

MIND & BODY

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IMMUNE CONFUSION

Research suggests COVID-19 vaccine boosters are training our immune system to mount a weak response to future versions of the virus.

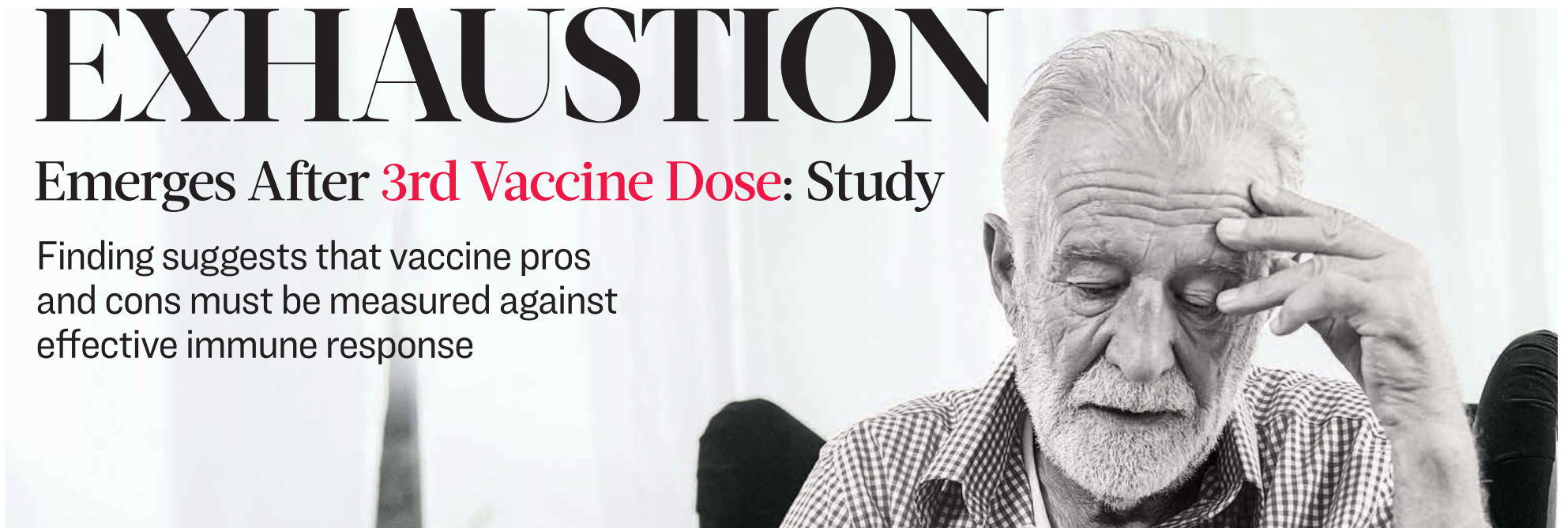


COVID-19 VACCINE

IMMUNE EXHAUSTION

Emerges After 3rd Vaccine Dose: Study

Finding suggests that vaccine pros and cons must be measured against effective immune response



SEAN LIN & MINGJIA JACKY GUAN

Vaccines have been upheld as the best strategy for dealing with infectious diseases, but that's largely because of a limited understanding of the immune system and how to best complement and support its function. Our bodies are normally able to separate the wheat from the chaff when it comes to invading pathogens or when a vaccine stimulates

an immune reaction, but there are factors that can compromise that.

A study published in *Science Immunology* in January 2023 (but first submitted in August 2022) shows that incremental doses of the mRNA COVID-19 vaccine boosters may be one such factor, based on how they train our immune systems. In this case, the immune system seemed to gain a false sense of security from dealing with the booster version of the vaccine, which is supposed to teach the immune system how to deal with the

virus. Unfortunately, in this case, it seemed that the immune system has learned that it doesn't need to mount a strong counterattack. Worse, the vaccine boosters might not even induce any effect in people at high risk of severe infection.

IgG Subtype Composition Changed After Vaccination

According to the study, the third dose of the mRNA vaccines seems to be linked with a class switch in subtypes of immunoglobulin G (IgG),

80%

Of our antibodies are typically immunoglobulin G, a potent agent of our immune system that has four subcategories.

the dominating serum antibody in our immune system, which raises the question of immune exhaustion. Class switching is when B cells redirect their efforts toward producing IgG. To start, they produce generic immunoglobulin cells such as IgM. But once they find that the invading pathogen is tougher than they thought, they switch to producing the more effective IgG to ward off the infection.

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Major Colonoscopy Study Delivers Unexpected Results

Study casts doubts on benefits of population-wide colonoscopies for colorectal cancer

YUWEI ZHANG

Although many view a colonoscopy as an uncomfortable or even scary procedure, 17.7 million of them are carried out annually in the United States, and

60.6 percent of people aged 50 to 75 without a personal history of colorectal cancer have had one in the past 10 years.

It's believed that a colonoscopy not only helps find cancer but also prevents cancer from developing from polyps. Because of its high level of sensitivity and specificity, colonoscopies have been regarded as the gold standard for colon cancer screenings

for a long time.

Unexpected Result From a Major Colonoscopy Study

However, a recent major clinical study, the Nordic-European Initiative on Colorectal Cancer (NordICC) study published in October 2022, raised questions about the efficacy of colonoscopies.

The study suggested that colonosco-

pies don't save as many lives as previously thought.

Researchers recruited 84,585 participants in Poland, Norway, Sweden, and the Netherlands; 28,220 were in the invited group (invited to have a colonoscopy), and 56,365 were in the usual-care group.

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Research Reveals Coffee's Preventative Powers

Coffee reduces risks of Type 2 diabetes, liver disease, cardiovascular disease, and more

GEORGE CITRONER

About 1 in 10 Americans are living with diabetes, and between 90 and 95 percent of them have Type 2 diabetes. Compelling evidence suggests that increasing your coffee intake could lower your risk for this condition.

Coffee May Prevent Type 2 Diabetes

A large study from Harvard University looked at the coffee habits of more than 100,000 people for about 20 years.

Researchers found that people who increased their coffee intake by one cup more per day experienced an 11 percent lower risk of eventually getting Type 2 diabetes.

People who reduced their coffee intake by one cup per day, on the other hand, saw their risk of developing diabetes increase by 17 percent.

"These changes in risk were observed for caffeinated, but not decaffeinated coffee, and were independent of initial coffee consumption and four-year changes [during the study period] in other dietary and lifestyle factors," the study authors wrote. Research published in 2012 found that moderate coffee consumption (three to five cups per day) was associated with a 25 percent reduced risk of Type 2 diabetes.

