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MIND & BODY

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Synthetic Fragrances and How They Wreak Hormone Havoc

Synthetic fragrances are used in many common products from household cleaners to candles and they disrupt our endocrine system.

While other countries regulate these chemicals more stringently, Americans suffer in a scented chemical bath

By Vance Voetberg

Of the five senses, the sense of smell is believed to have the most transformative power to take us back into a moment in time. Grandma's apple pie. A summertime bonfire. An ex's cologne.

But scents don't merely induce a nostalgic memory; they're not just psychologically powerful. The scents we smell also have consequential physiological effects.

Fragrances have been used for thousands of years by many different cultures. For example, in traditional Chinese medicine, aromatic herbs such as Murraya and Elsholtzia have been used for millennia in treating various maladies.

There are also more than 200 references to perfumes and fragrances in the Bible; Jesus being gifted frankincense is perhaps the most familiar.

However, in the 20th century, the evolution of scents took a dramatic turn because of the advancement of various chemicals. Instead of using botanicals to create sweet aromas, the perfume industry switched to synthetic, lab-made forms of fragrances.

Unfortunately, this advancement has ushered in unforeseen health consequences that are affecting not just us but also our future offspring.

How Fragrances Harm Hormones

According to a study published in Medical Hypotheses, many fragrance ingredients have been shown to disrupt healthy hormone balance. These compounds are called endocrine-disrupting chemicals (EDCs) because they mimic natural hormones and therefore dysregulate the body's delicate endocrine system.

"This is a problem because our bodies cannot distinguish between naturally occurring and synthetic hormones," explained Janet Nudelman, senior director of Campaign for Safe Cosmetics for Breast Cancer Prevention Partners.

When we light a candle, apply makeup, spray perfume, or use a laundry detergent that contains fragrances, EDCs are released, thus facilitating hormonal disequilibrium.

"Depending on the timing of exposure, EDCs can contribute to early puberty, can cause reproductive or developmental harm, and can also increase breast cancer risk," Nudelman told The Epoch Times.

Multiple studies have shown that EDCs such as phthalates, a common

Continued on ***Page 5***

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The Most Dangerous Fat on Your Body

Belly fat is linked to cancer, diabetes, and more, but research has revealed clear ways to shed it

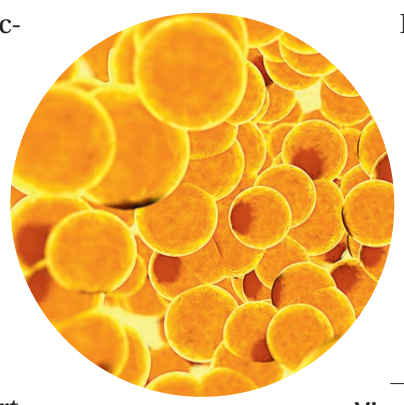
By Jingduan Yang & Mercura Wang

Visceral fat, also known as abdominal fat, is the fat that surrounds internal organs in the abdomen. While it's normal and necessary for the body to store some fat for energy and insulation, excess visceral fat can harm health.

One of the reasons for this is that visceral fat can cause inflammation in the body. Chronic inflammation has been linked to various health problems, including cardiovascular disease, Type 2 diabetes, and certain cancers.

Visceral fat is metabolically active, producing hormones and other signaling molecules that can affect the body's inflammatory response.

For example, when there's an excess of visceral fat, it can lead to an overproduction of cytokines, which can trigger inflammation. This can result in chronic low-grade inflammation, where the body is in a constant state of alertness, even in the absence of a threat.



Visceral fat can trigger inflammation and insulin resistance.

In addition, visceral fat can lead to insulin resistance, a condition where the body's cells become less responsive to insulin. Insulin resistance can lead to increased inflammation by causing the release of more cytokines and other inflammatory molecules.

A review published in The Journal of Clinical Investigation states that inflammatory molecules can disrupt the normal function of fat cells, leading to increased fat storage. In addition, inflammation can also promote the accumulation of visceral fat.

The most insidious thing about visceral fat is that you can have a lot of it, but it's not apparent. As a result, some people may appear thin on the outside but have excess fat inside—in other words, thin outside, fat inside—and would suffer

Continued on ***Page 3***

OATMEALSTORIES/GETTY IMAGES

The microbes that live inside you appreciate the same healthy foods that prevent disease.

MICROBIOME **CULTIVATING OUR GUT MICROBIOME TO STIFLE DISEASE** Part VI

Microbiome Determines Whether Your Body Can Fight Top Diseases

Miracles abound in the microscopic community that quietly puts out fires of inflammation

In In this series, we'll share how the latest developments on this medical frontier are transforming our approaches to illness and offering new strategies to heal and prevent disease.

Previously: *Short-chain fatty acids are created by microbes in our gut and play several essential roles in the body.*

By Amy Denney

Mind-blowing studies are revealing miraculous qualities of our gut microbes, including their ability to mediate prolific killers such as cancer and heart disease.

This collection of bacteria, viruses, and fungi that make up about 70 percent of our immune system has become a huge topic for researchers and authors. Hope is the latest theme in many books. It comes as research reveals gut damage from antibiotics, glyphosate, sugar, and stress can be reversed and our gut microbiome can recover. A wave of revelations over the past two decades has fed a new enthusiasm: If you nurture the bugs in your gut, they can do the work of preventing and even fighting diseases for you.

The hype that gut microbial health is human health is here to stay, according to Dr. William Li, a world-renowned physician and author. His latest book, "Eat to Beat Your Diet" focuses on metabolism, the major role of our gut microbes.

"You can see that the health of our gut bacteria has profound importance for our overall health," Li told The Epoch Times. "These bacteria live in harmony with one another in which most of these bacteria are there for profound functions."

One specific bacteria Li likes to highlight is Akkermansia muciniphila (A. muciniphila), which plays a role in metabolism, body weight, immune defenses, and mental well-being. It's often found in the guts of lean people and absent in those who are obese.

Miracle Cancer Bug?

Akkermansia was identified in 2015 research as a key healthy gut bacteria that predicts a better response to cancer immunotherapy, a type of treatment that leverages patients' own immune systems in fighting the disease.

The study, published in Science, sought to determine why only about 20 percent of patients had tremendous success with immune checkpoint inhibitors, a type of drug that signals the immune system at a cellular level. While less harsh than chemotherapy, it still has common side effects of rash, diarrhea, and fatigue. Stool samples from patients with lung and kidney cancers showed those not responding to immunotherapy had low levels of A. muciniphila. That ignited research into the microbiome's role in cancer.

"With a good activated immune system, you're able to take stage 3 or stage 4 cancer and reverse it to zero," Li said. "Some of the most eye-opening research in the last five years has been in the studies of cancer patients, certain bacteria present in the gut of those responding to this powerful treatment.

"That makes gut health a matter of life and death."

Another remarkable example that Li shared was a 2021 study in Science on advanced melanoma patients getting immunotherapy who experienced a 30 percent decrease in mortality rate for every six grams of dietary fiber they added to their diet.

"That's profound," he said. "What we're finding is marvelous, incredibly mind-blowing, game-changing ... but we still know so little."

For instance, that same study found no change in the microbiota makeup of those patients increasing fiber, and it also found no benefit to adding probiotics alone. Findings don't always match expectations.

Bugs Protecting Your Heart

Though the mechanisms are a bit complex, there is loads of evidence that metabolism in the microbiome leads to the regulation of blood pressure, cholesterol, vascular inflammation, atherosclerosis, and calcium buildup in the arteries.

"New therapeutic approaches that target gut microbes for the treatment and prevention of CVDs [cardiovascular diseases] represent exciting areas of investigation," notes a 2020 research review in Circulation Research that links six pathways from the gut to heart disease. "Although our knowledge about how microbiota impact CVD is still rudimentary, the rate at which new discoveries are emerging is impressive."

> Gut diseases such as IBD are illnesses of Western civilization—not a function of genetics but a function of a lifestyle marked by chemical exposures and disruptions to the gut barrier.

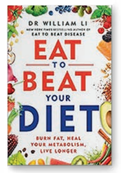
That same bug that plays a big role in immunotherapy, A. muciniphila, also seems to be key in reducing risks associated with heart disease, according to the research. It appears to reduce aortic atherosclerosis, a cardiovascular disease risk factor, and is being investigated as a therapeutic in human studies. In one trial against a placebo, it was found to reduce plasma lipopolysaccharide in people who were obese and had metabolic syndrome.

Lipopolysaccharides (LPS) are large molecules made of fat and polycarbohydrates that are found on half or more of the intestinal bacteria, encasing and protecting them from being digested by bile salts. But when LPS escapes the colon and crosses into the bloodstream, it becomes an endotoxin–bringing with it a storm of inflammation. LPS is a biomarker for infection in the body, and it's used in animal studies to create an inflammatory response.

LPS is associated with heart disease and Alzheimer's disease. There's evidence published in the 2008 Journal of Neuroimmunology that blood plasma in Alzheimer's patients has three times the LPS as healthy controls.

The vastness and individuality of the microbiome complicate the research. For instance, a rodent study printed in 2017 Circulation found a high-fiber diet or a microbial product could reduce blood pressure and improve heart health. However, the article referencing it pointed out most animal findings haven't been replicated.

Of course, the microbiome is just one facet of the human immune system that plays a role in these diseases. Another part of the immune system is immune cells, and vitamin D receptors are found on almost every cell of the immune system. Before the past several years, however, there was no link found between vitamin D and the microbiome.



"Eat to Beat Your Diet" by Dr. William Li. Balance, 2023.

The Vitamin D Connection

The microbiome is largely manipulated through diet, but food is a poor source of vitamin D, which really acts more like a hormone than a vitamin in the body. There is no vitamin D receptor in the gut; however, new research is pointing to vitamin D's role in microbiome health.

Vitamin D is naturally produced when the skin (minus sunscreen) is exposed to sunlight, especially around midday. Amid our modern indoor lifestyle, it's more reliably increased with supplementation. It's well-known that vitamin D decreases inflammation. Another key anti-inflammatory mechanism comes from short-chain fatty acids (SCFA), the metabolites that are made when microbes feast on fiber in the colon. SCFAs put out inflammatory fires all over the body.

Leigh A. Frame, associate director of the George Washington University Resiliency & Well-being Center, told doctors at the Malibu Microbiome Meeting that SCFAs enhance the ability of vitamin D to promote antimicrobial peptides, which are secreted by immune and epithelial cells for intestinal barrier defense. These powerful peptides bind LPS and modulate the expression of cytokines, playing an anti-inflammatory role in disease, infection, and cancer.

"One thing we do know is short-chain fatty acids enhance vitamin D to build the gut barrier," Frame, a nutrition and microbiome expert, said.

A 2020 article in a Japanese medical journal concluded that vitamin D controls antimicrobial peptide expression, as well as modulating intestinal microbiome function, and having a protective effect on the epithelial barriers in the gut mucosa.

Another study in a 2021 special International Journal of Molecular Sciences reported that vitamin D supplementation was responsible for reducing inflammation in people with inflammatory bowel disease (IBD), as well as improving the makeup of the microbiota.

Gut Diseases and Disruptions

Gut diseases such as IBD are illnesses of Western civilization—not a function of genetics but a function of a lifestyle marked by chemical exposures and disruptions to the gut barrier, according to Dr. Ari Grinspan, associate professor of medicine and director of the fecal microbiota transplant program at Mount Sinai Hospital.

He told The Epoch Times that there's promise on the horizon that changing the makeup of the microbiota can have a significant impact on serious diseases.

"There's so much potential. We have to be cautiously optimistic. A lot of these things are not going to pan out," he said. "But maybe there will be a subset of these patients that we can help by using alterations in the microbiome. That's why I'm very excited about where this leads us in the future."

Profile of a Top Bug

Akkermansia muciniphila bacteria make up 1 percent to 5 percent of total species in the gut microbiome. It triggers an increase of goblet cells in the gut lining, which create mucus and strengthen the intestinal barrier. Low levels of this bacteria are associated with increased intestinal permeability.

Akkermansia also produces acetate and propionate, two anti-inflammatory short-chain fatty acids. Low levels are linked to obesity, fatty liver disease, and cardiometabolic disorders. In most autoimmune diseases, Akkermansia levels are low, but there are a few exceptions, including psoriasis and Type 1 diabetes. In other diseases, including Crohn's disease, eczema, rheumatoid arthritis, and multiple sclerosis, there are conflicting studies and information.

Those studies are outlined in Dr. Akil Palanisamy's book, The T.I.G.E.R. Protocol: An Integrative 5-Step Program to Treat and Heal Your Autoimmunity, which highlights five keystone gut bacteria. Palanisamy also wrote about a three-month trial with oral Akkermansia that found it improved insulin sensitivity and decreased body weight, fat mass, liver inflammation, and hip circumference in overweight adults. He added that foods rich in red polyphenols, such as berries and red cabbage, can help raise levels. So can intermittent fasting.

Information adapted from "The T.I.G.E.R. Protocol" by Akil Palanisamy, MD. Copyright 2023 by Akil Palanisamy, MD. With permission from Balance, an imprint of Grand Central Publishing. All rights reserved.

Next Week: Knowing the top causes of microbiome-related diseases is the best way to avoid them.

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The Most Dangerous Fat on Your Body

Visceral fat, or abdominal fat, is a key marker of obesity and a growing concern because of its link to many diseases.

Continued from Page 1

from the same health problems as overweight people.

This accumulation of visceral fat can increase the risk of developing certain diseases.

Excess Visceral Fat Increases Risk of Cardiovascular Disease

Excess visceral fat has been linked to an increased risk of cardiovascular disease (CVD). This is because chronic low-grade inflammation can damage the blood vessels and lead to the development of atherosclerosis. In this condition, plaque builds up in the arteries, reducing blood flow and increasing the risk of heart attack and stroke.

Visceral fat can also affect other risk factors for CVD, such as causing insulin resistance.

A study published in the Journal of the American College of Cardiology followed almost 1,000 participants for a median of 9.1 years and found that visceral fat was a better predictor of CVD risk than overall body fat or body mass index (BMI).

Another study, in Frontiers in Neurology, found that while visceral fat forms the fundamental basis of central obesity, visceral adipose tissue had a significant causal association with ischemic stroke, as the odds ratio per 1 kilogram increase in visceral fat mass was 1.30. In addition, visceral fat was also found to be a significant causal effect for cardioembolic stroke.

Excess Visceral Fat May Lead to Type 2 Diabetes

Since visceral fat can lead to insulin resistance, it's also a key factor in developing Type 2 diabetes.

A study published in the journal Nutrients analyzed the data of almost 6,000 adults and found that visceral fat was a stronger predictor of diabetes risk than BMI or waist circumference.

According to a systematic review of 10 longitudinal studies published in the International Journal of Clinical Practice, abdominal obesity, also known as visceral obesity, significantly raises the risk of Type 2 diabetes. Overall, people with abdominal obesity have a 114 percent higher risk of developing Type 2 diabetes than those who aren't viscerally obese.

Excess Visceral Fat May Cause Cancer

Chronic inflammation has also been linked to an increased risk of certain colon, breast, and prostate cancers. While the exact mechanism isn't fully understood, it's thought that chronic inflammation can damage DNA and increase the risk of mutations that can lead to cancer.

Inflammatory molecules produced by visceral fat can damage cells and lead to mutations that can lead to cancer. Therefore, chronic inflammation has been associated with cancer development.

According to a review published in Nature Communications, visceral obesity is a significant risk factor for many types of cancer, including pancreatic, colorectal, breast, kidney, and prostate. In addition to chronic inflammation, an excessive amount of visceral fat can lead to metabolic dysfunction, which in turn can affect cancer progression.

A study published in the journal Translational Cancer Research examined 234 South Korean breast cancer patients and 211 women without breast cancer and discovered that visceral obesity increased breast cancer risk in postmenopausal women by 150 percent.

After examining more than 120 participants, a study published in the journal Obesity Research discovered that participants with higher visceral fat had a 360 percent higher risk of developing prostate cancer than participants with relatively low abdominal fat.

Excess visceral fat can contribute to chronic low-grade inflammation, increasing the risk of various health problems, including cardiovascular disease, Type 2 diabetes, and certain cancers.

The most effective ways to reduce visceral fat are diet, exercise, and lifestyle changes.

> Inflammatory molecules produced by visceral fat can damage cells and lead to mutations that can lead to cancer.

A Healthy Diet Can Significantly Reduce Visceral Fat

A diet rich in whole foods, such as fruits, vegetables, and lean protein, and low in processed foods, sugar, and saturated fat, can help reduce visceral fat.

A study published in the International Journal of Obesity found that a diet rich in whole grains, fruits, and vegetables was associated with lower visceral fat levels. In contrast, eating fried foods, alcohol, red meat, sugary beverages, and refined grains was linked to higher levels of visceral fat and/or waist circumference.

A comprehensive two-year longitudinal study involving more than 624 healthy participants published in the journal Nutrients discovered that eating seven nutrients—soluble dietary fiber, manganese, potassium, magnesium, vitamin K, folic acid, and pantothenic acid—can significantly decrease visceral fat, independent of BMI and waist circumference. Therefore, a plant-based diet may reduce visceral fat.

A study published in the journal Current Obesity Reports found that a Mediterranean diet can significantly reduce visceral fat. The Mediterranean diet is characterized by a considerable consumption of fruits, vegetables, whole grains, nuts and seeds, cereals, and extra virgin olive oil, as well as some consumption of dairy products, fish, and poultry.

