

BP-3 is also a suspected endocrine disrupting chemical (EDC). These substances interfere with hormonally regulated processes the body uses for a wide range of functions, including mammary gland development.

Using a mouse model in which the mammary glands lacked a gene often mutated in human breast cancer as a proxy for women growing from puberty into adulthood, the researchers put the mice under three distinct dietary regimes: a lifelong low-fat diet, a high-fat diet during puberty switching to a low-fat diet during reproductive years, and vice versa.

The experiment split mice on these three diets into two groups. One of these groups was fed BP-3 daily at a dose equivalent to a heavy application of sunscreen on a beach day.

Over the course of a year and a half of treatment, the researchers collected tumors from the mice and found robust evidence for the adverse effects of diet and BP-3 on breast cancer development.

"You never know what you're going to find in experiments like these," Schwartz says. "I was prepared to see no difference at all from BP-3 in any of our diets, but we found that even a relatively brief exposure to a high-fat diet during puberty is enough to allow BP-3 to cause a change in the outcome for cancer."

Nearly all mice developed two kinds of aggressive breast cancer tumors. The first, known as epithelial tumors, retain many of the properties of normal mammary gland cells. The second, known as spindle cell tumors, lose most of the properties of normal cells and develop into a deadly, often triple negative form of breast cancer known as claudin-low breast cancer.

The effects of BP-3 varied depending on when the mice were fed a certain type of diet. For example, mice given a lifelong low-fat diet surprisingly acquired some protection against epithelial tumors from the chemical BP-3 but had spindle cell tumors with more aggressive properties. A high-fat diet during puberty, on the other hand, completely blocked any protective effect of BP-3 and caused epithelial tumors to grow more aggressively. The last treatment, a high-fat diet during adulthood, promoted aggressive epithelial tumors.

Interestingly, the researchers also found that before tumors appeared, BP-3 increased the growth of normal breast cells on all diets, a known correlate of more aggressive cancers.

"BP-3 will likely not have the same impact on groups of women with dietary differences, and that's an important question to ask when designing experiments that study the effects of EDC's and cancer," Schwartz explains. "In balance, these results suggest that there are enough bad effects from BP-3 overall that we believe it calls for the precautionary principle.

"When there are alternatives, stay away from BP-3," recommends Schwartz, who notes that zinc oxide and titanium dioxide creams are good candidates.

The Breast Cancer and the Environment Research Program housed in the National Institute for Environmental Health Sciences (NIEHS) and the National Cancer Institute (NCI) funded the research.

The grant supporting Schwartz's bench research also encompassed areas of epidemiology and outreach. Epidemiologists at the University of Cincinnati are studying a cohort of young women at varying ages and levels of BP-3 to track any reproduction abnormalities. A breast cancer advocacy group, the Huntington Breast Cancer Action Coalition, is generating messages for women in New York with help from the grant, and Schwartz collaborated with health science communication researchers at Michigan State University.

NOK LEK/SHUTTERSTOCK

A common ingredient in sunscreen may cause the disease many people use sunscreen to avoid—cancer.

JESSICA2/SHUTTERSTOCK

When available, zinc oxide and titanium dioxide creams are better alternatives to sunscreens with BP-3.

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