These findings build on research from 2009 that found an association between increased coffee drinking and reduced risk of Type 2 diabetes.

A systematic review and meta-analysis of studies found that drinking coffee can

help our bodies to burn more fat, which addresses a big risk factor for Type 2 diabetes: being overweight.

"In our analysis of 94 studies with 105 independent groups (984 participants), CAF [caffeine] ingestion significantly increased fat metabolism," the study authors wrote.

"This is likely due to the presence of antioxidants and other beneficial compounds in coffee," Dr. Michael Green, an OB/GYN at Winona, a female-founded anti-aging wellness center and OB hospitalist and site director for OBHG at Northridge Medical Center in Northridge, California, told The Epoch Times.



Drinking your morning coffee can make you more alert and lower your risk of chronic disease.

Coffee Slashes Type 2 Risk for Women With Gestational Diabetes

Compared with the general, healthy female population, women who have experienced gestational diabetes may have a 10-fold increased risk of developing Type 2 diabetes. Drinking coffee may lower this risk, according to scientists at the Global Centre for Asian Women's Health at the National University of Singapore.

In December 2022, The American Journal of Clinical Nutrition published the findings of a 24-year-long study that looked at more than 4,500 women, mostly white, with a history of gestational diabetes, to compare long-time coffee consumption with risk.

Women who drank two to three cups of coffee decreased their risk by 17 percent, and those who drank one cup or less experienced a 10 percent reduced risk, the study found.

Decaffeinated coffee didn't have similar benefits, but the study noted that relatively few women preferred it, which could be why no link was detected.

Taking any drug, even caffeine, during pregnancy or while breastfeeding could present risks. The U.S. Food and Drug Administration (FDA) recommends talking to your doctor about whether you should limit your caffeine intake.

Reduces Risk of Common Diabetes Complications

Type 2 diabetes can increase our risk of eye problems and cardiovascular and kidney disease.

A meta-analysis found that the more coffee that participants with Type 2 diabetes reported drinking, the lower their risk of experiencing mortality associated with cardiovascular disease. However, researchers did emphasize that more research is needed regarding the type of coffee, whether sugar and cream were added, and participants' history of cardiovascular disease to present more confident results.

Researchers investigated the relationship between coffee consumption and the decline in kidney function in patients with Type 2 diabetes.

They looked at 3,805 patients with an average age of 64 years (2,112 men, 1,693 women) with Type 2 diabetes and found higher coffee consumption reduced the risk of declining kidney function. Compared with no coffee consumption, those drinking two or more cups per day saw greater risk reduction.

Diabetic retinopathy is a condition affecting blood vessels in the back of the eye. It can cause vision loss and blindness in people living with diabetes. A recently published scientific report evaluated the association between diabetic retinopathy prevalence and coffee consumption within a Korean population.

Researchers analyzed data from 1,350 participants with Type 2 diabetes who underwent diabetic retinopathy examination to find that those who drank two or more cups of coffee per day had lower odds of developing the condition compared to those who didn't drink any coffee.

"Coffee has [also] been shown to improve cognitive function and boost alertness, which can benefit people with Type 2 diabetes who may experience fatigue and lack energy," Green said.

Coffee Reduces Risk of Liver Disease in People With Type 2 Diabetes

Type 2 diabetes can significantly increase the risk of liver disease, particularly non-alcoholic fatty liver disease (NAFLD).

Often, NAFLD is a "silent" condition, with few or no symptoms. Composed of different disorders of the liver caused by

the accumulation of fat, it can cause liver scarring and cancer.

A new study found that coffee could reduce the severity of NAFLD in people who have Type 2 diabetes and are overweight.

Researchers surveyed 156 overweight, middle-aged participants, of which 98 had Type 2 diabetes, about how much coffee they drank. They also collected daily urine samples that were used to measure caffeine and noncaffeine metabolites, which are natural byproducts resulting from the digestion of coffee.

Findings show that those with higher coffee

consumption, as indicated by urine samples, were much less likely to experience liver disease.

The researchers concluded that caffeine and plant-based micronutrients called polyphenols, found in coffee, may contribute to reducing the severity of NAFLD.

Drink Moderately

Of course, too much of anything, even something that's otherwise healthy, can cause problems. Coffee is no different. The FDA cautions that, for healthy adults, about 400 milligrams per day—or four or

five cups of coffee, is an amount not "generally associated" with dangerous, negative effects.

"For the most part, as long as you consume coffee moderately, there are no major health concerns," Dr. Sreenivas Gudimetla, a cardiologist at Texas Health Fort Worth and Texas Health Physicians Group, told The Epoch Times.

To find the studies mentioned in this article, please see the article online at TheEpochTimes.com



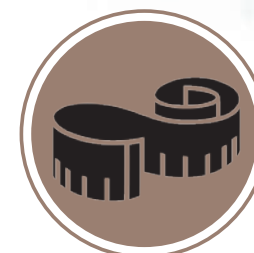
COGNITIVE FUNCTION

Coffee can improve cognitive function and boost alertness.



ANTIOXIDANTS

The antioxidants in coffee can counteract free radicals.



WEIGHT LOSS

Coffee can help you lose excess weight, a risk factor for diabetes.

Those with higher coffee caffeine consumption, as indicated by urine samples, were much less likely to experience liver disease.

25 PERCENT

Moderate coffee consumption (3 to 5 cups per day) can reduce diabetes risk by a quarter.

A Book That Has Inspired the World



"I have indeed experienced all the miracles. No matter what your experience or what background you have or what country you are born in, you will benefit from Falun Dafa.

Martin Rubenis
OLYMPIC ATHLETE

"Falun Gong has taught me how to be considerate of others and how to improve my relationships by handling conflicts constructively. [...] It has given me incredible relaxation, mental clarity, and freedom from stress.