A study published in the international journal Diabetes Research and Clinical Practice also found that a low-calorie and low-carbohydrate diet may be effective in reducing visceral fat. In the study, 22 obese subjects with Type 2 diabetes were randomly assigned to two groups: one with a low-calorie and low-carbohydrate diet, and another with a low-calorie and high-carbohydrate diet. After four weeks, compared to the high-carbohydrate diet group, the low-carbohydrate diet group achieved a more significant decrease in visceral fat and in the ratio of visceral fat area to subcutaneous fat area. Specifically, the low-carbohydrate group reduced 40 centimeters squared of visceral fat, whereas the high-carbohydrate group only lost 10 centimeters squared.

These studies suggest that diet plays a significant role in visceral fat accumulation and that consuming a healthy, whole-foods-based diet, high in protein and low in carbohydrates, can help reduce visceral fat levels.

Exercise Can Effectively Reduce Visceral Fat

Exercise, including aerobic exercise and strength training, is also an effective way to reduce visceral fat.

A systematic review and meta-analysis published in the journal PLoS One analyzed 15 articles with 852 subjects using CT scans or MRIs to assess the participants' visceral fat. Researchers discovered that moderate to vigorous aerobic exercise training has the highest potential to reduce visceral fat in overweight adults, even without being on a low-calorie diet. Specifically, after 12 weeks, aerobic exercise can reduce more than 30 centimeters squared of fat in overweight female adults and more than 40 centimeters squared in males.

Another systematic review, published in the journal Advances in Nutrition, analyzed 43 trials with a total of 3,552 subjects and found that aerobic exercise and resistance training can effectively reduce abdominal fat. Moreover, combining aerobic exercise and resistance training can be more effective than either of them alone.

A study published in the Journal of Diabetes Research found that high-intensity interval training (HIIT) was more effective at reducing visceral fat levels than moderate-intensity continuous training (MICT). The study followed 43 overweight and obese subjects for 12 weeks and found that those who participated in HIIT reduced visceral fat significantly more than those who participated in MICT.

These studies suggest that exercise, particularly aerobic exercise and HIIT, effectively reduces visceral fat levels.

Lifestyle Matters

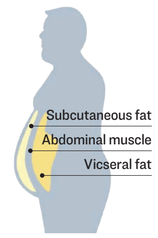
In addition to diet and exercise, other lifestyle factors can contribute to reducing visceral fat and inflammation.

A randomized, controlled crossover study published in the Journal of the American College of Cardiology found that participants' lack of sufficient sleep (four hours per night) might cause an 11 percent increase in abdominal visceral fat, in comparison with participants who got an average amount of sleep (they were allowed to sleep up to nine hours per night).

A study involving almost 1,000 male participants published in the Annals of Nutrition and Metabolism found that alcohol consumption was associated with higher visceral fat levels. The study also discovered that alcohol consumption of 14 or more standard drinks per week might increase metabolic syndrome risk.

Another study, published in the journal Diabetes Care, examined almost 3,000 participants and found that a healthy lifestyle, including regular physical activity, a healthy diet, and not smoking, was associated with lower levels of visceral fat.

In conclusion, reducing visceral fat through diet and exercise can help to reduce inflammation and improve health outcomes. By making healthy lifestyle choices, we can reduce our risk of chronic disease and improve our overall health and well-being.



Body Fat Explained

Having some fat on our bodies is essential, but to avoid any health issues, it's important to have the right amounts of the right kinds of fat.

Subcutaneous fat is under the skin. It stores energy and accounts for about 90 percent of body fat.

Visceral fat surrounds internal organs in the abdomen and provides energy and insulation. Excess visceral fat can harm health.

Studies have found that people with visceral fat have a much higher chance of developing Type 2 diabetes.

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TOXINS **AMERICA THE FLUORIDATED** Part VI

Fluoride's Hidden Presence

It's difficult to determine our total exposure to fluoride as we ingest it in many different ways

In this series, *we explore the contentious findings surrounding fluoridation of the U.S. public water supply and answer the question of whether water fluoridation poses a risk and what we should do about it.*

Previously: *Recent multi-year NIH-funded studies found fluoride exposure was linked to reduced IQ and ADHD in children, bringing up more concern around individual exposure and dosage.*

By Christy Prais

WESTEND61/GETTY IMAGES

Tea is known to accumulate fluoride from the soil, which can be compounded by brewing tea in fluoridate water, since fluoride does not evaporate from boiling.

Our exposure to fluoride doesn't just come from fluoridated water. This makes it difficult to determine how much fluoride people are actually consuming. Then there is the added challenge of figuring out how much is actually safe, given how differently people respond to this chemical.

Fluorine is a diatomic gas and the most reactive and electronegative of all the elements. Fluoride is any combination of elements containing the fluorine atom in the -1 oxidation state, per the National Library of Medicine compound summary.

Fluorides can be inhaled, ingested, or absorbed through our skin. That means there are several factors that determine what your daily dose of fluoride is and what amount may be accumulating in your body.

According to the National Research Council's (NRC) 2006 scientific review of fluoride in drinking water, we ingest fluoride in our food, water, beverages, fluoride-containing dental products, pharmaceuticals, and pesticide residue. There are also various fluorides in the air and soil from natural sources such as volcanic eruptions and weathering of crustal rock as well as from toxic man-made industrial chemical emissions and cigarette smoke.

After the 2006 NRC committee's extensive review, they noted gaps in the information around fluoride that prevented them from making judgments about the safety or the risks of maximum fluoride at levels permitted in drinking water.

The current maximum containment level goal (MCLG) is 4 milligrams per liter (mg/L). If average levels exceed 2 mg/L, the public is supposed to be notified.

The Commissioned Corps of the U.S. Public Health Service currently recommends a concentration water fluoridation level of 0.7mg/L.

Authorities are aware of the need to figure out how much fluoride people are actually exposed to given that the NRC committee highlighted the lack of exposure assessments in their 2006 review. It also highlighted the fact that some people are more vulnerable to fluoride overdoses than others.

Dose and Upper Limits

The fluoride dose depends on how much you get from all sources such as water, tea, food, dental products, air, and pesticide residue. A dosage depends on body weight, so one set dose is far more significant for a child than adult.

And unlike drugs, our daily doses of fluoride come from multiple sources and isn't easily quantifiable, even with all the oversight of community water fluoride programs by government agencies. The more thirsty you are, the higher the dose you get and certain habits can also lead to higher doses.

In 1997, the U.S. Food and Nutrition Board (FNB) of the Institute of Medicine (IOM) established a tolerable upper intake level (UL) for fluoride.

A UL is the maximum intake amount that is unlikely to pose any potential harm to the health of almost all individuals in the general population.

Below are the current ULs for fluoride for the prevention of moderate dental fluorosis and skeletal fluorosis:

- Zero–6 months: 0.7 mg/day
- 7–12 months 0.9 mg/day
- 1–3 years: 1.3 mg/day
- 4–8 years: 2.2 mg/day
- 9 and over: 10 mg/day

The EPA's 2010 "Fluoride: Dose-Response Analysis For Non-Cancer Effects" clarifies that for fluoride, the UL is based solely on the prevention of moderate dental fluorosis for children up to 8 years old, and for all other age groups, the UL is based on the prevention of skeletal fluorosis. Other diseases, including the neurodevelopmental risks mentioned in the previous article in this series aren't factored in.

The Epoch Times reached out to the Environmental Protection Agency (EPA) with questions on studies that conclude fluoride can affect IQ in children and asked for additional information on tolerable upper fluoride intake levels for neurotoxic effects.

The EPA responded that they are "currently reviewing the National Primary Drinking Water Regulation (NPDWR) for fluoride under the fourth Six Year Review."

"As a part of this review, EPA will be considering the best available information, science, and data prior to deciding whether or not to update the fluoride NPWDR. EPA will be reviewing the draft report released by the National Toxicology Program (NTP) and looks forward to considering the final report when it is available," a spokesperson for the EPA stated.

The NTP report was performed by an external review board and has been a source of controversy in an ongoing lawsuit against the EPA as internal CDC emails obtained through the Freedom of Information Act showed government agencies interfered with its release.

The report draft was finally made public on March 15 under an agreement reached in the ongoing lawsuit.

DOGUKANKIRIMTAYYIF/SHUTTERSTOCK

Many industrial processes release fluoride into the air, including aluminum production, steel mills, and most notably, coal-fired electric utilities.

> Airborne fluoride emissions end up in the soil and surface water in addition to the naturally occurring fluorides and the chemical fluorides added to the public water supply.

Exposure and Susceptible Subpopulations

When it comes to fluoride exposure and its consequences, one of the government-accepted reviews comes from scientists from the Agency for Toxic Substances and Disease Registry (ATSDR).

In 2003, the ATSDR prepared the "Toxicological Profile For Fluorides, Hydrogen Fluoride, and Fluorine" report in accordance with the EPA and had it peer-reviewed by CDC staff and other federal scientists.

The ASTDR report identified subpopulations susceptible to fluoride exposure as those who "exhibit a different or enhanced response to fluorides, hydrogen fluoride, and fluorine than will most persons exposed to the same level of fluorides, hydrogen fluoride, and fluorine in the environment."

These subpopulations include those with kidney problems; deficiencies of calcium, magnesium, vitamin C, or protein; the elderly, and those with osteoporosis.

The NRC report states that there are also subgroups of people that may consume greater amounts of water, which results in higher exposure to fluoride such as pregnant or lactating women, infants, those with high activity levels (military personnel, athletes, manual laborers), people with health conditions that affect water intake such as diabetes mellitus or diabetes insipidus, and people living in very hot or dry climates.

The report highlights that some adults in the U.S. population could have community water intakes as high as 80 mL/kg per day and some infants could exceed 200 mL/kg per day.

The researchers stress that intake assessments weren't made for susceptible subpopulations, those who consume significantly more fluoridated water, or children who could have fluoride intakes from dental products that exceed the dietary intakes.

Additionally, they also express concerns about all the other fluoride the population is taking in from multiple sources beyond drinking water and the need to fully understand total fluoride exposure from all sources combined.

Fluoride in the Environment

According to the Toxic Release Inventory (TRI), in 2021, the total releases of hydrogen fluoride to the environment (including air, water, and soil) from 638 reporting facilities was 388.8 million pounds. However, the ASTDR report cautions that the TRI data isn't an exhaustive list and only certain types of facilities are required to report.

The 2003 ATSDR report list sources of man-made airborne fluoride as aluminum production plants, phosphate fertilizer plants, nuclear industries, steel mills, coal combustion plants, chemical production facilities, magnesium plants, manufacturers of brick and structural clay, and electrical utilities.

They note that electric utilities are the greatest contributor at 78 percent of total environmental fluoride released.

Airborne fluoride emissions end up in the soil and surface water in addition to the naturally occurring fluorides and the chemical fluorides added to the public water supply. (As discussed in a previous article in this series, those fluoride additives are also derived from industry emissions.)

The 2006 NRC report cautions that in addition to being taken up by and accumulated in food sources, "fluoride in soil could be a source of inadvertent ingestion exposure, primarily for children."

The ATSDR report notes that concentrations of fluoride in the air, water, and soil can range from low to very high depending on mineral deposits, airborne deposits released from industrial operations, the use of phosphate fertilizers, or areas close to hazardous waste sites.

Food and Beverages

According to the 2006 NRC report, foods and other consumed beverages that are most notable for their high fluoride content are teas, processed chicken, infant formula, grapes and grape products, commercial beverages such as juice and soft drinks, beer, soups, canned fish, cooked wheat cereal, and some kinds of seafood.

Both the NRC and the ASTDR reports note that fluoride levels in foods and beverages greatly depend on the fluoride content of the water used in their preparation and manufacturing as well as the fluoride concentration in the soil they are grown in.

Per the NRC, the high fluoride content in grape products is due to the use of pesticides, particularly cryolite, while mechanical deboning of chicken that leaves skin and residual bone particles in the meat contributes to its high fluoride content.

Seafood such as mussels and shrimp can accumulate fluoride if they are located in estuaries where aluminum plant waste is released. Tea is known to accumulate a substantial amount of fluoride from soil and fluoride dust in the air with 97 percent accumulating in the plant's leaves.

The NRC report cited research that found fluoride concentrations of 1.0–6.5 mg/L in both caffeinated and decaffeinated commercial teas obtained in St. Louis.

Another study it cited looked into fluoride concentrations in a variety of juices in the United States and found fluoride concentrations from 0.15 to 6.80 mg/L.

Bottled water can also contain more fluoride than declared on the label with concentrations found as high as 1.36 mg/L notes the report. Distilled and reverse osmosis water have very low concentrations of fluoride, however.

Pesticides and Pharmaceuticals

According to the NRC report, fluorine-containing pesticides and pharmaceuticals also contribute to total fluorine exposure.

Cryolite and sulfuryl fluoride are two pesticides mentioned in the report that are monitored and regulated due to their potential to contribute to inorganic fluoride residues in foods that are currently used on many fruit, vegetable, and feed crops.

Many pharmaceuticals also contain fluoride.

An April study published in the International Journal of Molecular Sciences states that "to date, more than 300 fluorinated pharmaceuticals have been approved for use as drugs."

The study reports that since the introduction of fluorocorticosteroid and fludrocortisone in 1954, 30 percent of fluorinated drugs on the market are "blockbuster pharmaceuticals," such as Lipitor, Fluoxetine, Linezolid, or Fluticasone.

A great resource that maintains a database of all fluorinated pharmaceuticals is the Fluoride Toxicity Research Collaborative.

Dental Products

Authors of the ATSDR report warn that swallowing toothpaste can account for a large percentage of fluoride exposure for children under 8 years old.

The Food and Drug Administration requires the warning label on toothpaste for this reason.

A study cited in the report, (Levy 1993, 1994), warns that "some children probably get more than the recommended amount of fluoride from toothpaste alone, apart from food and beverages."

Authors of the NRC report emphasize that numerous papers have suggested several recommendations to reduce the risk of excessive fluoride ingestion in children including, using very small amounts of toothpaste, rinsing and spitting after brushing, avoiding flavored toothpastes, discouraging the use of fluoride toothpaste in children under 2 years old, and supervision of young children during tooth brushing.

Next Week: The fluorosilicic acid added to the public water supply is contaminated with arsenic.

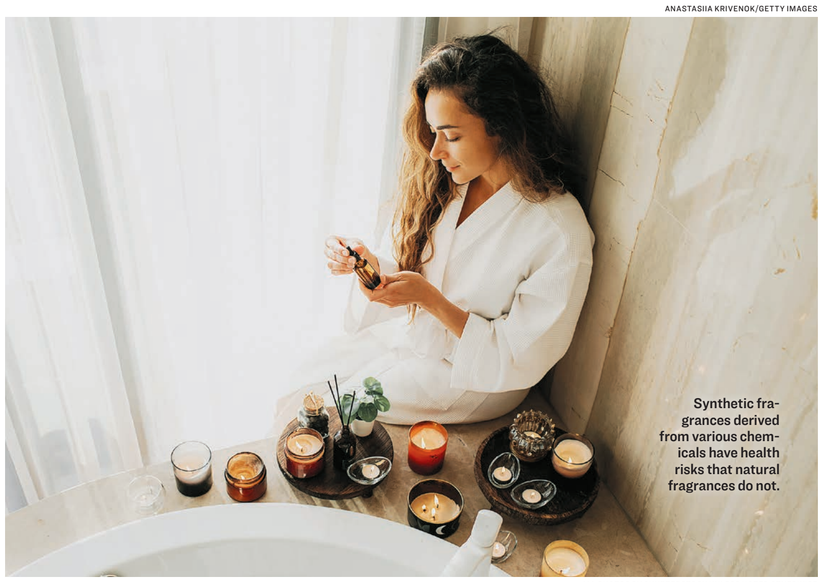
Christy A. Prais received her business degree from Florida International University. She is the founder and host of Discovering True Health, a YouTube channel and podcast dedicated to health and wellness. Prais also serves on the advisory board at the Fostering Care Healing School. She is a contributing journalist for The Epoch Times.

Fluoride Upper Intake Level

The upper intake levels of fluoride for the prevention of moderate dental and skeletal fluorosis are:

- **Zero–6 months: 0.7 mg/day**
- **7–12 months 0.9 mg/day**
- **1–3 years: 1.3 mg/day**
- **4–8 years: 2.2 mg/day**
- **9 and over: 10 mg/day**

ANASTASIIA KRIVENOK/GETTY IMAGES



Synthetic fragrances derived from various chemicals have health risks that natural fragrances do not.

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Synthetic Fragrances and How They Wreak Hormone Havoc

Continued from Page 1

ingredient of synthetic fragrances, impair fertility and are associated with an increased chance of breast cancer.

Affecting More Than Hormones

In one Danish study, researchers hypothesized that dibutyl phthalate within pharmaceutical drugs increased breast cancer risk in women. This type of phthalate is used in many cosmetic products.

In this study, scientists discovered that breast cancer risk increased two-fold for women on drugs containing this phthalate. The study reads, "Our results suggest that women should avoid high-level exposure to dibutyl phthalates."

Research published in Medical Hypotheses shows that EDCs such as phthalates and parabens penetrate the bloodstream through the skin, disrupting endocrine homeostasis and increasing the likelihood of breast cancer development.

> Multiple studies have shown that endocrine-disrupting chemicals (EDCs) such as phthalates, a common ingredient of synthetic fragrances, impair fertility and are associated with an increased chance of breast cancer.

A large body of data shows a robust correlation between EDCs and miscarriage, preterm birth, and, according to a review published in Frontiers in Public Health, developmental abnormalities.

In the review, researchers analyzed various phthalates' effects on babies in utero and found "substantial evidence that prenatal phthalate exposure results in abnormal fetal development and adverse perinatal outcome."