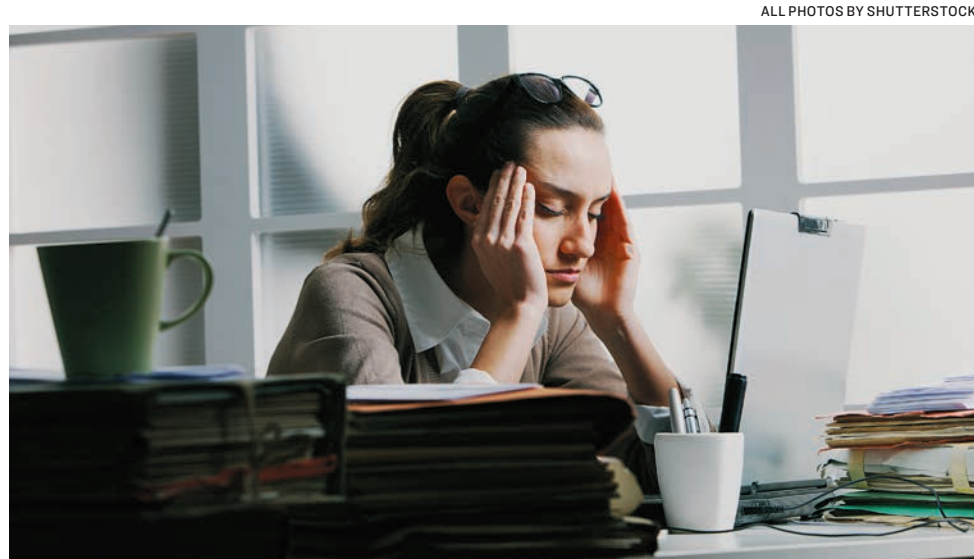
Shiyu Zhou
PH.D., USA

Zhuang Falun is the main text of Falun Gong (also called Falun Dafa). The book expounds upon profound principles of Truthfulness, Compassion and Tolerance. It addresses the long-forgotten term "cultivation," the origins of illnesses, karma, the role of moral character on a path to spiritual perfection, and more.

The book was a national bestseller in China in the 1990s, and has been translated into over 40 languages. Find out why it has captured the hearts and minds of tens of millions of people in over 100 countries worldwide!

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If you're feeling worried or anxious, it can activate your sympathetic nervous system and contribute to constipation.

Top 10 Causes of Constipation and 7 Eating Habits to Avoid It

AMBER YANG & ALICE ZHU

Dry, cold weather can be a factor in constipation, according to traditional Chinese medicine. In addition to aggravating the flow of daily life, constipation can also lead to various diseases.

Teng Cheng Liang, superintendent of Chi Teh Medical Clinic and Cheng-Liang Medical Clinic in Taipei, Taiwan, explained the various causes of constipation and introduced methods of food therapy and acupoint massage to stimulate healthy bowel movements.

Teng says that according to the medical definition, having less than three bowel movements per week is considered constipation and can have a significant impact on one's health.

Chronic constipation causes an accumulation of toxins in the intestines and excess carcinogens to be absorbed by the

body. It also increases the risk of various other conditions, such as acne, depression, and an elevated risk of heart disease, to name just a few.

People with constipation are more prone to developing hemorrhoids, anal fissures, stress urinary incontinence, diverticulitis, and other ailments. A diverticulum is a bulge tissue on the intestinal wall. If stool falls into the diverticulum, it can cause inflammation of the diverticulum, resulting in sepsis—a life-threatening illness.

Some people worry about not eliminating for one or two days. Teng pointed out that as age increases, the peristalsis and absorption strength of the stomach and intestines weakens, causing difficulty in elimination. He recommended that people stay relaxed when trying to move the bowels and said there's no need to take medicine for missing just one or two days. Relying on drugs or laxatives can

cause extreme reactions, such as alternating diarrhea and constipation.

Main Cause of Constipation

Teng pointed out that the main reason for constipation is slow peristalsis. The small intestine absorbs nutrients and the large intestine absorbs water. When bowel movement is too slow and food stays in the large intestine for too long, the stool becomes dry, hard, and difficult to eliminate.

In addition, when the intestine absorbs water too quickly, constipation can occur.

Constipation is also closely related to the function of the peripheral nervous system. The speed of peristalsis is related to the sympathetic nervous system and parasympathetic nervous system. The sympathetic nervous system makes peristalsis slower, and the parasympathetic nervous system makes peristalsis faster.

For example, the sympathetic nervous system of a patient may be activated because of anxiety over having a medical exam, and they may experience constipation as a result. After the exam is finished, the system returns to normal. Emotional excitement, such as when traveling, also activates the sympathetic nervous system, adding to the possibility of constipation.

Conversely, feeling unhappy, upset, or having negative emotions activates the parasympathetic nervous system, which makes the bowel move faster and causes diarrhea.

Emotion and Constipation

In traditional Chinese medicine (TCM), constipation is called the excess syndrome of the stomach, that is, excessive yang qi (vital energy) in the intestines. According to the theory of intestinal dynamics, people with strong yang qi in the intestines have slow peristalsis, thus their levels of anger are also relatively greater, and they're prone to constipation. Therefore, people who are energetic in general are more prone to constipation.

Vice versa, those with fast peristalsis will consume yang qi easily and, because of the lack of essence qi (vital energy), feel tired, don't like to drink water, feel depressed, and don't care about their surroundings.

The traditional Chinese medical book "Yellow Emperor's Inner Canon" describes the stomach as "the nutrients of qi and blood." TCM believes that the organs in the body are nourished by the spleen and the stomach and that the stomach controls the yang qi of the whole body.

Teng pointed out that even if patients are seriously ill, as long as they have a good appetite, they won't die easily. On the contrary, if the patients can't eat, their condition is very dangerous.

Top 10 Causes of Constipation

- Endocrine dysfunction: When the thyroid is underactive, mucus and edema are produced to slow down bowel movements.
- Diabetes: Due to vascular problems, intestines become sensitive and gastrointestinal motility deteriorates, resulting in alternating constipation and diarrhea.
- Uremia: A condition in which high levels of waste are stored in the blood affecting the kidney.
- Colon or rectal cancer: Tumors block the intestines.
- Irritable bowel syndrome: Constipation is caused by the activation of sympathetic nerves due to tension and anxiety.
- Diverticulosis: Diverticula are too large, affecting peristalsis.
- Taking drugs that act on the nervous system: clozapine (Clozaril, Versacloz, FazaClo ODT)
- Spinal cord injuries.
- Multiple sclerosis: This leads to abnormal nervous conduction, affecting peristalsis.

- Imperforate anus: The anus is too small and requires surgical correction.

Causes of Constipation for Parkinson's Patients

Teng said patients with neurological diseases, such as Parkinson's, are prone to constipation, with some patients only eliminating once every 7 to 10 days. He said that there are two major reasons why Parkinson's patients are prone to constipation:

1. Stiffness of the whole body muscles, including the stiffness of gastrointestinal peristalsis.
2. Patients must take Levodopa for hand tremors, which inhibits smooth muscle peristalsis and makes constipation worse.

Clinically, the more severe the constipation experienced by the patient is, the more severely the patient suffers from tremors.

Doctors of Western medicine usually prescribe laxatives to treat constipation, but the side effect is diarrhea, which makes people feel fatigued. The goal of TCM is to increase peristalsis to aid in the expulsion of toxins.

Eating Habits to Lessen Constipation

In addition to constipation caused by disease, other causes of slow peristalsis can be related to diet, such as overeating high-calorie foods and insufficient fiber. Alcohol also slows down peristalsis.

Teng pointed out that people with constipation should cultivate the following seven habits:

1. Drink enough water.
2. Drink fewer caffeinated beverages.
3. Avoid alcoholic beverages.
4. Eat more fruits and vegetables.
5. Eat more high-fiber foods.
6. Eat less high-fat foods, such as milk.

To avoid constipation, it's necessary to eat more foods that can help with healthy elimination. Eating more vegetables and fruits with high fiber, such as apples, strawberries, high-fiber grains, beans, and so on, can help stool pass through the colon quickly. Drinking at least eight glasses of water per day will also assist in healthy elimination.

TCM food therapy for treating constipation:

- Wu Ren Wan (tea pills): a TCM herbal remedy to clear heat, lubricate intestines, and invigorate blood.
- Rehmannia tea: Rehmannia is cool, moistening, and invigorating to the kidney. In addition to relieving constipation, it's also beneficial in improving insomnia and high blood sugar.
- Cassia tea: suppresses appetite, reduces gastrointestinal heat, and aids in weight loss.

Acupoint Massage to Prevent Constipation

Teng also suggested that people suffering from constipation should massage acupoints related to the stomach, such as the "Earth pivot point" and the "leg three li point" on the calf and "joining valley point" on the hand, which can help with elimination.

Best Times for Bowel Movements

TCM believes that the 12 meridian system of the body corresponds to the 12 two-hour periods (ancient time measurement system in China). The meridian of the large intestine circulates from 5 a.m. to 9 a.m., the meridian of the stomach circulates from 7 a.m. to 9 a.m., and the meridian of the spleen circulates from 9 a.m. to 11 a.m.

Teng pointed out that in the morning, qi and blood are concentrated in the digestive system and gastrointestinal motility; therefore, it's the best time to head to the loo.

COVID-19 VACCINE

Immune Exhaustion Emerges After 3rd Vaccine Dose: Study

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IgG is an important serum antibody that makes up roughly 80 percent of all antibodies in our immune system. After class switching occurs, B cells release different types of IgG instead of other less-effective immunoglobulin cells. Depending on the severity of the infection, the ratio of IgG may also vary.

IgG is the more effective fighter in our immune system, as it has the ability to opsonize and fixate complements, meaning that it attaches to infected cells or pathogens and instructs killer cells to swallow intruders up through phagocytosis. It's also the only antibody that crosses into the placenta, playing a critical role in protecting the unborn fetus.

However, IgG is split up into four major subtypes—denoted IgG1 through IgG4—and each has its own strengths and limitations.

Of all four, IgG1 makes up most of serum IgG, as it has the best immune properties. Along with IgG3, these two are the most potent members of the IgG family.

IgG4 is considered one of the weakest types, as it doesn't do as well in attracting immune cells responsible for eliminating invaders.

Research shows that IgG4 composition usually hovers at about 4 percent, a number matched by the aforementioned study for patients after five months of receiving the second dose of vaccine.

Right after the second dose, IgG4 levels were at 0.04 percent while IgG1 and IgG3—the most potent members in the IgG family—made up 96.55 percent of all IgG, according to the aforementioned Science Immunology paper.

This change in IgG levels indicates that the body interprets the second dose as a serious infection and produces the more effective IgG to tackle the simulated infection. However, things look a little different after the vaccine booster shot.

In the study, the percentage of IgG4 in the blood serum rose to unexpectedly high levels after the third dose. Ten days after the third vaccination, IgG4 levels rose to 13.91 percent and jumped to 19.27 percent



Researchers warn that vaccines, especially boosters, fail to have a significant effect on the immunocompromised—the very group of people especially susceptible to severe disease and death.

The immune system will always place warding off outside intruders at the top of its to-do list while keeping efficiency in mind.

five months after. At the same time, IgG1 and IgG3 levels both dropped, showing a significant change in blood serum antibody composition.

This isn't good, as higher levels of IgG4, without the ability to stimulate immune cells, could indicate immune exhaustion. It's also an indication that the immune system intentionally dampened the response starting with the third dose of the vaccination.

On the other hand, although IgG3 and IgG1 contribute the most to immune mechanisms, the downside is that they're costly to produce and can quickly wear out the body. In contrast, IgG4 isn't as effective but it's more economical to produce.

The immune system will always place warding off outside intruders at the top of its to-do list while keeping efficiency

in mind. This is why the amount of each IgG subtype produced varies with each infection.

In the Science Immunology study, high IgG4 levels after the third dose, even a long time after it, indicate that the immune system is being worn out through the repeated vaccination course. The body treats the third dose with more indifference and deploys the less effective IgG4 in response.

This development of more IgG4 than usual is unhealthy and riskier for people if they encounter the real virus later, as COVID-19 can develop into a rather severe disease, especially for people with chronic conditions. If the body begins to treat the SARS-CoV-2 vaccine like a boy crying wolf, then what if the real virus comes knocking at the door?

participation—only 42 percent underwent colonoscopy—and provides no information on adherence to guidelines for polyp surveillance.

Most think the study doesn't change the value of colonoscopies. The test would've lowered cancer risk by 31 percent and cut the probability of dying from colorectal cancer by 50 percent if compliance had been 100 percent, according to the research findings.

Also, the tested countries have a higher mortality rate and incidence rate compared to the United States. U.S. clinicians favor colonoscopies, while European health systems rely far more on flexible sigmoidoscopy, which only examines the lower part of the colon.

However, countries without screening programs still witnessed improvements in colorectal cancer mortality. A comment on the findings published in The Lancet Oncology stated that firm conclusions can't yet be drawn on the causal relationship between colon cancer mortality and national screenings.

Second, the operator affects the colonoscopy's effectiveness. The adenoma detection rate is the percentage of screening colonoscopies in which one or more adenomas are found.

Patients are better protected from adenoma development by endoscopists with higher adenoma detection rates.

Third, the study was done among European populations and may not be representative of the various demographics in the United States.