The same meta-analysis also shows that maternal phthalate exposure was associated with lower birth weights and, interestingly, higher rates of obesity in developing children—indicating that a mother's phthalate exposure affects not just fetal development but also the adolescent development of her offspring.

Another ingredient often used in various fragrances as a coloring agent is styrene, which the U.S. Department of Health and Human Services and National Toxicology Program list as a chemical that's "reasonably anticipated to be a human carcinogen."

Other fragrance ingredients include camphor, a neurotoxin; linalool, a chemical known for causing respiratory complications; and benzyl acetate, a compound that negatively affects the central nervous system.

The Questionable Regulation of Fragrance Ingredients

Although there's mounting evidence against these chemicals' safety, the governmental agencies that approve their use and sale haven't taken decisive action against the chemical industry.

In 2022, the U.S. Food and Drug Administration (FDA) limited certain phthalates used in food packaging. But the agency stopped short of banning all phthalates, stating that it needed more evidence from petitioners to enact a total ban on phthalates.

"The FDA and the EPA [Environmental Protection Agency] lag behind many countries with respect to regulations on consumer products," Homer Swei, senior vice president of the Environmental Working Group, told The Epoch Times. "The EU [European Union], Canada, and Japan all have stricter regulations."

Each year, chemical companies pour millions of dollars into lobbying, a practice critics say sustains inappropriate influence over regulatory agencies and elected lawmakers.

"The trade associations for the chemical industry and the conventional cosmetics industry would have us believe that the dose makes the poison and the public doesn't have to be worried about a little bit of a cancer-causing chemical in a bubble bath or baby shampoo," Nudelman said.

"But the reality is none of us live in a bubble, and we are exposed, and reexposed, to cancer-causing chemicals—and hormone-disrupting toxic chemicals—from the minute we wake up in the morning until we go to bed at night. And the science is showing that those cumulative exposures and low-dose exposures and the timing of those unsafe chemical exposures are adding up to harm."

Natural Versus Synthetic Fragrance

Natural fragrances are made with botanical ingredients found in nature, but synthetic fragrances are made of man-made chemicals.

However, this oversimplifies the full story of natural and synthetic fragrances.

Companies that include fragrances in their products aren't required to list the ingredients used to formulate the scent. Instead, consumers see "fragrance" or "natural fragrance," even though both contain dozens of components.

When we see "fragrance" on a label, this implies that many of the ingredients used are synthetically derived. "Natural fragrance" excludes harsh chemicals such as phthalates, but it still goes through the industrial manufacturing process.

"'Natural' is not a regulated fragrance term, which makes it difficult to compare 'natural fragrances' between brands. 'Natural' communicates where it comes from but not how it's processed, its quality/grade, or testing," Swei said.

Many ingredients found in "natural" fragrances, such as pulegone, beta-myrcene, and lilial, have been shown to induce worrying health complications such as cancer. Lilial, a highly allergenic chemical that causes reproductive harm, is banned in Europe.

Because of the ambiguity surrounding fragrance ingredients, Swei encourages consumers to look for specific fragrance ingredients from products and brands that disclose their fragrance ingredients.

Natural Fragrances

Aromatic herbs such as Murraya and Elsholtzia have been used in traditional cultures for treating various diseases.

Frankincense used to be a popular fragrance used widely in ancient times. It was also one of the gifts presented to Mary by the wise men for the birth of baby Jesus.

Murraya

Elsholtzia

Frankincense

The Omnipresence of Fragrances

The impact of fragrances doesn't just affect perfume enthusiasts and cologne connoisseurs. Fragrances affect most Americans, considering that they're implemented in most household cleaning and personal care products.

Suzi Swope, a natural esthetician, fragrance expert, and founder of health and lifestyle blog Gurl Gone Green, pushes back on the normalcy of having numerous scents frame our everyday lives.

"If you constantly need to have things scented, I would take a step back and ask yourself when was the last time you just smelled nothing. Just clean, fresh air," she told The Epoch Times.

"Fragrance isn't taking away scent; it's masking the everyday scents and smells that make up life as we know it. Who wants to go through life with a mask on?

"I know our ancestors didn't have Glade plug-ins at their fingertips, but they did have nature—with all its scents, fresh flowers, and spices. A return to nature seems as close to 'normal' as one could get, yet our lifestyles don't show it."

Vance Voetberg is a freelance journalist for The Epoch Times based in the Pacific Northwest. He holds a B.S. in journalism and aims to present truthful, inspiring health-related news. He is the founder of the nutrition blog "Running On Butter."

MIRACULOUS BODY **THE MIRACULOUS IMMUNE SYSTEM SERIES** Part VI

The Spike Protein's Assault on Our Spleen

COVID-19 and its vaccines are posing a risk to our immune system's critical command center

In this series, "The Miraculous Immune System," we explore the true power of our immunity and the organs that work tirelessly to protect us. We also provide practical ways to protect these vital divine gifts.

Previously: *The lymphatic system not only is an indispensable protector but also could be a hidden path for toxins to spread throughout the body. It can be a spreading route for COVID-19 vaccines, which are linked with severe life-threatening events in the brain and heart.*

By Yuhong Dong & Makai Allbert

SOLSTOCK/GETTY IMAGES

The spleen can suffer a "stroke" from blood clots.

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If our body were a country, the lymphatic system would be the garbage processing system, and the spleen, for the blood circulation system, would be a general command station with an arms factory, a central recycling station, and a supervising checkpoint.

The spleen, the largest lymphatic organ in the human body, plays a critical role, especially during the COVID-19 era. It's one of the least understood organs of the human body.

The 'Odd' Spleen

The spleen is a reddish-purple, coffee bean-shaped, fist-sized organ that sits under the rib cage on the left side of the abdomen, next to the stomach.

Curiously, it's linked with a series of "odd" numbers: 1, 3, 5, 7, 9, and 11. The spleen is about 1 inch thick, 3 inches wide, 5 inches long, weighs approximately 7 ounces, and lies between the ninth and 11th ribs.

The spleen is primarily composed of two types of tissues: the red pulp, which contains red blood cells and venous tissues; and the white pulp, which contains white blood cells that regulate inflammation and play an important role in fighting pathogens.

A Multifunctional Vital Organ

Although small in size, the spleen performs a multitude of critical functions. It exemplifies the marvel of the human body's ability to use one thing for many purposes.

Sitting like a reservoir in the circulatory system, the spleen primarily regulates immune defense functions, produces antibodies, and filters the blood to remove pathogens, especially encapsulated germs. These are bacteria that are double-protected, more resistant to the body's immunity, and more invasive (e.g., Streptococcus pneumonia).

The spleen also removes old blood cells and helps control the amount of blood that circulates throughout the body, while creating critical blood reserves that can be released during trauma and significant bleeding.

The spleen has three primary functions.

Filtering Blood to Remove Invading Germs and Viruses

Pathogens will usually be neutralized or destroyed by the lymph nodes. However, any pathogens that manage to evade filtration will continue to circulate within the lymph flow and will eventually be recirculated in the blood.

Once in the blood, there is another efficient filter to remove these harmful agents—the spleen. As blood passes through the spleen, pathogenic components such as debris, bacteria, and parasites are rapidly eliminated, keeping the blood clean.

This is mainly done within the spleen's abundant lymphoid tissue—i.e., "white pulp"—with the help of macrophages, which are powerful scavengers that engulf and degrade dead cells, debris, tumor cells, and foreign materials.

During a chronic infection, and similar to the lymph nodes, the spleen may become inflamed from the accumulation of pathogens, causing it to increase in size.

Additionally, B cells, a type of white blood cell, produce infection-fighting proteins called antibodies that can attack bacteria. This antibody production of B cells is one of the most important contributions of the spleen to immunity.

Producing and Recycling Red Blood Cells

The body contains three main types of blood cells: red blood cells, white blood cells, and platelets. The spleen has the essential function of generating and recycling red blood cells, which keeps our blood healthy and clean.

From weeks 12 to 28 of fetal development, the spleen produces most of the red blood cells. After week 28, the bone marrow takes over and becomes the primary site for producing red blood cells.

The average lifespan of human red blood cells is approximately 120 days in circulation, after which they are engulfed by macrophage scavengers.

This is an extremely efficient process, as macrophages engulf about 5 million red blood cells every second without any significant leakage of red blood cell components into circulation.

The blood in the spleen flows through a unique network that is designed to carry out this cleaning process. Imagine the spleen as a factory and the splenic microcirculation as the assembly line. Blood enters the factory through the small splenic blood vessels and passes through a meshwork called the red pulp, which is like a quality control station that checks each blood cell for damage.

Think of macrophages as workers on the assembly line who remove any cells that don't pass the quality check. As the blood cells pass through the red pulp and into the meshwork, they get squeezed and pressed.

Squeezing helps to identify any damaged cells that may have passed the quality control test. If the cells are damaged, they rupture, and the spleen's cells digest the components that are released.

The products of that digestion are mainly reused by the body as nutrients, often for making new blood cells.

Creating Extra Blood Reserves

Another critical function of the spleen is its ability to release extra blood reserves in a crisis. In cases where the body experiences issues with blood supply, such as shock or loss of blood volume, the spleen can shrink in size and release up to 100 milliliters of blood into other areas of the body for circulation, which is 2 percent of the body's entire blood volume.

Unexpected COVID-Related Spleen Outcomes

In COVID-19 patients, doctors usually don't examine the spleen, even though it may be significantly affected by the virus, so its compromised condition could go unnoticed until a major issue arises.

How SARS-CoV-2 Can Decimate the Spleen

A postmortem autopsy study found that SARS-CoV-2 infection can involve pathological changes in lymph nodes and the spleen, which can cause severe cellular damage and a decrease in immune cells.

> The symptoms of a brain stroke and a heart stroke are widely known, but the symptoms of a spleen stroke, with a potentially life-threatening outcome (spleen rupture) aren't commonly recognized.

The study found that SARS-CoV-2 can damage the spleen and lymph nodes by infecting them directly or by triggering the production of interleukin 6 (IL-6). This can lead to the death of immune cells, shrinkage of the spleen nodules, and a decrease in lymphocytes.

The study also found that a protein called fatty acid synthase (FAS), which regulates cell death, was significantly increased in virus-infected spleens compared with healthy ones.

The research shows that SARS-CoV-2 can infect the spleen and affect the immune system, not just the lungs. This helps explain why COVID-19 patients may experience severe spleen-related outcomes.

COVID Infection Can Affect Spleen Size

A study looked at 160 acute COVID-19 patients and found that their spleen size and volume significantly increased during the early stage of hospitalization. This may be because of the body's immune response or other factors. The severity of the COVID-19 infection was also related to spleen enlargement.

Another study found that patients who recovered from COVID-19 had significantly smaller spleen sizes than healthy individuals. Additionally, the number of infection-fighting T cells in the body was lower in patients with severe pneumonia than in those with moderate pneumonia.

Both studies highlight the significant effect of COVID-19 on the spleen. The difference in spleen size between the two studies can be explained by the different stages of COVID-19 and the effects on infection-fighting cells, inflammation, and blood cells.

COVID-19 Can Cause Spleen Rupture and 'Stroke'

The spleen is the most highly vascularized organ in the body. Any serious injury or bleeding from the spleen can result in significant blood loss, leading to a lack of homeostasis, and in some cases, even death. Injuries to the spleen are common in blunt abdominal trauma.

Similar to a stroke in the brain or heart, the spleen can also have a "stroke." This often occurs when the splenic artery or its branches are blocked by a blood clot.

During the past three years, research has found quite a number of COVID-19 cases with spleen "stroke" reported worldwide:

- Three Brazilian cases had spleen and multiple systemic infarctions.
- In a Swiss case, a young, otherwise healthy 17-year-old man had an occlusion in his brain blood vessels and also splenic infarction.
- A United Kingdom case was reported with a serious condition of splenic infarction caused by COVID-19.
- A Turkish case reported a 68-year-old with splenic infarction and pulmonary embolism.
- United Arab Emirates doctors reported a 23-year-old previously healthy female COVID-19 patient with splenic infarction as the initial symptom.

These all may be because COVID-19 can cause blood clotting in small blood vessels in the spleen, which can lead to the death of spleen tissue. In some cases, the spleen can even break on its own, resulting in a rupture.

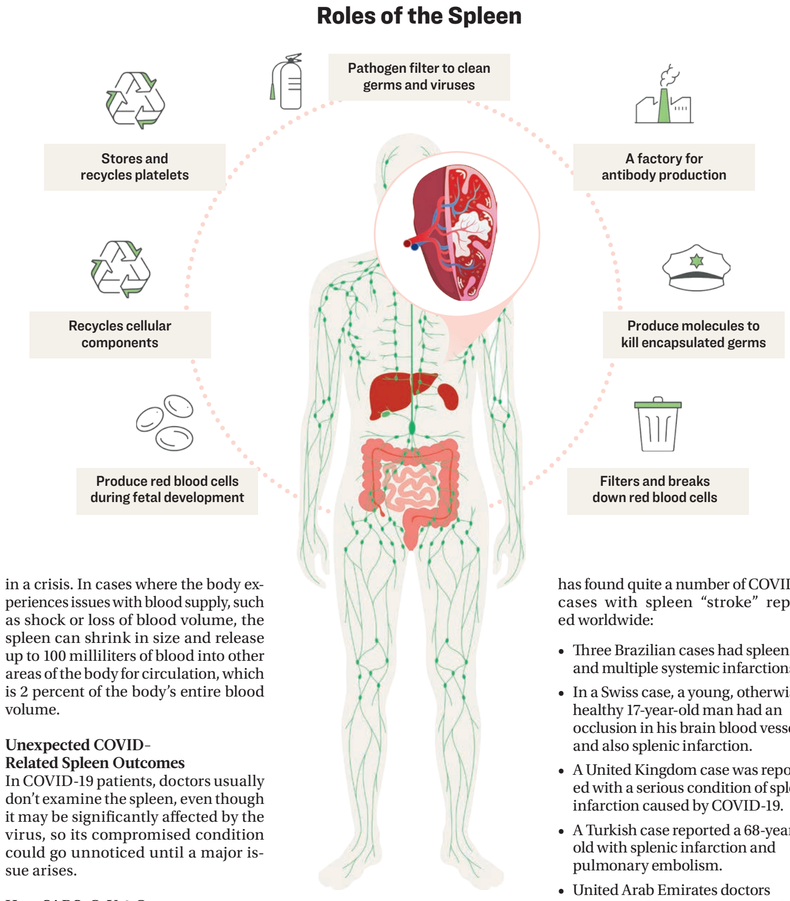
Cases of spontaneous nontraumatic spleen rupture secondary to COVID-19 disease have been reported in several countries, including the United States, Iran, Italy, the United Kingdom, and Saudi Arabia.

These severe cases remind us again that COVID-19 can increase the risk of blood clots in different parts of the body, including the heart, brain, and an often-forgotten organ—the spleen.

The symptoms of a brain stroke and a heart stroke are widely known, but the symptoms of a spleen stroke, with a potentially life-threatening outcome (spleen rupture) aren't commonly recognized.

Left-sided abdominal pain, with or without nausea and vomiting, should be carefully monitored to exclude the possibility of spleen infarction. When the spleen is ruptured, it often must be surgically removed.

Next Week: It is crucial to keep the spleen healthy because of all that it does for us and because removing it can lead to severe infection with a high risk of death.

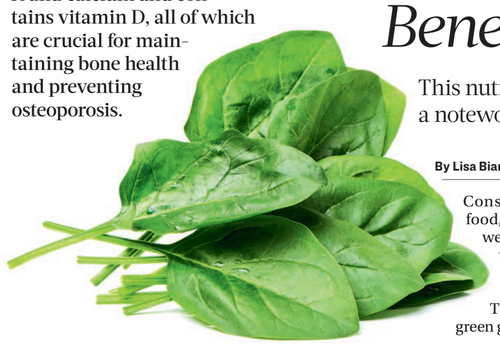


FOOD AS MEDICINE

The Surprising Benefits of Spinach

This nutrient-dense, widely available vegetable has a noteworthy list of important benefits

Spinach is rich in vitamin K and calcium and contains vitamin D, all of which are crucial for maintaining bone health and preventing osteoporosis.



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By Lisa Bian

Considered a superfood, spinach boasts a wealth of essential vitamins, minerals, phytochemicals, and bioactive substances. This versatile leafy green graces our tables as a culinary staple and offers health benefits such as improved vision, brain function, and bone health. It also helps prevent the risk of developing cardiovascular disease and certain types of cancer.

It's widely known that dark green leafy vegetables are a vital component often missing in the American diet. Among these vegetables, spinach is among the most desired due to its rich nutrient profile. Spinach contains an abundance of beta carotene (vitamin A) and folic acid while providing significant amounts of vitamin C, calcium, iron, phosphorus, sodium, and potassium. Additionally, it is also a good source of antioxidants.

Health Benefits of Spinach

1 Protects Vision Health and Prevents Cataracts and Macular Degeneration

Spinach is a nutrient-dense vegetable with high levels of lutein and zeaxanthin, organic pigments that are essential for maintaining optimal eye health. These carotenoids are critical in supporting vision health by protecting against macular degeneration and cataracts.

A 2000 study published in the Journal of the American College of Nutrition showed that high intakes of lutein and zeaxanthin, especially from certain lutein-rich foods such as spinach, broccoli, and eggs, can reduce the incidence of cataracts and age-related macular degeneration by 20 percent and 40 percent, respectively.

However, the Academy of Nutrition and Dietetics warns that the consumption of lutein and zeaxanthin must be accompanied by fat to ensure proper absorption by the body. Therefore, while consuming spinach, it's recommended to incorporate unsaturated fat, such as a small amount of olive oil or a few slices of avocado.