Major Colonoscopy Study Delivers Unexpected Results

Continued from Page 1

At the end of the 10-year follow-up, the risk of colorectal cancer-related death at 10 years was 0.28 percent among participants in the invited group and 0.31 percent in the usual-care group. The risk of death from any cause was 11.03 percent in the invited group and 11.04 percent in the usual-care group.

In terms of adverse events, 15 people had major bleeding after polyp removal. According to the study, there were no screen-related deaths within 30 days after colonoscopy.

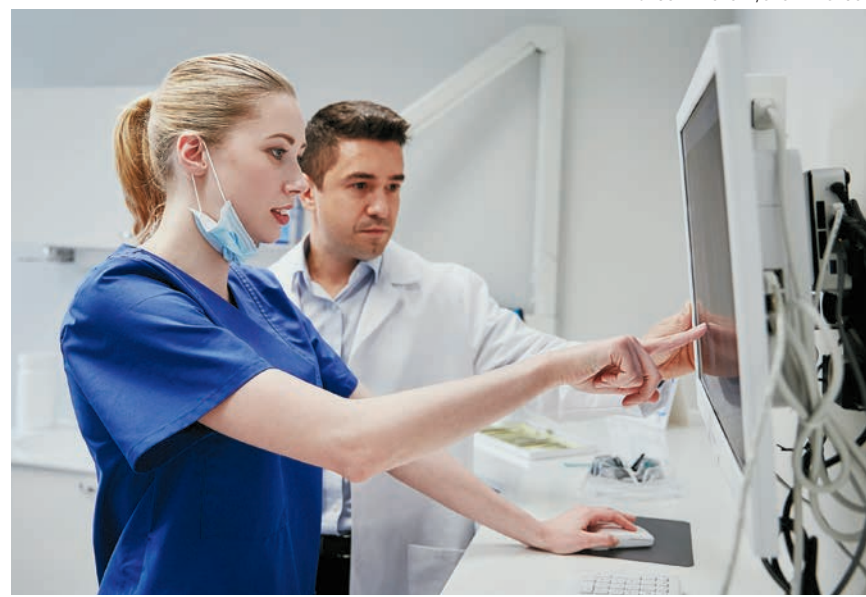
The incidence of colon cancer has dropped significantly since 1975. Most people believe that this is due to increased screening and improved treatment.

Since there were no randomized clinical trial data on colonoscopies for colorectal cancer before, the NordICC trial sparked a heated discussion: Can colonoscopies truly prevent colon cancer?

If the benefit isn't what people have expected, the colon cancer-screening landscape could be totally reshaped.

The Study Invokes Intense Debate

Numerous doctors argue that NordICC's researchers should maintain follow-up in their study, and assessments of other cur-

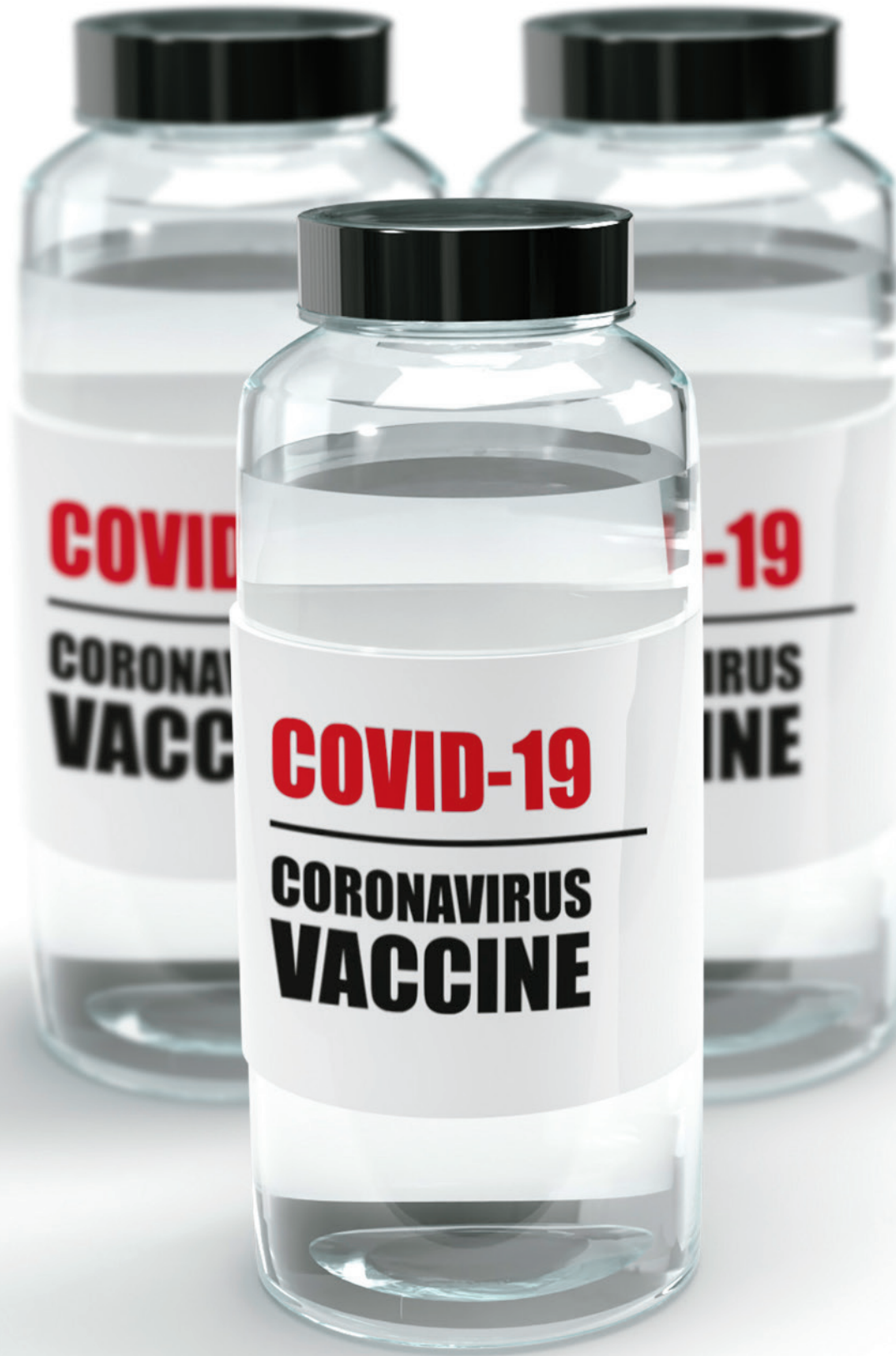


rent trials may shed light on the advantages of screening colonoscopies after 10 years. Follow-up time is very important, as many believe that the benefit of a colonoscopy is treating precancerous polyps. It may be decades before we see the long-term benefit of colonoscopy screenings.

Doctors perceive the results of the NordICC study differently for the following reasons.

First, the trial had lower-than-expected

▲ A colonoscopy is intended to find cancer or polyps that may turn into cancer.



DELOAN BRUNNEN/ISTOCK/GETTY IMAGES/ALAMY



IgG

Immunoglobulin G is the more effective fighter in our immune system, because it attaches to infected cells or pathogens and instructs killer cells to swallow intruders up through phagocytosis.



COVID

If the vaccine booster doesn't stimulate an effective immune response, it may leave us ill-equipped for an actual COVID-19 variant.

The vaccine is meant to train the immune system's memory cells so that the next time something similar comes along, they know how to quickly defend the immune system. This process is also called antibody acquisition. The aforementioned study demonstrates that the body stops regarding COVID-19 as a serious viral infection after the vaccine booster shot. However, in some people, the boosters actually have no effect at all.

Antibody Acquisition Rates 'Extremely Low' for Organ Transplant Recipients, Studies Show

One group of people who might gain the least from vaccination seems to include those who are immunocompromised, such as organ transplant recipients—people who regularly take immunosup-



Those most at risk from COVID-19 would be wise to support their immune system through a healthy lifestyle.

pressants as a part of post-operational procedures.

A study published in Nature shows that antibody acquisition rates against COVID-19 were "extremely low" in kidney transplant patients. This finding contradicts the purpose of the vaccine, as it's meant to induce antibody acquisition.

Similar reports have also surfaced elsewhere, especially in regard to newer variants of COVID-19. An observational study claiming to be the largest when analyzing four-dose vaccinated organ transplant recipients shows that the mRNA vaccine booster demonstrates a "lack of formal neutralization" against "variants of concern including Omicron."

Data published by Elsevier also shows that antibody neutralization against the Omicron coronavirus variant has seen a 15- to 20-fold reduction when compared with the wild-type virus in transplant recipients. These findings are of grave concern.

The U.S. Centers for Disease Control and Prevention still recommends that immunocompromised people receive a COVID-19 vaccine, as well as get their vaccine boosters.

According to data published in the medical journal Transplantation, during the recent Omicron wave, although COVID-19 cases have increased for organ transplant recipients, the death rate of this population has dropped fivefold.

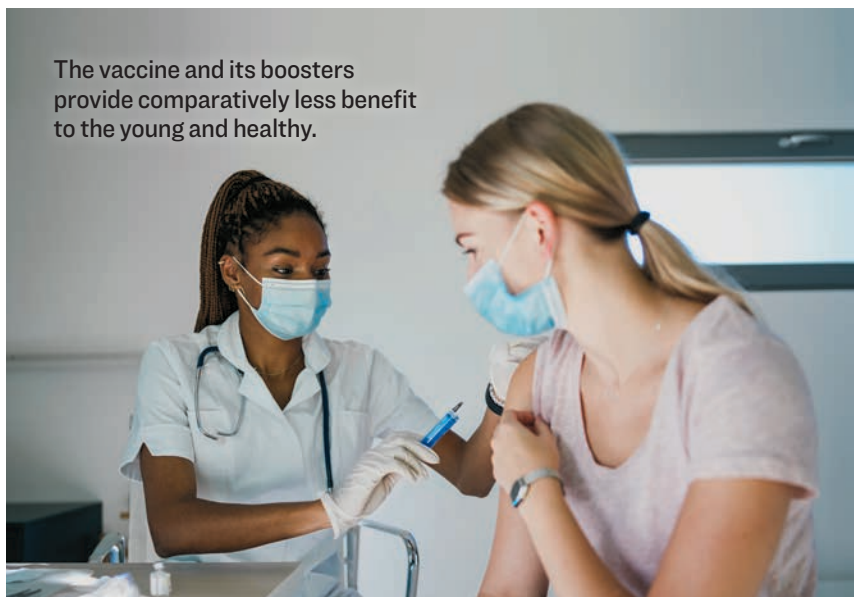
However, is this reduction due to repeated vaccination or to the reduced pathogenicity of Omicron variants? Is it really effective to drive vaccination campaigns for the immunocompromised, based on the trifling level of antibody acquisition? Can the benefits of repetitive boosting outweigh the increased risk of side effects?

It's really time to reconsider what place the COVID-19 vaccines should take. Are we underestimating the wisdom of our immune system? This stance is similar to that taken in a previous article that

The body treats the third dose [of the vaccine booster] with more indifference.

mentions how "negative efficacy" should have stopped vaccine recommendations in their tracks.

Now, researchers are saying that vaccines, especially boosters, fail to have a significant effect on the immunocompromised—the very group of people especially susceptible to severe disease and death. We need to stop placing the mRNA shots on a pedestal and consider all options in response to SARS-CoV-2, such as focusing on bolstering our natural immune system and holistic well-being.



The vaccine and its boosters provide comparatively less benefit to the young and healthy.

A Boost, or Setback?

High IgG4 levels after the third dose of the vaccine indicates that the immune system is being worn out.

It can also mean the body stops regarding COVID-19 as a serious viral infection.



For a person with a family history of colorectal cancer, it might be more beneficial to keep a close look and a healthy diet.

likely. To avoid the chance of harm, or if you can't tolerate a colonoscopy, some studies have proven that a fecal immunochemical test for screening patients at increased risk for colorectal cancer has high overall diagnostic accuracy, given its safety, simplicity, low cost, accuracy, and minimal discomfort.

We still need better data on a colonoscopy's benefits and risks. To account for comorbidities, oncological treatments, stage-related differences at the time of diagnosis, family history, and other risk factors, additional in-depth patient-level data are required.

Ideally, when a patient sees a doctor, the doctor would provide him personalized advice; for example, "Mr. Smith, your chance of getting colorectal cancer is X percent based on all the information you've provided."

However, there are many uncertainties in life. Even in the way you cook, what ingredients you use, and how they were processed—it's hard to digitize such factors, as there's no single model to predict a person's risk. Tailoring colorectal cancer screening approaches to each person based on their risk factors and precision screening may improve the efficiency and cost-effectiveness of colonoscopy screening.

17.7

MILLION

colonoscopies are carried out annually in the United States.

Dr. Yuwei Zhang has 20 years of experience in oncology and health care. Her paper on esophageal cancer is one of the top10 cited papers in the field. She regularly gives talks at universities, has been invited to review manuscripts for top-tier medical journals, and has contributed to the successful launches of top-performing drugs.