2 Preserves Brain Health and Delays Cognitive Decline

Spinach contains magnesium, lutein, folic acid, beta carotene, and chlorophyll quinone, all of which support brain health.

In 2023, the European Journal of Nutrition published a report revealing that individuals who consume more magnesium have better brain health than those with lower intake levels, particularly among women.

In 2018, a report published in the journal Neurology revealed that the daily intake of leafy greens such as spinach might help delay cognitive decline in old age. This is attributed to these greens' neuroprotective effects of lutein, folic acid, beta carotene, and chlorophyll quinone.

3 Lowers Blood Pressure to Prevent Cardiovascular Disease

According to a study published in Free Radical Biology and Medicine in 2012, consuming nitrate-rich spinach can increase nitric oxide levels, improve endothelial function, and promptly decrease blood pressure, positively affecting cardiovascular health.

A study published in Experimental Neurology in 2005 found that long-term consumption of spinach can assist in reducing ischemia, reperfusion-induced apoptosis, and brain infarction.

4 Prevents Cancer

According to a 2010 study published in the journal Bioactive Foods in Promoting Health, spinach was found to have the highest levels of sulfoquinovosyl diglycerides and monogalactosyl diglycerides among the green vegetables tested for their glycoglycerolipid fractions. Glycosphingolipids extracted from spinach can inhibit the activity of mammalian replication polymerase and inhibit the growth of human cancer cells when taken orally.

5 Prevents Obesity

In 2019, the Journal of Functional Foods published a study that revealed the preventative effects of a spinach extract, rich in chlorophyll, against high-fat-diet-induced obesity in mice. The study noted that the extract was linked to changes in the gut microbiota.

6 Prevents Osteoporosis

Spinach is rich in vitamin K and calcium and contains vitamin D, all of which are crucial for maintaining bone health and preventing osteoporosis.

7 Prevents Skin Aging

Spinach is essential in maintaining healthy skin because it contains vitamins A, C, E, and K.

During the 2021 IEEE International Conference on Health, Instrumentation, and Measurement and Natural Sciences, researchers presented a study demonstrating that extract from red spinach leaves notably reduces skin aging.

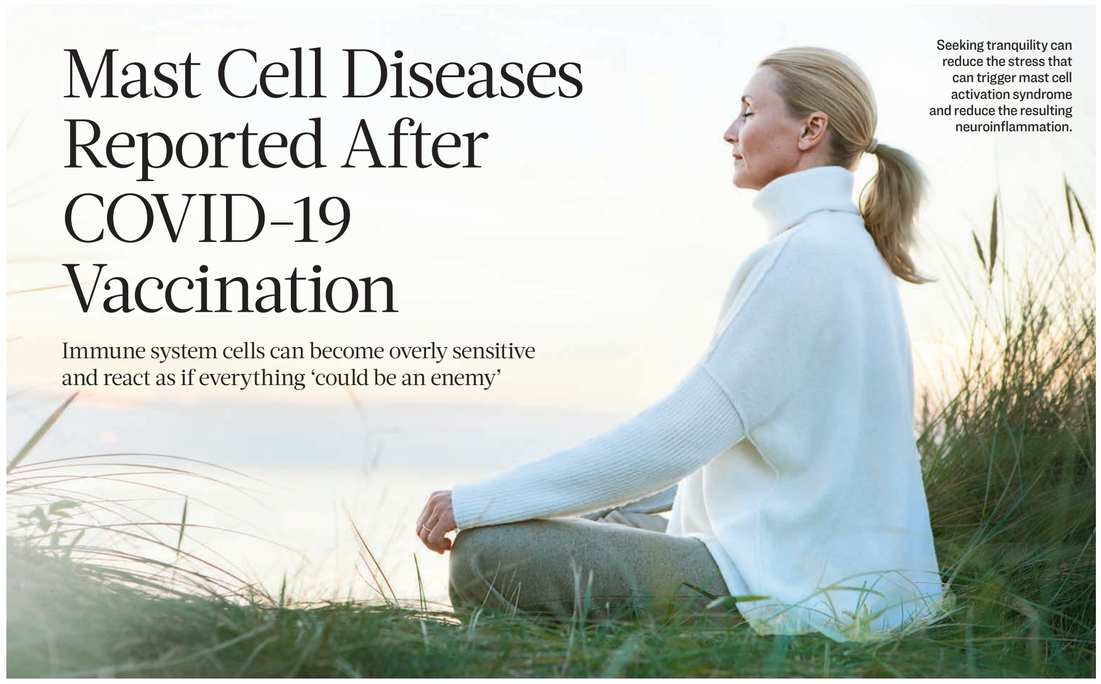
Eating spinach can help you have younger-looking skin and prevent signs of aging.

COVID-19 VACCINES **UNEXPLORED ADVERSE EVENTS OF COVID-19 VACCINES** Part VI

HENRIK SORENSEN/GETTY IMAGES

Mast Cell Diseases Reported After COVID-19 Vaccination

Immune system cells can become overly sensitive and react as if everything 'could be an enemy'



Seeking tranquility can reduce the stress that can trigger mast cell activation syndrome and reduce the resulting neuroinflammation.

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In this series, *we evaluate some of the lesser-known yet common adverse events that are appearing in the research literature as well as in doctors' clinics and, more importantly, how to deal with them and reduce the risks.*

Previously: *Underdiagnosed cases of post-vaccine small fiber neuropathy are concerning, but some doctors are more concerned about the slew of novel movement disorders they're seeing in their patients.*

By Marina Zhang

More than 22 months after taking her first dose of the Pfizer COVID-19 vaccine, musician and singer Emaline Delapaix was diagnosed with various systemic diseases.

She has seen at least 16 medical specialists, all convinced that the vaccine was involved, especially her longtime primary care physician, who knew that Delapaix was healthy prior to getting the shot.

On June 17, 2021, she took her first dose with her then-fiancé. She felt fatigued and heavy but waved it off as a typical vaccine reaction. However, within hours, she developed excruciating pain in her arms. The pain soon spread to her back and legs.

In the ensuing months, Delapaix said she was so fixated on the pain that she missed another lurking problem.

After meals, she sometimes developed fatigue so severe that she felt sedated. Her face and joints swelled, burning pain flared throughout her body, and her heart rate increased. She needed to take three doses of antihistamines to control her symptoms.

What Delapaix developed is called mast cell activation syndrome. Her mast cells, sometimes called the "sentinels" of the immune system, have become overly sensitive, and exposure to inflammatory food or environmental chemicals now triggers an inflammatory reaction in her body. Her doctors explained that the vaccine has made her body confused and reactive.

It's reacting as if "everything that comes in could be an enemy," she told The Epoch Times. She has since had to change her diet, cutting out foods that could trigger the reaction, such as gluten, chocolate, citrus, avocados, and processed food.

The disease has become the new focus of Delapaix's life.

"[It] is dangerous—you can have a stroke or a heart attack—so I have to take it seriously," she said.

Delapaix was tested in a vaccine-injury clinic in Marburg, Germany, and the test showed that she had spike protein but no nucleocapsid protein in her body, both of which are COVID-19 viral proteins. The COVID-19 vaccine causes the body to produce only spike protein. If she had been previously infected, both nucleocapsid and spike proteins would have been present.

More Common Than It Seems

Although it's largely unrecognized, mast cell activation syndrome is quite common and may be the underlying cause of many conditions, Dr. Lawrence Afrin, a hematologist specializing in mast cell activation syndrome, said in an interview with Dr. Mobeen Syed.

The cause of this disease is unknown. A study estimated that 17 percent of the population of Germany (where Delapaix lives) is predisposed to developing the disease.

Studies have linked the inflammation in acute COVID-19 and many long-COVID symptoms with mast cell activation.

Mast cell activation syndrome describes a condition in which mast cells, a type of immune cell, become overly sensitive such that any foreign substance may trigger them to release compounds. Histamine is the most well-known compound released, but not all mast cell activation syndrome cases involve histamine reactions.

There are two aspects to mast cell activation:

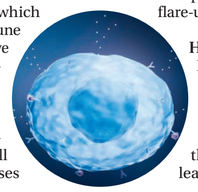
1. Spontaneous activation of mast cells and release of histamine and other inflammatory compounds causing inflammation in many tissues and organs
2. Histamine intolerance, which can trigger allergic symptoms

Histamine intolerance occurs in people who can't process histamine or whose histamine levels are so high that the body can no longer keep them under control.

Under normal circumstances, histamine is necessary. It's released to control infections and promotes stomach acid release for digestion. Some healthy foods, such as avocados and cashews, contain histamine.

However, when the histamine level passes a certain threshold, it can cause inflammation and allergic symptoms: Blood vessels widen, airways constrict, mucus production increases, tissues swell, and the skin becomes flushed.

The threshold level of histamine is often compared to a cup: Everyone produces histamine from day to day, but as long as the baseline histamine is contained within the cup, the person won't show symptoms. But if histamine levels exceed the parameters of the cup, the contents will start to overflow, and that's when patients will experience a flare-up. A severe flare-up can be life-threatening.



Triggers for mast cell activation syndrome include certain foods, stress, and common allergy triggers, such as pollen and dust mites, chemicals, and medications.

Histamine and COVID-19

Histamine is believed to be a major contributor to severe COVID-19.

In long COVID, mast cells can be triggered by the virus. Histamine released into the brain can cause stress, neuroinflammation, and impaired brain function.

It isn't understood how these mast cells become activated both in COVID-19 and in long COVID, but the mechanism may be driven by the spike protein, which is the inflammatory protein on SARS-CoV-2 virus surfaces, central to COVID-19.

Studies have shown that the virus infects mast cells by binding its spike protein to mast cell receptors. Animal studies have also demonstrated that isolated spike protein can activate mast cells.

Board-certified internist Dr. Keith Berkowitz told The Epoch Times that about half of his patients who developed reactions post vaccination have some form of mast cell involvement, as indicated by chronically elevated levels of circulating histamine.

Family doctor Jeffrey Nordella has likewise diagnosed patients with mast cell activation syndrome after their vaccination.

Many Triggers, Many Symptoms

Typical symptoms of mast cell activation vary from skin problems and breathing difficulties to digestive issues, according to a study published in The American Journal of the Medical Sciences.

However, mast cell activation can also trigger brain fog, neuropathy, hair loss, and bleeding abnormalities, depending on what and where various compounds are released.

Mast cell activation syndrome is often associated with systemic dysregulation, such as fibromyalgia, and dysautonomic conditions, such as postural orthostatic tachycardia syndrome (POTS). Patients may be diagnosed with either of these conditions before being diagnosed with mast cell activation. Both fibromyalgia and POTS have been reported among long-COVID patients, and POTS has been seen in vaccinated patients.

Delapaix was also diagnosed with POTS and neuropathy.

Berkowitz said many of his post-vaccine mast cell activation patients develop myriad symptoms, including brain fog, palpitations, chest pain, and even exercise intolerance.

Triggers for mast cell activation syndrome include certain foods, stress, and common allergy triggers, such as pollen and dust mites, chemicals, and medications.

Some people are triggered by foods high in histamine, such as aged meats and dairy. Others may be triggered by inflammatory foods, such as gluten and sugar.

Certain medications and medical interventions, such as vaccines, can cause flare-ups. Environmental chemicals, such as fragrances, can also do so. Both physical and emotional stress, in particular, easily aggravates mast cells.

Patients may develop allergic reactions to certain things despite having no prior history of allergy. Some experience a worsening of allergic symptoms. Berkowitz has seen both phenomena among vaccinated patients.

What to Look For

Afrin said that it's essential for those with a complex history of systemic inflammation to be vigilant, noting that if the patient has been diagnosed with conditions ending with "-itis," this may indicate mast cell involvement.

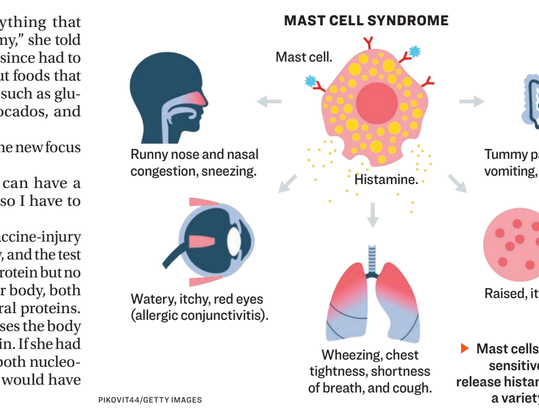
Berkowitz explained that mast cell activation syndrome is hard to diagnose, as one of the criteria is that the patient must be found to have tryptase, a chemical primarily released by mast cells during activation. But patients' mast cell activation flare-ups don't necessarily coincide with when the test is taken. Sometimes by the time tests are taken, the tryptase has stopped circulating and is therefore not detected.

According to The American Journal of the Medical Sciences study, other useful diagnostic markers for mast cell activation syndrome include histamine, prostaglandin D2, heparin, and chromogranin A.

Mast cells produce a thousand different compounds, depending on the mediator at play, Afrin said.

Nordella noted that if a patient displaying severe allergic symptoms experiences an improvement after being treated with therapeutics that target mast cells, such a drug response indicates that the patient has some form of mast cell activation.

Next: *Jeff Jackson was self-sufficient until he took the second dose of his COVID-19 vaccine and dark red shapes started appearing on the back of his head.*



PIKOVIT44/GETTY IMAGES

Mast cells become overly sensitive and too easily release histamine, leading to a variety of symptoms.

Around **17** **PERCENT** of the German population is predisposed to developing the mast cell activation syndrome.

SOURCE: "FAMILIAL OCCURRENCE OF SYSTEMIC MAST CELL ACTIVATION DISEASE," PLOS ONE, 2013.

Avoiding certain food triggers high in histamines such as dairy, shellfish, and chocolate may help reduce mast cell activation syndrome.

3 Ways to Alleviate Mast Cell Activation Syndrome

Various treatments can help with mast cell activation syndrome.

Histamine Blockers

HHistamine blockers bind to hisamine receptors. This stops histamine from binding and triggering unwanted activity in tissues and organs.

Only blockers for histamine receptor 1 and histamine receptor 2, also known as H1 and H2 blockers, are currently on the market.

Both H1 and H2 receptors can be found in the brain, heart, muscles, immune cells, and the gut, but the two receptors are associated with different symptoms.

H1 blockers are primarily prescribed for typical allergic symptoms, such as runny nose, itchiness, swelling, redness, pain, nausea, vomiting, hives, dermatitis, and conjunctivitis. H2 blockers are mainly used to treat digestion-related symptoms, such as gastric acid reflux and stomach ulcers.

There are also first- and second-generation H1 blockers. First-generation H1 blockers are more powerful and sedative, since they can enter and affect the brain. They're, therefore, often used as a last resort when no other blockers work.

Examples of first-generation H1 blockers include diphenhydramine, also known as Benadryl, and chlorpheniramine, which has the brand name Chlor-Trimeton.

Second-generation H1 blockers can't enter the brain, so they don't sedate. Examples of second-generation H1 blockers include cetirizine, better known by its brand name Zyrtec, fexofenadine (Allegra), ketotifen (Zaditor), and loratadine, branded as Claritin.

Other histamine receptors currently have no blockers to inhibit their activity. H3 receptors are also present in the brain and are involved in neuroinflammation. H4 receptors are present in immune cells and are involved in allergy and inflammation.

Mast Cell Stabilizers and Antihistamines

Besides being an H1 blocker, ketotifen is also a mast cell stabilizer, which prevents the activation and release of histamine and other mast cell chemicals. Cromolyn is another stabilizing pharmaceutical.

There are also naturally occurring mast cell stabilizers, including quercetin, luteolin, Nigella sativa, vitamin D3, and vitamin C.

Not everyone with mast cell activation syndrome responds to these treatments; some may experience symptom exacerbation. For example, Delapaix said she experienced a severe flare-up after taking intravenous vitamin C.

Berkowitz said he has found low-dose naltrexone to be particularly helpful. The drug helps balance the ratio between inflammation and anti-inflammatory processes, thereby reducing mast cell activation.

Diamine oxidase enzymes are antihistamines that the body produces to digest histamine, although people lacking this enzyme can also obtain it through supplements. Diamine oxidase enzymes help lower histamine levels.

Lifestyle Interventions

Identifying and removing mast cell activation triggers can help manage the disease.

This can include cutting out foods high in or that increase histamine, such as fermented food, aged meats, dairy, alcohol, shellfish, citrus, and chocolate. Foods high in oxalates, such as spinach, tomatoes, and chocolate, and lectin-rich foods, such as gluten, should also be avoided.

However, some nutritionists have argued that a low-histamine diet shouldn't be permanent, as it can be very restrictive and only treats a symptom rather than fixing the root problem—the overactivation of mast cells.

Quercetin and Nigella sativa help reduce histamine levels and regulate the microbiota.

Stress is a common trigger for mast cell activation syndrome, so getting plenty of sleep and practicing mindful exercises, such as prayer, meditation, and yoga, can help reduce stress and may prevent future mast cell flare-ups.

Taking naturally occuring mast cell stabilizers like quercetin or Nigella sativa may help contain histamine production.

AGE WELL

Can Exposure to Light Help Fight Dementia?

Increasing numbers of studies suggest light therapy could be an important and safe treatment for dementia

By George Citroner

MONIKA WISNIEWSKA/SHUTTERSTOCK

Phototherapy involves shining a bright, near infrared light on the scalp to stimulate cells and reduce inflammation.

Degenerative neurological disorders, such as dementia and Alzheimer's, can significantly affect an individual's cognitive abilities and overall quality of life. While there is currently no commonly prescribed cure for these conditions, researchers are exploring new treatments that may help slow the conditions' progression or alleviate specific symptoms.