Depression Might Originate in Your Gut

Stress and depression affect hormones and the nervous system, but it can all begin in the gut

HEATHER LIGHTNER

Did you know that gut health may be an important tool in fighting depression? Researchers are learning more about the gut-brain connection and how we might harness this relationship for better mental health.

The Gut-Brain Connection

There's a name for this connection: the gut-brain axis.

According to a chapter in "Translational Bioinformatics and Systems Biology for Understanding Inflammation," the gut-brain axis is a bidirectional communication system between the central nervous system and the gastrointestinal (GI) tract, also known as the enteric nervous system or "second brain." It's also the largest part of the autonomic nervous system. Its circuitry allows it to coordinate gastrointestinal functions and plays an essential role in maintaining equilibrium within the body, including the brain.

Jeremy Appleton, a naturopathic physician who has researched the gut-brain axis, says our gut microbiome and its connection with our brain have a significant effect on every part of the body.

"Every system in the body seems to be influenced by the quality of our microbiome and also the quality of that interface where those bacteria reside in us," he explains. "It's definitely a symbiotic relationship that we have with them."

The gut microbiome can alter the function of the enteric nervous system by activating stress pathways in the brain. The process can also happen in reverse.

Stress and depression can disrupt the gut's microbiome through stress hormones, inflammation, and changes within the autonomic nervous system—which regulates involuntary processes in the body such as heart rate, blood pressure, respiration, and digestion. These changes can cause gut bacteria to release substances that can affect our eating behavior and mood.

Alternately, gut bacteria can increase stress responsiveness and increase the risk of depression.

According to the chapter mentioned above, animal studies have found that the gut microbiome is an important factor behind mood, pain, cognition, and obesity. It's an interesting relationship that may provide important clues into various neuropsychiatric diseases including schizophrenia, autism, and affective disorders (such as depression and bipolar disorder).

Our gut microbiome also makes a group of chemicals called short-chain fatty acids when they break down fermentable, resistant starches (prebiotics), and some dairy products.

Short-chain fatty acids are believed to play a major role in gut health and in regulating neuro-immunoendocrine functions. The neuro-immunoendocrine network is comprised of the nervous system, endocrine system, and immune system. These systems work together and use neurotransmitters, hormones, and cytokines (proteins that can stimulate the immune system or slow it down) to keep the body in balance.

These acids are also thought to play an important role in microbiota-gut-brain communication. Changes in short-chain fatty acids have been linked to depressive symptoms and GI symptoms. They may additionally affect the way our brain works and may be used to help treat brain disorders in the future.

Short-chain fatty acids can also cross and reinforce the integrity of the blood-brain barrier to protect the brain from inflammation, increase the production of new neurons, contribute to the synthesis of serotonin, and improve neuron function.

All of this has an impact on our behavior, Appleton says.

"There are all kinds of implications. Not just for mood, but also for neurologic conditions like autism and serotonin metabolism, and how that is all affected with major depression," he says.

Depression and Dysbiosis

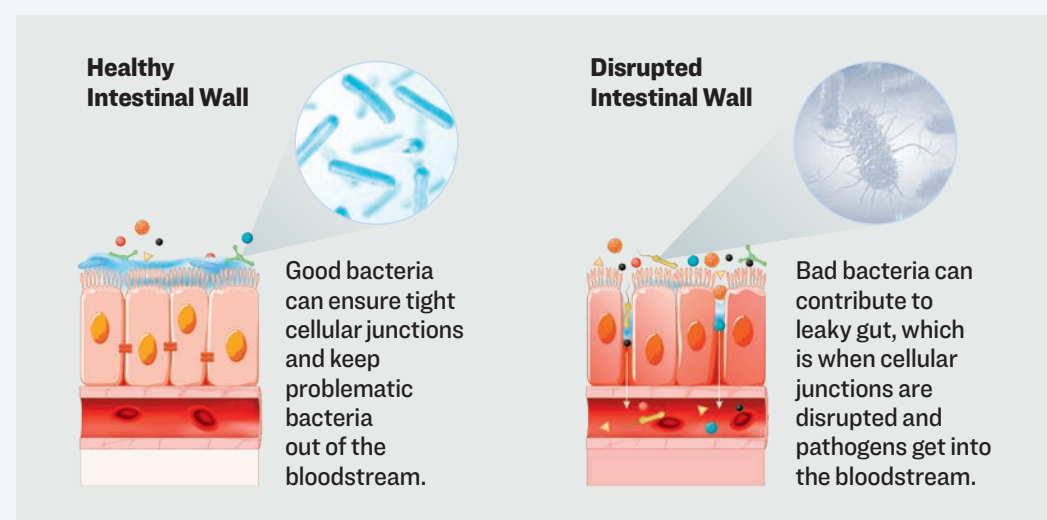
Dysbiosis occurs when there's an imbalance in the body's normal gut microbiome. This



95

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of the serotonin in the body isn't from the brain, "it's from the gut," says Jeremy Appleton, a naturopathic physician who has researched the gut-brain axis.

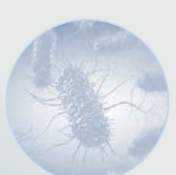


Healthy Intestinal Wall



Good bacteria can ensure tight cellular junctions and keep problematic bacteria out of the bloodstream.

Disrupted Intestinal Wall



Bad bacteria can contribute to leaky gut, which is when cellular junctions are disrupted and pathogens get into the bloodstream.

3 Breathing Exercises

to Calm the Brain, Reduce Stress, and Cure Anxiety

When you breathe correctly, you pump cerebrospinal fluid into the brain to reduce stress and cure anxiety.

You've probably heard the expression, "just breathe through it" or "take a deep breath." When a situation is stressful, breathing deeply and evenly can help to relieve anxiety and reduce stress. Why is that so? There's a very important link between feeling calm, nasal breathing, better sleep, and brain health.

In Taoist philosophy, it's taught that "the wise man/woman breathes from his/her heels." Physically speaking, this phrase is a reference to the fact breathing deeply into the body is incredibly good for health. Today, research is revealing how breathing affects the brain.

The human brain is surrounded by a crystal-clear liquid called cerebrospinal fluid (CSF). CSF carries oxygen and nutrients to brain cells while removing waste products. Recent studies using magnetic resonance imaging show a link between CSF flow and breathing.

In this article, we'll explore the process of breathing and how it affects the brain.