One treatment that has shown promise is light therapy.

Light May Heal

Phototherapy, also called light therapy or photobiomodulation, involves using specific wavelengths of light to stimulate cells in the body. A meta-analysis published in Brain and Behavior in April looked at 12 controlled trials and concluded that phototherapy "may be one of the most promising non-pharmacological interventions for improving core symptoms of dementia."

The studies included older adults of all ages with various types of dementia, including Alzheimer's, vascular dementia, dementia with Lewy bodies, Parkinson's, and mixed type/other causes.

Isabella Park, DO, associate medical director and director of geriatrics and palliative care for Northwell Long Island Jewish Forest Hills, told The Epoch Times that the study findings suggest that phototherapy can significantly improve cognitive function—including memory, attention, and executive function—in patients with dementia.

"The positive effects were observed in both short-term and long-term interventions," she noted but also cautioned that phototherapy shouldn't be used as a substitute for other treatments for dementia, such as medication and behavioral therapies.

Although the field is still in its early stages, there is growing evidence to suggest that phototherapy may be effective in improving cognitive function and reducing symptoms of cognitive decline.

Phototherapy, also called light therapy or photobiomodulation, involves using specific wavelengths of light to stimulate cells in the body.

Light Therapy May Reduce Brain Inflammation

One of the main ways that phototherapy works is by reducing inflammation in the brain. Inflammation is a crucial contributor to many neurological disorders, including Alzheimer's.

Research based on animal models shows that phototherapy can help reduce brain inflammation, which may slow the progression of neurodegenerative diseases.

Another way that phototherapy may help is by improving mitochondrial function. Mitochondria play a crucial role in the health of brain cells and are considered the "powerhouses" of cells.

Studies involving animals have shown that a specific type of phototherapy, known as transcranial photobiomodulation (tPBM), can help improve mitochondrial function, which may lead to better cognitive function and a slower progression of degenerative neurological disorders.

The therapy involves shining near-infrared light on the scalp, which is believed to penetrate the skull and stimulate brain cells.

Researchers at the University of Birmingham in the United Kingdom and Beijing Normal University in China have found that this noninvasive therapy could improve short-term and working memory in people by about 10 percent. Dongwei Li, a visiting doctorate student at the University of Birmingham's Centre for Human Brain Health and study coauthor, said in a statement that this type of treatment "is safe, simple and non-invasive, with no side-effects."

In the study, 90 male and female participants between the ages of 18 and 25 were treated with laser light beamed through their scalps to the right or left prefrontal cortex at 1064 nm wavelengths. They were also administered a placebo to confirm the effect observed with treatment.

After more than 12 minutes, participants were given memory tests. Those who received the treatment showed clear memory improvements compared to the untreated group.

A recent systematic review of studies found that a combination of tPBM and visual stimulation (VS) with particular wavelengths had measurable benefits.

"Human studies performed so far support the use of PBM at 810-870 nm light pulsing at 40 Hz for improving brain network connectivity and memory in older subjects and AD [Alzheimer's disease] patients, while 40 Hz VS in humans seems to improve cognition," the study authors concluded.

Bright Light Therapy

Another type of phototherapy studied is bright-light therapy, which involves exposing individuals to bright light for a set period each day.

While bright-light therapy has been primarily studied as a treatment for seasonal affective disorder, one study suggests that it may also help improve cognitive function in individuals with dementia.

The study authors found that a bright-light therapy intervention program of 30-minute sessions "provides promising outcomes and immediate positive effects on mood, stimulation level, blood oxygen saturation, and heart rate."

According to Yuko Hara, director of aging and prevention at the Alzheimer's Drug Discovery Foundation, people with dementia often have disruptions in their sleep-wake cycles.

"A few small studies have suggested that light exposure or light therapy has benefit for dementia patients by enhancing visual sensory inputs to stimulate specific cells in the hypothalamus that regulate the circadian rhythm," Hara said.

One reason this treatment shows promise could be related to its effect on an agitated state of confusion called sundowning, which happens to some people with dementia toward the end of the day.

"Adjusting lighting is one of the ways in which you can prevent or better cope with sundowning," Hara said. "Exposure to natural bright light in the morning and softer room lighting in the evening may help regulate one's circadian rhythm," she added. This can also improve sleep patterns for people with dementia. Poor sleep is associated with worse memory in people with dementia. Sleep medications, according to some research, may do more harm than good.

"Sleep-promoting medications are not recommended due to increased risks of falls, drug interactions, and other adverse events," Hara said. "Light therapy, on the other hand, is generally safe."

Although the use of phototherapy for the treatment of degenerative neurological disorders is still relatively new—and the results have been promising—it's important to remember that more research is needed to fully understand how it can best be used to treat these conditions.

While phototherapy may be a viable option for some individuals, it's essential to weigh the potential benefits and risks, such as possible skin irritation and sleep disturbance if used at the wrong time of day, before making any treatment decisions. The hope is that with continued research and innovation, new treatment options will be developed that improve the lives of people who have degenerative neurological disorders.

XAVIER LORENZO/GETTY IMAGES

ALL IMAGES BY SHUTTERSTOCK UNLESS OTHERWISE NOTED

TECHNOLOGY

7 Tips to Take Control of Your Smartphone Before It Takes Control of You

Unless we take charge, smartphones can wreak havoc on our social lives, work, and mental well-being

By Jano Tantongco

By the time you've read this article, you may have felt the pull to check your smartphone—more than once. Americans are inexorably tethered to the little black screens in our pockets even though we know they can bring us more harm than good. So how do we keep our smartphone use in check?

In 2018, a survey found that Americans check their phones 52 times per day. If that sounds low, a different survey from 2022 found respondents checked their devices a whopping 344 times a day. Fortunately, new research is suggesting simple upgrades in our tech hygiene that can help us curb our smartphone habit.

A Problem in All Our Pockets

A 2017 review of studies examining links between smartphone use and mental health, published in the Journal of Affective Disorders, found that depression severity and anxiety were associated with "problematic smartphone use."

Studies show that excessive screen usage may also be setting up toddlers for difficulty later in life. As published in the Journal of Pediatrics in 2022, researchers surveyed 352 parents of 2-year-old toddlers to determine the role of diet and lifestyle on executive function.

They asked parents to determine their child's ability to organize thoughts, regulate emotions and impulses, recall information, and shift attention between various tasks. They found that toddlers that used screens for less than 60 minutes a day had "significantly greater" ability to "control their own cognition."

On top of this, recent literature is showing that smartphones can indeed be addictive. In one study published in Addictive Behaviors in 2020, researchers conducted MRIs on those who self-reported problematic smartphone use. The brain scans found similar patterns of brain activity as those with addictive disorders. They also showed decreased activity in brain regions responsible for cognitive control.

Salience and Smartphones

In neuroscience, salience is the property by which something stands out. In economics, salience is our predisposition to prioritize goods and information that we deem as noteworthy or more relevant over other goods and information.

Jeff Cain, associate professor of pharmacy practice and science at the University of Kentucky, has been focusing on salience as an aspect of our compulsive phone usage. Cain told The Epoch Times that he began tracking society's confrontation with "digital afflictions" since Facebook first gained a foothold on college campuses. Since then, he's been examining how we can improve our relationship with technology, most recently focusing on mental health and the use of social media and smartphones.

Cain is the co-author of a study published in the American Journal of Pharmaceutical Education in 2022 that sought to determine the effectiveness of applying the salience principle of economics to reduce pharmacy students' attraction to their smartphones.

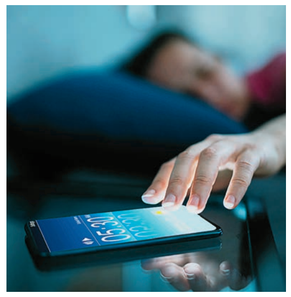
> When we pause to become more aware of the present moment and of our mind itself, there is a corresponding awareness of how easily we can become distracted, as well as the source of that distraction.

"With smartphones and social media, some of the salience is color. Some of it is where you have things on your screen. So, if you turn it on and you have Instagram or Twitter or Facebook on your home screen, it's right there in your face," he said.

The study looked at how much University of Kentucky students would use their smartphones after reducing its salience by changing their display to grayscale; disabling social media notifications; removing social media application icons from their home screens; and moving their phones away from their beds before sleeping.

Fifty-two percent reported a decrease in overall smartphone use. Grayscale made smartphones more boring and curbed attraction by 34 percent. About 31 percent of students said they used social media less. Twenty percent reported they found it easier to fall asleep or had better quality sleep. Fifteen percent said they experienced less stress, anxiety, or depression.

But, 12 percent noted they experienced heightened concerns of missing communications, popularly described as FOMO (fear of missing out).



Keeping our smartphone out of the bedroom can help us avoid using it in bed where it will inevitably rob us of sleep.

After the challenge, Cain kept his own phone on grayscale permanently.

"When you get that little bit of boredom, you're in line, or you're stuck in traffic, and you pull it out and it's gray, looking at it doesn't do anything for you. And it really does make it ... not exciting, so you just put it away."

Beyond Willpower

Cain is an avid runner, particularly wilderness trails, ultramarathons, and obstacle courses. He's run in the 50K Barkley Fall Classic; traveled to Nicaragua to race by a volcano; and has done a rim-to-rim-to-rim run at the Grand Canyon. He's no stranger to grit and willpower. Even so, he sees excessive smartphone use as more of a question of retooling one's environment rather than exerting sheer will. In previous years, he said, he would have emphasized the role of willpower. Not anymore.

"A lot of that research shows willpower can only take you so far. It actually depletes over time. The more you have to use willpower, at some point in time, you break."

Many of the studies on smartphone use are based on self-reporting, but there is also a growing body of research looking at more objective criteria. In one study published in Computational Intelligence and Neuroscience in 2016, researchers measured brainwaves of participants who were divided into two groups based on pre-experiment questionnaires: one as "at risk" for smartphone addiction, and the other was determined as "non-risk."

Wearing electrode caps, both groups were asked to perform cognitive challenges and were exposed to smartphone push notifications during the experiments. Both groups showed "sensitive reactions" to the notifications. But, the at-risk group showed a higher sensitivity to notifications. And, they showed impaired concentration and cognitive performance after the notification had passed, something not seen in the non-risk group.

Jano Tantongco is a writer and digital creative based in New York. He covers health, culture, and politics.

OUTSMART YOUR PHONE

Our smartphones are backed with the latest technology and packed with apps made by some of the most cunning minds of our age. These sleek, powerful devices offer endless entertainment at the flick of a thumb, an offer so compelling it can become impossible to resist.

As algorithms entice us to spend our time in the confines of these small screens, our minds and bodies suffer the consequences. Fortunately, there are steps we can take to dull the allure of these shiny prisons.

Keeping Smartphone Use in Check

Unlike many other vices, smartphones are a necessary tool for modern life. Fortunately, experiential research and empirical findings can help us grapple with this inescapable temptation. Try the following strategies to help manage your own smartphone use.

Use Grayscale Mode

Colors are appealing to the eye. Technology designers know that, and they pick colors to keep you hooked, like red notification bubbles or the cornucopia of color readily available on Instagram. Turn on grayscale for a decidedly more boring experience. Many phones will even allow you to automatically specify when to turn grayscale mode on and off. Try having your phone switch to grayscale at least an hour before bedtime.

Turn Your Phone Over, or Stash It Out of Sight

For a simpler, no-frills approach, turning your phone over is an easy way to temporarily close off the digital world to focus on work or quality time with loved ones. Switching it to silent mode complements this technique well and keeps you immersed in the moment at hand.

Don't Sleep Next to Your Phone

Scrolling in bed is a guilty pleasure many indulge in but it can reduce both sleep quality and duration. Leaving your phone in another room can prevent this habit and also keep you from using your phone immediately upon waking. Instead of using your smartphone, try reading before bed.

Use the Timer on Your Phone to Concentrate on Another Task

If you're fully engaged in another task, you won't be using your smartphone. Set a timer on your phone with your preferred focus duration and set it aside. Your phone will be occupied while the timer app is in use, and you'll be more incentivized to stay productive.

Practice Mindfulness

The next time you go to pick up your phone out of boredom or some other feeling, pause to tune into what you are sensing in your body and what is compelling your habitual phone use. When we pause to become more aware of the present moment and of our mind itself, there is a corresponding awareness of how easily we can become distracted, as well as the source of that distraction.

Whether it's through prayer, meditation, or secular practice, a greater level of mindfulness will naturally dissuade us from becoming too consumed by our technology usage.

Turn Off Notifications

The pings, vibrations, and pop-ups associated with notifications are unceasing by default—but you can turn them off, or at least minimize them. You can disable notifications by using "Do Not Disturb" mode (this usually also turns off call and text notifications also). You can also switch them off for specific apps in your phone's settings, as well as specifying what kind of notifications you receive in an individual app's settings.

Remove Social Media Apps From Your Home Screen

Social media apps are a huge driver of smartphone use. Adding some friction to access them can help curb use and keep social media off our minds. This also keeps the red notification badges out of sight.

Why Introverts Should 'Act' Like Extroverts

Sometimes acting 'out of character' can pay financial and emotional dividends

By Zrinka Peters

If you're more excited by the idea of a holiday party than a quiet evening reading, you may be an extrovert. If it's the other way around, you may be an introvert.

While those labels can be overly simplistic—most people lie somewhere on a spectrum between the two—they're still useful in understanding ourselves and those around us.

Extroverted traits typically include being outgoing and enthusiastic, impulsive, and talkative. Introverted traits, on the other hand, usually include being introspective, a good listener, and more reserved.

Extroverts seek the stimulation of socially energized environments, while introverts tend to prefer small groups, one-on-one interactions, and plenty of alone time.

Swiss psychiatrist Carl Jung, who first described traits of extroversion and introversion in the 1920s, observed that extroverts are energized through social interaction, while introverts recharge best in quiet solitude.

While both personality types have strengths and weaknesses—an extrovert's enthusiasm could come across as overbearing, while an introvert's introspection could be perceived as aloofness—American culture tends to celebrate and reward extroverted behavior. Elementary schools emphasize socializing and group participation, while colleges encourage collaboration and teamwork—skills that favor more extroverted students.

Extroverts are usually happier, earn more money, and report greater job satisfaction than introverts.

ALZAY/SHUTTERSTOCK

This translates seamlessly into the business world, where speaking up and standing out is more likely to lead to a promotion than quietly but competently getting your work done. Former General Electric CEO Jack Welch, advised introverted employees to improve their job prospects in this way, "Get out there, mix, speak more often, and connect with both your team and others, deploying all the energy and personality you can muster." And a report by Truity Psychometrics on 'Personality Type and Career Achievement' found that extroverts usually not only out-earn their introverted counterparts by substantial margins, but also report greater job satisfaction.

Susan Cain, in her bestselling book "Quiet: The Power of Introverts in a World That Can't Stop Talking," details the strong cultural bias towards extroverts and describes what is lost, both individually and collectively, when introverts are undervalued. Namely, creativity and innovation—which are often best nourished in quiet, solitary environments.

Acting Extroverted

Introverts and extroverts can learn and benefit from each other. Extroverts could deepen their personal relationships by learning to listen more carefully. But introverts may also benefit by leaving their comfort zones at times, and acting out of character.

Studies have consistently shown that extroverts report higher levels of satisfaction, or happiness, than introverts. The reasons for this may be multifaceted—perhaps it is because human beings are inherently social creatures, or maybe that extra time spent interacting with others provided a sense of meaning and connection that also contribute to happiness. But whatever the reasons, repeated studies have come to an interesting conclusion that can give introverts another tool in their armory of life skills—simply acting more extroverted can make you happier.

One study, published in the Journal of Experimental Psychology in 2020 titled "Experimental Manipulation of Extroverted and Introverted Behavior and Its Effects on Well-Being," examined whether participants could actually alter the extent to which they behave in ways that are extroverted ("talkative, assertive, and spontaneous") or introverted ("deliberate, quiet, and reserved") and how those changes in behavior impact well-being. Study participants were asked to behave in an introverted manner for a week, and then in an extroverted manner the following week. At the end of the study, not only were both extroverted and introverted participants very able to intentionally 'act' extroverted or introverted on demand, but both groups reported greater levels of 'positive affect'—or positive feelings or emotions—when intentionally acting more extroverted.

The study authors concluded that "Participants reported marked growth in positive affect during the extroversion week and marked decline in positive affect during the introversion week." In other words, simply making the effort to act 'out of character' and step out of their comfort zones in being sociable, actually made the introverts happier.

As Cain explains in Quiet, "Introverts are capable of acting like extroverts for the sake of work they consider important, people they love, or anything they value highly (p. 209)." She goes on to explain that introverts who exercise this ability are perfectly capable of being highly effective leaders, teachers, and even public speakers.

But there is a caveat to this 'tool'—while acting 'out of character' for short durations may be beneficial, too much time spent essentially putting on a performance can wear an introvert out. In that case, seeking out regular "restorative niches"—or the place you go to reconnect with your 'true self,' is essential. That could be a quiet walk, an evening at home, or even just a solitary bathroom break.

As Shakespeare tells us in Hamlet, "This above all: to thine own self be true." As a society, we may have embraced this message, but for introverts, stepping out of our comfort zones at times, to speak up and engage more socially, may also offer surprising benefits.

Zrinka Peters is a freelance writer focussing on health, wellness, and education topics. She has a BA in English Literature from Simon Fraser University in Canada and has been published in a wide variety of print and online publications including Health Digest, Parent.com, Today's Catholic Teacher, and Education.com

MOMO PRODUCTIONS/GETTY IMAGES

Extroverts often feel energized from larger social activities while introverts tend to prefer small groups or one-on-one interactions.

TRUTH *and* TRADITION
In Our Own Words

Uplifting, Inspiring, and Useful

"Family life has a tremendous impact on individuals and society as a whole.

Barbara Danza
Contributing Editor

Dear Epoch VIP,

I'm so happy you're receiving The Epoch Times in your home. I'm Barbara Danza, a contributing editor. You may have seen my articles in the Life & Tradition section or perhaps your children have discovered the page I edit: For Kids Only.

This is pretty much a dream job for me. Between interviewing knowledgeable and inspiring experts and influencers, diving into research about subjects I'm passionate about, or joyfully putting together a special page for our younger readers to enjoy, I feel so fortunate to play a small part in what The Epoch Times is bringing to the world. That I get to do this while taking care of my own family at home and homeschooling my children is truly a blessing.

Most of my work focuses on family life. Though it seems traditional family values have been under attack for some time in our culture, **I see more families searching for ways to simplify their lives, preserve the magic of childhood, pass on family traditions, provide their children a solid education and ground their family life in the values they hold most dear.**

Families face many issues today—from inadequacies in our educational systems to an increasing array of alternatives, from the frantic overscheduling of our lives to a trend toward simplicity, from the onslaught of disturbing media messages to more focus on what's good and true.

Family life has a tremendous impact on individuals and society as a whole. There are endless topics to explore. Should you have one you'd like me to cover, or if you have feedback you'd like to offer about my work, please send it on. I'd love to hear from you.

My first article in The Epoch Times was published back in its early days in 2005. It has been astonishing to watch our media company grow and see what a deep need it fulfills for our ever expanding audience. I feel lucky to be part of an enterprise that is giving so many people, as they often put it, what they've been searching for.

I hope you enjoy this week's edition of the paper, and that in addition to being well-informed about current events, you find ideas that are uplifting, inspiring, and useful in your own life.

We have only just begun. **Please help us continue to expand our reach by sharing The Epoch Times with your family and friends.**

Thank you for reading, for coming onboard as a subscriber and for supporting the work we do. Knowing that there are people like you who value high standards of journalism and traditional American values inspires us all to keep going.

In Truth and Tradition,

Barbara Danza
The Epoch Times

THE EPOCH TIMES

COURTESY OF JASON WILLIAMS

Miracles Abound for Boy With Rare, Devastating Diagnosis

Family offers lessons on determination, hope, and how to be proactive about picking doctors and treatments

Lily is Lucas's big sister and best friend—and since his latest treatment, they are closer than ever.

30 MILLION AMERICANS suffer from rare diseases.

AMY DENNEY

Before Lucas Cote had ever had a full neurological exam, his mother sensed something was wrong—despite a pediatrician who dismissed her concerns.

For Dr. Jenni Bush, a quick prognosis was a necessity to fast-track her son's recovery from whatever was at the root of his involuntary movements, inability to breastfeed, head lag, and lack of eye movement. A doctor of chiropractic medicine, Bush located a colleague in Boston who specializes in complex cases. But on the hot Arizona day of their flight, Lucas began having seizures, and their journey detoured to the local emergency department.

"Three days later, our world was turned upside down," Bush said about the day of her son's diagnosis. "I don't think the hospital's ever seen [anything like] it. We did a CT scan, and the neurologist came in and said bluntly, 'We think a part of his brain is missing.'"

Some cases of pontocerebellar hypoplasia are initially mistaken as cerebral palsy, as both affect a person's balance and ability to move.

There was a possibility that Lucas had moved during the scan, so they were admitted to the hospital for more tests. The next day, the buzz of a potential new or rare disease attracted 20 doctors to his case.

Within 24 hours, Lucas was diagnosed with pontocerebellar hypoplasia (PCH), a group of rare genetic disorders that affect brain development. There have been fewer than 1,000 cases in the United States. Doctors put his life expectancy at age 10 with no intellectual development beyond age 2. The family was told he would likely die in childhood from kidney failure, medications, or pneumonia. His brain would simply degenerate over time. He would never talk, roll, sit, crawl, or eat on his own.

What happened next wasn't unlike what happens after any rare disease diagnosis: shock, grief, guilt, determination—and then an action plan.

The news of Lucas's prognosis was dismal enough for Bush and her husband, Tim Cote, to have only the briefest of pity parties. Along with their two daughters, Olivia and Lily, the family's faith that God would intervene propelled them forward to search the world over for treatments that would allow Lucas to develop into his fullest potential.

"It's weird to say, but Lucas's diagnosis is probably the best thing that's happened to our family," Bush said.

Continued on ***Page 16***

VASIF MAHAROV/SHUTTERSTOCK

BODY MIND CONNECTION

Anxiety Can Be Triggered by the Heart: Study

Researchers are discovering how the heart's signals to the brain may determine how we feel

YUHONG DONG & CHRIS CHEN

Our body is truly amazing, with two vital organs—the heart and the brain—working together seamlessly to keep us alive and healthy. The heart acts as a pump, tirelessly circulating blood through the vascular system, providing oxygen and nutrients to the brain, lungs, and other organs to function properly. The brain serves as the command center, communicating with the body through the nervous system.

The communication between the heart and brain is a dynamic ongoing two-way dialogue, with each organ continuously influencing the other's function. Recent scientific research has revealed the complex interactions between these two organs, highlighting that the heart can also play a role in behavior and physiology.

One significant finding is that variations in heart rhythm may contribute to developing or exacerbating anxiety, one of the most common mental health conditions.

Increased Heart Rate Can Trigger Anxiety

A recent study by a group of neuroscientists from Stanford University investigated the relationship between increased heart rate and anxiety behaviors in a particular set of genetically modified mice.

The researchers used light to activate specific cells in the hearts of these mice to test the hypothesis that an increase in heart rate can trigger anxiety.

Cardiovascular-linked anxiety disorders are an increasingly common phenomenon.

Led by Karl Deisseroth, a professor of bioengineering and psychiatry and behavioral sciences at Stanford, the researchers employed a novel, noninvasive optical pacemaker to control electrical activity in the hearts of the mice. When the pacemaker detects light, it activates signaling pathways in light-sensitive cells, eventually transmitting information to the brain that light has been detected.

Continued on ***Page 18***

WHAT PEOPLE ARE SAYING

"This is true journalism. This is what the Founding Fathers meant by 'freedom of the press.'"

— *DARRYL AGEE*

You have been my source of hope. The truth is so scarce in media. The quality of my life is subject to the quality of truth in my life. Friends, work encounters, community interactions, all hinge on truth. The meticulous delivery of all sides of issues you cover permit me to sustain my hope in humanity. You have my deep respect and gratitude. I have told many, many patients (I am a physician) about you and will continue to do so. Truth + trust = hope + health."

— DR. MARY ELLEN BLUNTZER

I am sharing Epoch every chance I get. You guys bring a #1 product that people need DESPERATELY. Never have I read such a comprehensive, well researched, well sourced product in my entire life."

— STEPHEN SZYMANSKI

Love the Epoch Times. Wonderful to see news honestly presented...You have a good mix of uplifting, traditional, family, health & art/science. I know the truth when I finish reading the Epoch Times...I would recommend it to almost anyone."

— ANNE KELLY

Grapes: Anti-Aging Pain Reliever

Research is revealing why this fruit has long been valued for its medicinal effects

WEBER LEE

Grapes are rich in a variety of nutrients. In addition, the antioxidant properties of grapes can help rejuvenate the body and prevent signs of aging.

Grapes can be eaten fresh or made into raisins, wine, or grape jam. They contain various vitamins as well as potassium, calcium, and iron. Additionally, grape skins and seeds contain polyphenolic compounds, potent antioxidants that prevent cell damage caused by free radicals and help maintain normal cell growth and development.

The Efficacy of Grapes in Modern Studies

Phenolic compounds have been proven to have significant cardiovascular benefits, promoting blood circulation and controlling blood pressure. In addition, grape polyphenols protect against oxidative stress-related diseases such as cardiovascular disease, Type 2 diabetes, and metabolic syndrome, as was found in research published in 2022 in the journal Nutrients.

In 2017, researchers in Brazil conducted a control group experiment. They randomly divided 28 healthy adults into two groups, one drinking purple grape juice and the other drinking an artificial grape beverage. After 28 days, they found that the group drinking grape juice had increased plasma antioxidant activity and improved antioxidant capacity and cardiometabolic status under strenuous exercise. This experiment was published in the Journal of Functional Foods.

The Efficacy of Grapes in Traditional Chinese Medicine

According to the "Yunnan Materia Medica," a work on the pharmacology of the Ming Dynasty, grapes are "sweet in taste and calm in nature, and can lighten the body and prolong the life of the elderly, nourish the qi (vital energy) and blood, relax the tendons, and activate the joints."

In other words, grapes can replenish the nutrients the body needs, activate the circulation of qi and blood, improve immunity and resistance to disease, and even prolong life. In addition, grapes also support normal hematopoietic function (the formation of the cellular components of blood).

Dr. Hu Nai Wen, a renowned Chinese medicine practitioner in Taiwan, shared on his YouTube program that grapes are rich in vitamin B complex, vitamin C, and amino acids, which can help eliminate fatigue, maintain the skin and eyes, and relieve body aches and pains.

Raisins are also a good choice. Hu said that raisins are natural and don't need preservatives. The grapes themselves can inhibit the growth of bacteria after drying because of the high permeation pressure, so there is less need to worry about preservatives.

Raisins offer a long-lasting snack that is nutritious, free of preservatives, and good for the kidneys.

Hu suggests a cup of raisin and goji berry tea when feeling irritable. He said goji berries are good for the eyes, while raisins are good for the kidneys and help calm irritable moods.

Put 30 to 40 raisins and 20 to 30 goji berries in a teapot and brew them with boiling water for 15 minutes, then serve.

Avoid Overconsumption

Grapes are sweet, and excessive consumption can lead to obesity. Hu reminded us that traditional Chinese medicine (TCM) emphasizes the importance of moderation in maintaining a healthy diet. He suggests that 10 to 20 grapes per day is best.

Hu said that people with diabetes can also eat grapes. In the theory of TCM, high blood sugar is the "symptom" of diabetes but not the "cause" of the disease. Diabetes is caused by the body's inability to regulate blood sugar properly, not by eating sugar. Eating grapes won't worsen diabetes. A proper intake of nutrients in grapes is beneficial to the body.

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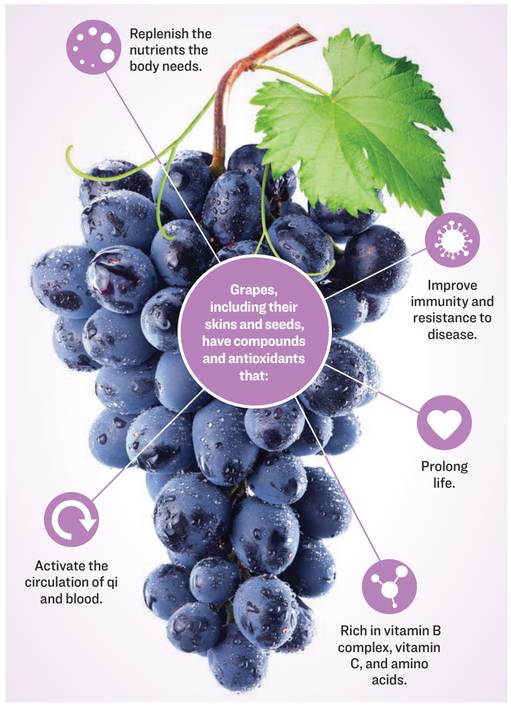

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Using Bacteria As a More Effective Cleaner

Several studies show that probiotics are far more effective cleaners by establishing healthy microbiomes to wipe out germs

Natural, probiotic cleaners effectively combat disease-causing germs and bacteria by maintaining the natural biome essential to health and life.

AMY DENNEY

Several studies show that adding more bacteria to the environment via probiotic cleaners is superior to chemical disinfectants at killing germs, or pathogens. Harsher cleaning agents such as bleach have to be reapplied every few hours to keep pathogens from re-emerging, as noted in a recent study comparing cleaning methods on Italian subways.

Part of the dilemma is that if someone ill is spreading more pathogens, the cleaners applied hours ago won't do much good. A 2016 study published in PLos One calls it the recontamination phenomenon, and it's believed to be the reason pathogen transmission is problematic, especially in hospital environments, where there are, naturally, more sick people.

But bugs can naturally kill other bugs. That's because living among the community of bacteria, viruses, and fungi—called the microbiome—are probiotics, a word with Latin roots meaning "for life." These beneficial bacteria offer profound health benefits that can destroy many of the disease-causing creatures lurking in the unseen world while maintaining balance in the biome.

While probiotics are becoming more familiar in the diet and supplement world, we're also learning that the role they play in the environment around us is very similar to how they work in our bodies. They lower the risk of disease in part by overcrowding pathogens—a process called competitive exclusion, by which one species steals the space and nutrients from another, thereby toppling their colonization.

Living among the community of bacteria, viruses, and fungi—called the microbiome—are probiotics, a word with Latin roots meaning 'for life.'

A Healthy Cleaning Option

Observing this mechanism has given rise to a green cleaning option that is really a spin on an ancient approach based on the lessons of nature and history. What is becoming apparent is that these environmentally safer alternatives are not only better for human health, but also able to actually infuse healing properties into our built environment—our homes, office buildings, hospitals, and schools.

In the 2016 study, scientists from the University of Ferrara in Italy measured the effects of using probiotic strains of bacillus in sanitation procedures in a hospital to counteract the growth of pathogens. It worked, plus there were no new drug-resistant infections reported in the study.

"Most importantly, they decrease the population harboring drug resistance genes, which is a global concern and which is ultimately responsible for the onset of the most severe [hospital-acquired infections]," they reported.

Despite that most of the research focused on hospitals, deadly infections can be picked up anywhere. In fact, data on particularly hard-to-treat Clostridioides difficile infections, deadly among the elderly and immunocompromised, show that about half of these infections are acquired from the community and half from hospitals.

That makes probiotic use important in any indoor space, Nonia Larsen, founder of Clearwater Cultures, told The Epoch Times.

"The microbiome is updating and adapting to help protect us against things. It's doing it in live time. The microbiome adapts faster than all life forms," she said. "I think everybody should have probiotics all through their homes."

Larsen, who has been making her own probiotic-based products for the home since 2008, said the method allows only what is toxic and unhealthy to be naturally eliminated, rather than kill off all microbes—beneficial and otherwise.

"We have to change our approach that we have, going around killing everything," she said. "We need the microbes. We need to be cleaning with them. I think this is our great hope to get back to health and sanity."

Excessive Cleanliness May Cause Illness

Too much sanitation can be problematic, according to the authors of "Dirt is Good: The Advantage of Germs for Your Child's Developing Immune System."

Jack Gilbert and Rob Knight noted research that linked excessive cleanliness to several problems and a healthy environmental microbiome to specific benefits.

- Lower rates of diseases, particularly asthma and allergies, are found in households with more diverse microbes.
- Fewer cases of allergies and less asthma are noted in households that wash dishes by hand versus using a dishwasher.
- Common allergies to dogs, cats, mold, dust and grass are less common in children who sucked their thumbs or bit their nails.

"While bleach products may be a good way of getting rid of molds and stains, use them sparingly," they wrote. "You do not need to bleach everything. If you are worried about dangerous food-borne illnesses spread over your kitchen counter, feel free to use an alcohol wipe or hot soapy water to clean the counter—you don't need to bleach it."

In fact, one study found that soap and water was just as effective as a single-strain probiotic cleaner in a hospital setting for preventing pathogens. "For general household cleaning, where antimicrobial resistance is not a factor, our study suggests it is best to use plain soaps, rather than disinfectants or probiotic cleaners," according to a 2020 article in Microorganisms.

Compelling Evidence

One of the great lessons of recent decades is that human beings and all life depend on the health of the microbial world. And just as antibiotics wipe out the microbes inside us, antimicrobial cleaners such as chlorine wipe out the microbes we depend on in our built environments.

And just like in the gut, our environment won't stand a fighting chance if good bacteria are never reintroduced. Relying on bleach for pathogen control is a bit like shoveling your driveway in the middle of a blizzard.

While it might be hard to convince the masses in a post-pandemic era to give up chemical cleaners, it's hard to argue with evidence. Here are some additional conclusions from research:

- Five Italian hospitals participated in a study replacing conventional sanitation with probiotic cleaning over a six-month period. Data were collected and compared against drug usage for patients with hospital-acquired infections. The probiotic cleaning was associated with a 99 percent decrease in antimicrobial-resistant microbes, and drug consumption associated with infections was decreased by 60 percent with associated costs down by 75 percent. Results were published in 2019 in Dove Medical Press.
- Using a probiotic cleaning solution was effective in limiting the bacterial growth of resistant bacteria in a dental clinic, where infection can be acquired through aerosols, blood, saliva, and respiratory secretions. The results were reported in 2018 in the European Journal of Dentistry.

One observation, however, from the same 2020 Microorganisms study recommended using a more diverse probiotic cleaner. That study compared soap and water to the probiotic cleaner over an eight-month period using bacteria from just one phylum, bacillus. Bacillus was chosen because it isn't an infection risk and has demonstrated antimicrobial properties.

"Such a heavy predominance of one genus in a natural environment is rare ... there is little natural precedent for this skewed monoculture biomimicry, and the ecological impacts of the probiotic approach are not yet understood," the study stated.

"To overcome the probiotic cleaner's tendency to limit microbiome diversity, and to overcome antimicrobial resistance in hospitals, we suggest that diversity in probiotic cleaners should be investigated as a contributor to competitive exclusion."

Relying on bleach for pathogen control is a bit like shoveling your driveway in the middle of a blizzard.

Fermented Probiotic Cleaner

- 1 cup lemon juice
- 1/2 cup raw apple cider vinegar
- 1/2 an orange
- Freshly filtered water (non-chlorinated), or well water
- 1/2 gallon mason jar
- Airlock lid
- Cloth cover for the jar
- Blender or food processor

Cut the orange into small pieces, and toss it into a blender or food processor, along with the lemon juice and vinegar. Blend until the orange is finely chopped.

Pour out into the mason jar, and fill to the 6-cup mark with non-chlorinated water.

Put the airlock lid on the jar.

Let sit for two weeks. You should first smell a pleasant orange smell on the airlock, and then an alcoholic orange smell.

Remove the airlock lid, and strain the liquid. Squeeze out the solids completely.

Return the liquid to the mason jar. Add more non-chlorinated water, just to return it to the 6-cup mark.

Place the cloth cap on the jar.

Let sit for 4 to 8 weeks, or until all of the alcoholic smell is gone, and the smell is more like orange vinegar.

Replace the cloth cap at that point with a storage lid, and your cleaner is ready to use.

To use as a spray cleaner, dilute with 3 parts water for every 1 part cleaner. Dilute at a 10:1 ratio for other cleaning tasks.

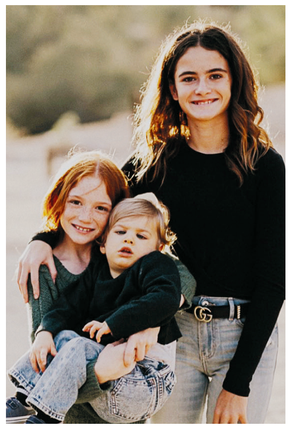
Recipe provided by FermentaCap.com

Children who grow up in an environment balanced with natural germs have healthier immune systems than those raised in more sterile environments.

COURTESY OF JASON WILLIAMS

Lucas Cote (First R) with his sister Olivia (L), mom Dr. Jenni Bush (2nd L), sister Lily, and dad Tim Cote.

COURTESY OF JASON WILLIAMS



Lucas with big sisters Lily and Olivia.

This family's story shows how persistence and faith can turn a tribulation into a testament of love.

Miracles Abound for Boy With Rare, Devastating Diagnosis

Continued from ***Page 13***

"It's been the hardest thing we've ever faced, but hard times usually bring the best things."

Just after returning home from India, where Lucas underwent two types of treatments not available in the United States, Bush shared with The Epoch Times the miracles they've already witnessed through their 2-year-old. Their incredible story offers hope not only to the 30 million Americans who suffer from rare diseases—about half of whom are children diagnosed with genetic disorders—but also to anyone who's sincere about overcoming their own poor health.

Rare Diseases Aren't So Rare

Rare diseases affect 30 million Americans—a not-so-rare conglomerate of some of the most active patients navigating the health care system. A disease is considered rare if there are fewer than 200,000 diagnoses. There are about 7,000 different rare diseases.

Although less likely to experience a good outcome, many rare disease families fight harder than people who are diagnosed with more ordinary preventable diseases. They tend to research more, understand complex medical terminology and mechanisms, and seek a closer connection with doctors taking care of their children—although a study based on interviews with parents of children with rare diseases that was published in the Orphanet Journal of Rare Diseases pointed out that they don't always find it.

The aim of publishing the interviews is to help physicians build trust with this unique group of patients and improve their bedside manner.

The article noted one parent's perspective: "If the doctor says, 'There are clinical trials. There's a chance ...' then he's your best friend. But if he says, 'There's nothing; we can't do anything. There's absolutely no way forward. Research is progressing very slowly ...' that your child has little life expectancy. Like, how do you get that into your head and take it on board? So that kind of doctor's not a good friend."

Children with rare diseases are a unique subgroup of patients because they have parents who grow their knowledge of medicine in unimaginable ways, bond with like-minded families, and work fiercely with doctors and other specialists to pinpoint a cure. The article aptly describes the relationship between parents and doctors as one built on trust, ethical values, transparency, empathy, and respect.

Parents describe their experiences as "feeling like you're in no man's land," like they've been abandoned. Gaining a sense of control may be one reason they get so involved with care. Another explanation is that parents aren't certain that physicians understand their child's disease or will advocate for the best care—something the article notes is a theme in several medical papers. This leads parents to become experts in their own child's health.

"These parents want to feel they are members of the team overseeing their children's medical care and that their needs are being met at all times," the article reads.

Lastly, the article points out that parents may harbor guilt for their child's disease, realizing that most are due to genetic factors. It can lead to parents' putting their own needs second. These feelings are vital for physicians to consider if they want to be more empathetic.

Motivated by Guilt

Bush said guilt was definitely an emotion that motivated her. Raised on a farm, she knew that exposure to pesticides and chemicals gave her more toxin exposure than the average person. Even though Lucas's disease is genetic, this concerned her.

But every negative feeling has been met with resolve, including creating the Flower Child Method—a protocol of detoxification, nutrition, and brain stimulation based on a combination of her knowledge as a chiropractor and new tools she has picked up since having Lucas. The program helps pay for Lucas's extensive care, which she said takes time, grit, tears, money, and unfortunately, a lot of travel.

Advances in medical technology have opened up new treatments for rare disease, but many are not approved for the United States.

By the time Lucas returned to the United States, his face registered excitement when his sisters greeted him at the airport—a treasured moment for the whole family.

There are about

7,000

DIFFERENT RARE DISEASES.

They've taken him on more than 30 roundtrip flights—most within the United States but the most recent one to India for 28 straight days of Cytotron treatments. It's offered the most hope so far for him to maximize the brain he has, with two more trips planned to complete treatment this year, buoyed by the countless hours of therapy and at-home exercises that laid a foundation for a brain ready to heal.

The Cytotron device—hailed as a miracle by rare disease families but only available in the United States for specific cancer treatments to improve palliative care—gives quantum magnetic resonance therapy for many diagnoses in India, from joint pain to rare diseases whose sufferers might experience some improvement in quality of life.

Cytotron Treatments

Invented by Dr. Rajah Vijay Kumar, the Cytotron machine has 88 "guns" that shoot computer-programmed beams based on age, size, gender, and disease over a targeted area. The radio frequency beams alter cell membranes to affect cell division—either halting it or starting it, depending on the desired outcome. In cases of cancer, it arrests tumor growth.

Bush first heard about it from other parents with brain-injured children and reached out to Kumar directly through social media. Lucas was approved because they believe it can create neural pathways in the brains of those with cerebral palsy, which is a sister diagnosis of PCH.

Some cases of PCH are initially mistaken as cerebral palsy, as both affect a person's balance and ability to move. PCH 2, the type Lucas has, usually shows up soon after birth with feeding difficulties due to swallowing incoordination, regurgitations, vomiting, failure to thrive, respiratory difficulties or apneas, and sleep disorders.

Neurodevelopment is severely affected. Microcephaly, which is caused by underlying cerebellar hypoplasia and undersized pons (the part of the brainstem that links the medulla oblongata and the thalamus), usually stalls development at 2 months or leads to regression later.

"We won't accept that," Bush said. "We don't keep him in a chair. We don't treat him like he's fragile. It takes the whole family. We're all on board."

Bush and Cote each took a stay with Lucas during 28 days of treatment in India, recording telling videos of miracle milestones along the way. The most noticeable changes were cognitive developments that accelerated his age by months, improved eye movement and new facial expressions with emotions, and led to less head lag and muscle spasticity. He can sit up, unsupported, for much longer.

The Cytotron's sci-fi form is validated by its rapid, painless, side-effect-free sessions that take seconds to minutes. It received the U.S. Food and Drug Administration's (FDA) approval through its breakthrough device program in 2019 for three types of cancer. The program speeds up the regular approval process for devices without compromising the process by allowing them to move to the front of the line, according to the FDA.

By the time Lucas returned to the United States, his face registered excitement when his sisters greeted him at the airport—a treasured moment for the whole family. His sister, Lily, who loves to hold Lucas, is now finally able to keep him on her lap until he falls asleep because he's not as spastic.

"He's like a baby now, not a 2-month-old infant locked in a toddler's body," Bush said. "He never cried before. He's never made an emotional expression before. It was a very weird emotion to see him cry. I wanted to make him sad again just so I could see his pouty face."

Foundational Treatments

Bush said she believes that the Cytotron treatment was so effective because of all the underlying therapy and other nontraditional treatments they've invested in since Lucas's diagnosis.

Getting Lucas off his seizure medication was an early and relatively easily achieved goal. Bush wasn't interested in watching the side effects kill her son. She has updated his timeline with instrumental treatments and health care providers on her blog.

"We fired a lot of people who told us there's no hope. Every doctor ... I asked, 'If this was your child, who would you see?'" she said. "We fill our brains with positive things and hope. People want to help. You just have to find them. You also have to find the right thing."

It started with an online course on how to help a brain-injured child that began their journey in earnest, and they learned to look at Lucas's disease as simply a brain injury without any parameters or expectations.

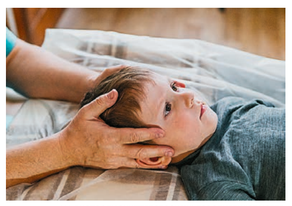
"They didn't say what change could be made, but they showed us videos of really, really brain-injured children getting better," Bush said. "I said, 'That's going to be Lucas. God is good. We're going to figure this out.' You can either wallow in your self-pity or you can make a change."

Bush said she's been assured that Lucas will one day attend school, walk and talk to the full capacity of his brain, and although it's undersized, his brain is still capable of more healing—the possibility is more than a hope for Bush.

"I know he's healed. I'm very content in that," she said. "I don't feel there's a stone unturned. We aren't searching anymore. We spent our life savings last year. God has provided everything when we need it. What else are you going to spend your money on? My faith is strong, and it's become even more strong."

Besides keeping with continued treatments and therapy for Lucas, she has her sights set on reaching more children like him. As soon as the FDA gives full authorization to the Cytotron for the United States, Lucas's family plans to purchase one that can be used for other people with rare diseases.

"We're going to purchase one for families here. That's in the future," she said. "Other kids deserve this."



Lucas Cote's mother, Dr. Jenni Bush, created the Flower Child Method, a treatment program that emphasizes detoxification, proper nutrition, and brain stimulation as a means of removing environmental toxins from the body that may interfere with proper childhood brain development.

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Breakthroughs In Lucas's Journey

Doors began to open as connections were made with other families and various brain healing experts. Some pivotal treatments were:

- Primitive reflex therapy with Dr. Robert Melillo, which helped with seizures. Melillo, author of "Disconnected Kids," uses primitive reflexes from birth to reintegrate brain balance and overcome developmental delays.
- Neurosolutions with Dr. Brandon Crawford, done both in person and at home, which is a combination of laser and light therapy with primitive reflex therapy to help Lucas with involuntary movements.
- Movement lessons for essential physical therapy. Bush credits these appointments every two weeks and daily exercises as the reason all other therapies have been met with success.
- The Mind Eye Institute with Dr. Deborah Zelinsky integrates neuro-optometric solutions in eye care. Lucas was prescribed prism glasses that opened up his visual capabilities.
- G Therapy, developed by Dr. Gunvant Oswal, is a combination of pharmacopeia-approved homeopathic and biochemic remedies with Ayurvedic lifestyle practices. Lucas met with him while in India and recently began microdosing. Some of the content of videos on Oswal's website is nothing short of miraculous.

In addition to the above treatments, Lucas has also experienced hyperbaric oxygen chamber treatment, stem cell therapy, eye patching, craniosacral chiropractic care, and feeding therapy.

Fungal Infections: Prolific, Deadly, and Hard to Treat

Fungal infections kill millions worldwide, but new treatments aren't attracting drug makers because of questions of profitability

ALLISON DEMAJISTRE

Most people think of a fungal infection as something like a yeast infection or athlete's foot—they're itchy and annoying but harmless and relatively easy to treat. However, there are various species of fungi lurking around the world, preying on people with weakened immune systems. Once these fungi enter the human body, they can resist standard antifungal drugs and often cause serious illness or death.

One type of fungus that's been getting recent media attention, Candida auris, is becoming more prevalent throughout the United States and the world, with a steadily rising death toll. It's difficult to detect through blood tests because it looks like other, more easily treatable fungal infections. Once it's identified, treatment can be challenging because of inappropriate management from prior misidentification and the infection's ability to evade and resist current drug treatments.

The people most vulnerable to these infections are immunocompromised patients such as diabetics, those with an organ or tissue transplant, people taking immunosuppressive medications, and anyone receiving chemotherapy. Candida auris is opportunistic, particularly in hospital settings, and can make its way into the body through invasive catheters, ventilators, or surgical treatments.

It's also easily spread from person to person, since it can live on skin with no symptoms, and spreads easily on hospital surfaces (e.g., beds and equipment) when they're improperly cleaned. A 2018 outbreak in an Oxford University Hospital intensive care unit in the United Kingdom was determined to be caused by multiuse equipment, including thermometers used to measure temperatures under the armpit.

Candida auris and other deadly fungal pathogens, such as Aspergillus and Pneumocystis, are responsible for at least 13 million infections and about 1.5 million deaths per year, a fatality rate similar to those of tuberculosis, HIV, malaria, and breast cancer.

Since deadly fungal infections have risen steadily over the past 50 years, with global death rates similar to those of some of the worst diseases, why haven't scientists developed effective treatments to reduce risks for immunocompromised individuals?

The answer involves scientific and economic challenges that must be overcome.

"One example of immunologic therapy for invasive fungal infections is monoclonal antibodies designed to target and neutralize fungal cells specifically.

Dr. Zeeshan Afzal, veterinarian

Antifungals

There are hundreds of different antibiotics used to treat bacterial infections, and antivirals have been increasingly effective in fighting off viruses, shortening symptoms, and boosting the immune system. But developing medications to treat fungal infections can be complicated because fungi have the same type of cells as humans, so a substance created to kill fungi may mistakenly target human cells. Many antifungals are highly potent, so if they attack human cells, they can cause kidney or liver damage, particularly after prolonged use.

Another challenge is the tendency of these fungal infections to become resistant to the few available working medications. There are several reasons why these infections can build resistance to antifungal medications.

- Medication misuse: Skipping doses, stopping therapy too soon, or using a prescribed dose that is too low can enhance the ability of the fungus to resist fungal medications.
- Fungicides: Many fungicidal drugs are used to protect crops, exposing fungi to more fungicides, inevitably creating resistance. People who work closely with or ingest fungicide-treated crops may become more susceptible to antifungal resistance.
- Transmitted resistance: One person can transmit drug-resistant fungus to another, even if they've never used an antifungal drug.
- Prolonged treatment: Some fungal infections require prolonged treatment. The longer the fungus is exposed to an antifungal drug, the more likely it will develop resistance to the drug.
- Misidentification of fungus: When a fungus is misdiagnosed and treated with the wrong antifungal, the infecting fungus can become stronger.
- Spontaneous resistance: The fungus stops responding to a previously effective antifungal medication for no known reason.

The selection of antifungal drugs is limited and becoming less effective because fungi have a sneaky way of evolving to combat current treatments.

Prospective new medicines are in development, but they require additional studies to determine whether they are safe and effective.

Immunotherapy

Immunotherapy has been used for many years to battle cancer successfully by training the immune system to find and destroy cancer cells.

Zeeshan Afzal, a veterinarian with a background in clinical science and extensive experience with fungal disease, told The Epoch Times, "One example of immunologic therapy for invasive fungal infections is monoclonal antibodies designed to target and neutralize fungal cells specifically."

Afzal said he believes that another potential approach is to use cytokines, molecules that signal the immune system to respond to these fungal infections. "Research is ongoing, and there have been some promising findings in this area."

Vaccines

There are more than 25 vaccines for fungal infection available worldwide, but none can protect vulnerable, immunocompromised patients from fungal infections.

Karen Norris, who holds a doctorate in biomedical sciences and microbiology and is a member of the University of Georgia Center for Vaccines and Immunology, is working to find a vaccine to protect against the fungal pathogens responsible for more than 80 percent of fatal fungal infections.

Researchers tested the efficacy in four preclinical animal trials. They relied on different immunosuppressed models to reflect drug regimens similar to those used with at-risk human patients such as transplant recipients and cancer patients. The vaccine effectively produced protective antibodies in each model.

"Because it targets three different pathogens, the vaccine has the potential to be groundbreaking regarding invasive fungal infections," Norris told UGA Today. Plans are underway to develop the vaccine for a phase 1 (human) safety trial.

No vaccine will be available anytime soon because human trials will likely continue for the next five years.

Pneumocystis jirovecii

can cause Pneumocystis pneumonia, a serious infection of the lungs.

Aspergillus

is a common fungus that can cause reactions in people with weakened immune systems.

Candida auris

is an opportunistic, chameleon-like, and potentially deadly fungus that is challenging to treat.

Economic Challenges

Fungal infections cost the health care system millions of dollars each year. According to research published in Open Forum Infectious Diseases, in 2018, there were 666,235 fungal infections diagnosed in the United States. The estimated hospitalization costs directly associated were $6.7 billion, with a total cost of $37.7 billion for all visits at which any fungal infections were diagnosed.

Ultimately, the fungal infections doubled the cost to the patient, the hospital stay, and the risk of death in patients considered at-risk.

Yet there is little talk among the media or government officials about solving this overwhelming problem in the United States and worldwide.

The most likely reason is that these costly and deadly fungal infections primarily target patients with compromised immunity. The death rate for this at-risk population is estimated at more than a million annually, but pharmaceutical companies may not have a financial incentive to fund research and development for efficacious drugs, therapies, or vaccines.

While the development of effective fungal treatments may reduce the cost of medical care, which is already nearly unsustainable in the United States, pharma companies are looking to profit. Dennis Dixon, who leads bacterial and fungal research at the National Institutes of Health, told Vox on March 24, "It's going to take someone to develop that tough market for this to go forward."

In Conclusion

Invasive and often deadly fungal infections continue to plague the immunocompromised across the globe. The science exists to develop better antifungal drugs, immunologic therapies, and effective vaccines. Unfortunately, antifungal drugs are expensive to develop, and patients take them for a short period of time, which means the return on investment for pharmaceutical companies is relatively poor—if it exists at all.

And there is also a pattern drug companies have seen play out after developing new antibiotics for drug-resistant bacterial infections. Often, doctors are reluctant to prescribe new antibiotics for fear of the side effects and contributing to further drug resistance, so they continue to prescribe the old drugs.

The most compelling reason for the private sector to increase funding for these therapies is the millions of lives they could save.

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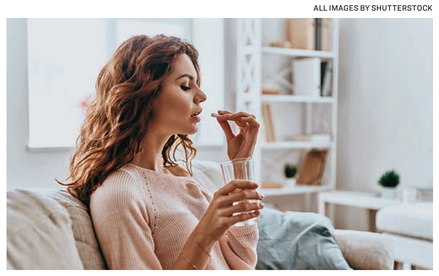

Fungi have the same types of cells as humans, so designing a medication that can differentiate between which of the two to target is difficult.

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BODY MIND CONNECTION

Anxiety Can Be Triggered by the Heart: Study

Many individuals with heart disease have an increased risk of developing anxiety disorders because of a disruption in their heart-brain axis.

Continued from ***Page 13***

The study revealed that light stimulation from the optical pacemaker activated specific proteins in the hearts of mice, leading to increased electrical signaling in the heart cells and a subsequent increase in heart rate. The mice became more anxious as their hearts beat faster, and they showed less willingness to explore open areas or look for water.

This is clear evidence, at least in mice, that increasing the heart rate can cause anxiety, suggesting that, alongside the brain, the heart may play a role in the development of emotional states.

How Does Heart Rate Variability Influence Anxiety?

The study revealed that activity in the insula—a region of the brain involved in processing emotions and bodily sensations—increased when the heart rate increased.

The researchers also found that inhibiting the insula during optical pacing reduced anxiety behaviors in mice. These results suggest that the insula plays a crucial role in transmitting information about heart rate to the brain, thereby influencing anxiety levels.

Overall, this groundbreaking study provides important insights into how specific brain structures, such as the insula, mediate anxiety-related behaviors in response to heart rate changes.

To put it another way, understanding the origin of mood and emotional states requires considering the mutual involvement of the brain and the heart.

Studies have shown that the heart communicates with the brain in four main ways: through nerve impulses, hormones, pressure waves, and electromagnetic field interactions. This communication is significant and can affect brain activity and may induce anxiety.

In clinical practice, people with cardiovascular disease often experience anxiety and related disorders, which can have a negative effect on their heart health. Anxiety has been associated with an increased risk of adverse cardiovascular outcomes and may contribute to developing and worsening heart disease.

The relationship between anxiety disorders and cardiovascular disease can be attributed to multiple factors, including autonomic dysfunction, inflammation, endothelial dysfunction, and changes in platelet aggregation.

Heart-to-Brain Communication

The brain serves as the central control system for the entire body, with numerous pathways for signals to travel from the brain to other parts of the body, including the heart. The body uses a complex network of nerves and feedback loops to constantly communicate with the brain.

These nerves act as tiny messengers, collecting information about our internal and external environment, including what we see, smell, touch, and taste. Once this information reaches the brain, it's processed and combined with other sensory stimuli and memories, resulting in our perception of the world. This means that the colors we see, the scents we smell, and the flavors we taste are all products of our body's ongoing conversation with the brain.

Studies have shown that the heart communicates with the brain in four main ways: through nerve impulses, hormones, pressure waves, and electromagnetic field interactions.

30%
OF ADULTS
will suffer an anxiety disorder at some point in their lives.

How Does the Heart-Brain Axis Regulate Anxiety?

The "heart-brain axis" refers to the two-way communication and interaction between the heart and the brain.

The heart is more than just a pump; it has its own internal nervous system that can perceive and respond to its environment independently of the brain. This axis has been shown to play a crucial role in regulating a wide range of physiological and psychological processes, including mood and anxiety.

Recent scientific research has discovered that the heart sends more information to the brain than the brain sends to the heart, highlighting the intricate nature of their communication, which appears to be more complex than initially believed.

It has also been discovered that the intrinsic cardiac nervous system can function independently of the central neuronal command. This finding adds to our understanding of the complexity of the heart's function and its relationship to the brain.

Anxiety activates the sympathetic nervous system, which can cause an increase in heart rate, blood pressure, and respiratory rate. This activation can sometimes lead to changes in the heart's electrical activity, potentially resulting in irregular heartbeats or arrhythmias.

The heart-brain axis is critical in regulating this anxiety response. According to research, when the heart functions properly, it sends signals to the brain that reduce anxiety and stress. This is accomplished by releasing anti-anxiety hormones, such as oxytocin and vasopressin.

Anxiety is widely acknowledged as a very complex condition, influenced by many factors that vary significantly from one person to another. The heart-brain axis is just one system involved in the body's response to stress.

When the heart doesn't function properly, as in the case of heart disease, it may contribute to an imbalance in the heart-brain axis, increasing the risk of anxiety and other mental health disorders.

In short, the heart-brain axis plays a crucial role in regulating anxiety. When the heart is unhealthy, there may be an increased risk of anxiety and other mental health conditions. Conversely, a healthy heart reduces anxiety and stress.

Many organs in the body communicate with the brain through various "axes," including the stomach-brain axis. Scientists refer to the brain's constant perception of signals from within the body, including those from the respiratory, gastrointestinal, and cardiovascular systems, as interoception. Interoception is a vital part of our subconscious that can include emotions and thoughts.

Diagnosis and Symptoms of Anxiety

Anxiety disorders are diagnosed based on specific criteria, as described in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM). It defines anxiety as excessive worry and apprehensive expectations that occur on more days than not for at least six months and involve several events or activities, such as work or school performance.

According to the DSM, to meet the diagnostic criteria for generalized anxiety disorder, a person must experience that excessive worry and at least three of the following symptoms:

- restlessness or feeling keyed up or on edge
- being easily fatigued
- difficulty concentrating or mind going blank
- irritability
- muscle tension
- sleep disturbance, such as difficulty falling or staying asleep, or restless and unsatisfying sleep

Many of the above symptoms of anxiety are contributed to by subconscious feelings.

How to Alleviate Anxiety

Anxiety disorders are the most common mental disorder, affecting almost 30 percent of adults at some point in their lives. Fortunately, anxiety disorders are treatable, and many effective treatments are available. Treatment can help most people lead productive lives. The Stanford study discovered how a racing heart could lead to anxious behavior and provided insights into current strategies for treating anxiety.

Heart Rate Variability Biofeedback

Heart rate variability (HRV) biofeedback is a popular technique that provides real-time feedback on heart rate and respiration changes while instructing people to breathe in a controlled manner. It has shown promise as an intervention tool for anxiety and depression.

In a study published in Frontiers in Neuroscience, researchers found that using HRV-biofeedback can increase heart rate variability by 18 percent and decrease heart rate by 5.2 beats per minute. This leads to changes in a broad functional network of brain regions, including the amygdala, which controls emotions, and the insula.

It has also been suggested that HRV-biofeedback can restore the inner balance of the autonomic nervous system (the part that controls automatic functions) and reduce inflammation.

Anxiety activates the sympathetic nervous system, which can cause an increase in heart rate, blood pressure, and respiratory rate.

Having difficulty falling asleep or staying asleep can be a symptom of a generalized anxiety disorder.

Heart rate variability biofeedback is a popular anxiety treatment that involves controlled breathing while recording changes in heart rate and respiration. Studies have found that it can decrease heart rate and promote relaxation.

Mind-Body Practices

Mind-body practices, including yoga, tai chi, mindfulness meditation, and relaxation techniques, have increasingly been studied for their potential to alleviate anxiety symptoms.

The current body of research suggests that these practices may be effective as a treatment for anxiety, either as stand-alone interventions or in combination with conventional therapies such as medication and psychotherapy.

Studies have shown that yoga can reduce anxiety symptoms associated with generalized anxiety disorder, panic disorder, and post-traumatic stress disorder.

Tai chi has been found to positively affect anxiety symptoms, including reduced levels of stress hormones and improved mood.

EMMA MORLEY/THE EPOCH TIMES

Mindfulness meditation can reduce symptoms of anxiety and depression and may be particularly effective for individuals with anxiety disorders.

Relaxation techniques, such as progressive muscle relaxation and deep breathing exercises, have also been effective in reducing anxiety symptoms, including panic disorder, anxiety disorder, and social anxiety disorder.

While more research is needed to fully understand the mechanisms and efficacy of mind-body practices for anxiety treatment, the current evidence suggests that these practices may be helpful tools in managing symptoms of anxiety and improving overall well-being.

However, it's important to note that mind-body practices shouldn't be used as a substitute for conventional treatments but rather as a complementary approach to be used in conjunction with other evidence-based treatments.

ALL PHOTOS BY SHUTTERSTOCK

It can be deeply unsettling to find yourself behaving in unwelcome ways around certain people—over and over again.

MINDSET MATTERS

When You Keep Getting Triggered by the Same Person (Part 1)

Dealing with a relationship that brings you back to old–and unwelcome–feelings and behaviors

NANCY COLIER

Jane, a client, was heading out to see her stepfather. She had described him as someone who talked incessantly about his importance and the remarkable things he'd accomplished (a lot of which weren't true). At the same time, he'd never expressed curiosity in Jane or followed up on anything she shared. He often spoke about issues on which Jane was far more an expert than he was, yet he never acknowledged her expertise—and certainly never asked for her input.

In her stepfather's presence, Jane described feeling like she didn't actually exist as a real person who had her own life. As she painfully explained, "He's never actually used the word 'you' in a sentence, referring to me; it's as if there's no me at all, or certainly not one worthy of interest."

Getting swept up in old patterns can leave us feeling helpless.

In the four decades she'd known him, he'd never said anything nice or remotely complimentary, not about her, her kids, the life she'd created, or who she'd become. There had been one argument between them, years back, during which her stepfather had spewed all sorts of negative things he thought of her and her "behavior" over the years.

While he seemed to know almost nothing about her, it was clear that he had long carried an extensive and ugly narrative about her. As Jane succinctly put it, "I've never felt like I'm with someone who actually likes me."

But Jane's mother had passed away, as had her biological father, and both of her husband's parents were gone, too. Jane continued the relationship with her stepfather because she wanted a grandparent for her children. And indeed, her stepfather would show up a few times a year for her children, to bring presents for holidays, which Jane appreciated since there was no one else to provide that role.

Jane was conflicted; she wanted the relationship with him for her kids, but she was also aware that every time she was in his presence, she felt shut down, frustrated, enraged, and helpless. No matter how grounded and confident she felt going in, she knew, after decades of lived experience, that being with him would feel dreadful and poisonous.

She would feel unloved, irrelevant, misjudged, and dismissed. At the same time, she would feel cut off from anything remotely authentic in her. Her words would come from anger and resentment, rage at being ignored and simultaneously misinterpreted.

She would also feel aggressive, as if she were injecting herself into a space where she wasn't welcome. She also knew that, regardless of how she tried to stay open, her heart would close up immediately, without asking for her permission. She would enter a physiological state of self-protection and survival—fight or flight.

Even when she was aware, she still felt unchangeable and profoundly sad. She knew too that it would take a day or two for this toxic residue to pass through her. There was no way around it—whatever emotional trauma was retriggered in his company had to be digested by her nervous system, heart, mind, and body before she could feel entirely free once again.

Over the years, Jane had tried countless strategies to change her experience: psychological, spiritual, physical, practical, and everything else. She wanted, understandably, to find an approach, attitude, practice, technique, frame, mantra, rosary, anything—she even tried changing her attire once—to make it less painful and dysregulating to be with this highly triggering person.

After years of therapy and hundreds of self-help books, she was still looking for a way to feel less defended, hurt, and enraged—and more like "herself" in his company, like who she was with everyone else in her life.

Ultimately, Jane was fighting with her own nervous system and with reality—a fight we never win.

What made matters worse is that Jane blamed and shamed herself for not being able to control how she felt in his company. At 52 years old, she felt she should be able to manage the relationship in an easier and more mature manner, that the whole thing should be less disruptive and traumatic for her. She took the fact that it didn't get easier as a failure and further evidence of her immaturity.

How do we stop shaming and blaming ourselves for feeling the same way we've always felt around certain people, even after we've fundamentally changed in so many other ways?

Her self-blame was then echoed by her partner, who responded to her suffering by asking her, "Isn't there a time when you just let it go and move on?" And, just as unhelpfully, he reminded her that she already knew all this about her stepfather and the kind of person he was, so she shouldn't be surprised or bothered by it.

So then, how do we get out of this cycle—endlessly seeking strategies to fix our experience and make it different from how it is? And, furthermore, how do we stop shaming and blaming ourselves for feeling the same way we've always felt around certain people, even after we've fundamentally changed in so many other ways?

In part two of this series, I'll offer a new frame for what moving on and letting go can mean, and I'll suggest new strategies for taking care of yourself when emotional trauma is your reality.

Nancy Colier is a psychotherapist, interfaith minister, thought leader, public speaker, and the author of "Can't Stop Thinking: How to Let Go of Anxiety and Free Yourself from Obsessive Rumination," "The Power of Off," and the recently released "The Emotionally Exhausted Woman: Why You're Depleted and How to Get What You Need" (November, 2022.)

INTENTIONAL LIVING

Why You Need a Personal Definition of Success

Putting a stake in the ground can be the difference between compounding your efforts and being rootless

MIKE DONGHIA

In the past five years, there are many areas of my personal life in which I've been stagnant or even lost ground in my development.

I've learned the hard way that there are no guarantees that growth will take place, even if you're relatively young. It's certainly the case that in my late 20s I expected to develop in significant ways over the next five years, but that expectation doesn't mean much without a plan.

The fact is, I had many plans, but I didn't have a clear vision for what I was going after. I wanted everything equally, and so, in a very real sense, I wanted nothing in particular. I had vague ideas of what success would look like, but mostly I spent those five years bouncing around between different visions of my future, chasing whatever seemed most interesting in the moment.

I wanted everything equally, and so, in a very real sense, I wanted nothing in particular.

Of course, plans are fragile and there's nothing wrong with changing paths. Circumstances change, and we often need to change with them. Even our best plans will need to bend with the unpredictable ways that our life unfolds. But our definition of success should be something above our path that provides an overall trajectory for which to aim our efforts and weigh our plans.

Why is it important to define your personal definition of success as early in life as possible? I can think of at least three reasons, based on my failure to do so sooner.

3 Reasons You Need a Personal Definition of Success

If you don't define success for yourself, you'll absorb a definition from others.

From time to time, I become enamored of the lifestyle of some interesting person I learned about. And while it's great to be inspired by others, and even take ideas from their lives, it's less helpful to constantly jump from one vision of your life to another without a core vision of your own.

If you don't choose what success means, you'll be pulled in a million directions.

Without a core identity, and a definition of success that drives you, every new idea you hear becomes "the answer" to your problem. A fear of missing out can then drive you to shift your energies in an entirely new direction.

If you don't put a stake in the ground, you'll never know whether you've made progress.

The trouble with all of this shifting and changing directions is that you don't exactly know where you're going, and you have no way of measuring whether progress is being made. It's quite OK to change your values, but if that makes you rootless, it can become hard to ensure your efforts compound into something meaningful.

4 Ways I'm Defining Success in My Life Going Forward

In the next five years, I hope to channel much of my restlessness into a sustained effort in one direction. I hope there will be all sorts of surprises, adventures, and even unexpected opportunities along the way, but I want to be more anchored in the specific types of success I'm hoping to achieve.

To me, success means:

- Having positive, emotionally rich connections with my wife, kids, and friends nearly every single day. I want to be able to look back and have happy memories with the people I love in each season of life.
- Being on a trajectory on which my perception of the mystery, power, beauty, and goodness of God are growing stronger with age. While these realities are true to me now, they are easy to ignore or devalue compared with the urgency and vividness of everyday life. I don't want to see my spiritual muscles wither, but rather grow into a source of joy in my later years.
- Investing in my health and well-being to the extent that each version of myself (50-year-old me, 70-year-old me, etc.) feels that I was a good steward of my body. I realize that health is never guaranteed, but it would make me sad to know I failed to invest in the thing that becomes more valuable than anything else as we age and when it's under strain.
- Fighting hard against the tide of boredom and complacency by finding work to do that I find intrinsically motivating and genuinely good. Knowing myself better now than I ever have, I realize that curiosity and lifelong learning must be a central part of my life if I am to thrive and keep growing. This means I might occasionally pick up a new activity, but the thread that ties my paths together will be a growing curiosity and a refusal to coast along with minimal effort. Whatever I do, I will do it with all my might.

Creating a personal definition of success ensures you will invest your time and effort in something meaningful and satisfying.

GROUND PICTURE/SHUTTERSTOCK

That's where I'm planning to go in the next five years. I hope I will learn from my mistakes and successes along the way.

Mike (and his wife, Mollie) blog at This Evergreen Home where they share their experience with living simply, intentionally, and relationally in this modern world. You can follow along by subscribing to their twice-weekly newsletter.