Cerebrospinal Fluid—The Brain's Life Blood

Perhaps the most important fluid in your body is the 250ml of cerebrospinal fluid that flows around a system of pipes in the

brain called the ventricles. Cerebrospinal fluid is produced by the choroid plexus in the third ventricle, and from there, it circulates through the brain via the ventricles and then to the spinal cord.

Each day, the entire volume of CSF is replaced four times. During sleep, the blood-brain barrier relaxes to let CSF into the neurons and flush out the buildup from the day. This is a big reason why sleep is so important.

How Breathing Affects the Brain and CSF

A good night's sleep is easier said than done for some, but there are ways to get better sleep by breathing consciously. Breathing influences CSF flow dynamics by changing pressure in the chest. Recent studies have shown how breath can affect the flow of CSF directed through the ventricles of the brain. This is important because you need to make sure your brain gets as much CSF as possible.

If you sleep badly or wake up feeling tired or anxious, then it might indicate a sleep disorder. Conditions such as snoring, sleep apnea, and other issues are known to affect CSF flow to the brain.

Studies show that pressure in the chest influences the pressure in vessels such as arteries and veins. It was previously thought that changes in CSF flow responded to arterial pressure during deep

inhaling, however, it was recently discovered that the direct change of pressure in the chest during breathing is likely responsible.

Diaphragmatic breathing affects the pressure of the veins around the thoracic vertebrae (located in the mid-back), and the veins in the chest respond to these changes in pressure by pumping CSF into the spinal cord.

Breathing Shifts CSF via Pressure in Chest Veins

The veins around the chest vertebrae column transmit pressure upward to the brain. They make up a sprawling network of tiny veins that extend up into the epidural venous system of the spinal canal called the venous plexus.

During inhalation and exhalation, the chest rises and falls. The change in pressure flows upward to the CSF dynamics around the brain. Here's how it works:

Breath in (inspiration or inhalation): lowers chest pressure and empties the venous plexus. CSF flows down the spine.

Breath out (expiration or exhalation): increases chest pressure and fills the venous plexus, pushing CSF up the spine into the head.

As you can see, breathing conducts a rhythm of flow of CSF up and down the spinal cord.

Prebiotics to Feed Your Microbes

Eating certain kinds of high fiber foods will also feed the beneficial microbes in your body.



Chicory root has the prebiotic fiber inulin.



Garlic feeds Bifidobacteria bacteria.



Onions are versatile and rich in inulin.



Leeks are also rich in inulin.

Probiotics Recolonize the Microbiome

Good quality fermented foods will have live cultures of the beneficial microbes you may be lacking in your gut.



Cottage cheese offers probiotic protein.



Kimchi is a probiotic-packed flavor saver.



Quality yogurt has live cultures.



Tempeh is a unique probiotic protein.

happens for a variety of reasons, including infection, diet, exposure to antibiotics, exercise level, and sleep patterns. It's believed to trigger inflammation and dysregulation of the immune system.

Leaky gut also can disrupt the gut microbiome. It occurs when the tight barrier within our intestines develops cracks or holes and allows partially digested food and toxins to penetrate other tissues.

Numerous studies have shown a connection between the disruption of the gut microbiome and depression. Research has demonstrated that the gut microbiome is linked with the production of serotonin and its precursor, tryptophan. Serotonin is a chemical that transmits messages between nerve cells in the brain and the body. It's involved in mood, sleep, cognition, digestion, and other processes. Low levels of serotonin are associated with depression.

Ninety-five percent of the serotonin in the body isn't from the brain, "it's from the gut," Appleton says.

It's also been suspected that the neurotransmitter GABA may be affected by our microbiome. GABA blocks signals between nerve cells in the brain and the spinal cord. Decreased levels of GABA may contribute to the development of depression and mood disorders.

One study involved the transfer of fecal matter from depressed humans into microbe-deficient rats, causing depressive-like behavior in the rats.

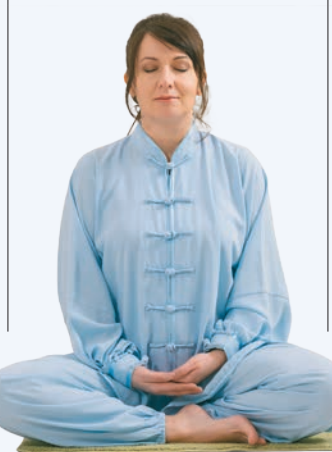
Another study published in December 2022 in Nature Communications compared the fecal matter of 1,054 participants with depression against a cohort of 1,539 subjects. The study made an association between 13 types of bacteria and depressive symptoms. Each bacterium is known to be involved with the synthesis of key neurotransmitters, suggesting that the gut microbiome is an important causal factor in depression.

Heal Your Gut, Heal Your Mind

Healing your gut and your mind require interventions that address both sides of the complicated gut-brain connection.

According to Appleton, research into the

Movement, meditation, yoga, tai chi, quality sleep, meaningful social interaction, having fun, and finding joy also can help manage stress and consequently help the gut.



gut-brain axis has exploded in the past 15 to 20 years; unfortunately, the "lessons learned" are rarely applied by most practitioners.

"In terms of depression, it's something that we still in mainstream medicine, we just really aren't looking at when we're talking about moods," he says. "We're not looking at the health of their gut—it still hasn't become intuitive for us."

Appleton says that instead of just prescribing drugs or supplements to address depression, clinicians should look at dysbiosis and/or evaluate for leaky gut syndrome "as part of the standard operating procedure."

A holistic approach to treating depression is the best approach, Appleton says. He says he wouldn't tell a patient not to take an antidepressant; however, if medication is the only treatment, "you're going to touch part of the problem, but you're not going to treat the whole problem."

Angelo Pezzote, who holds a doctorate in pharmacy and is a board-certified psychiatric pharmacist and clinical mental health counselor, marries the two professions with mind and body and works almost as a psychiatrist would.

Although Pezzote assists prescribers with medication recommendations, his focus is less on medications and more on "nutritional psychiatry"—he works with clients to replenish and enhance the gut microbiome through methods such as lifestyle changes, stress reduction, exercise, and healthy eating.

Pezzote says that while some people do need medication, many may be overmedicated or rely on medication as their "one and only answer" for depression.

"I think for a lot of patients, they're just used to 'here, take this pill and you're going to feel happy' and that's just not the way reality is. A lot of people on their antidepressants still feel sad and they need more than just a pill."

Appleton agrees.

Managing stress is a major component of healing the gut. Pezzote says that stress "throws off" the immune system, causing inflammation, which is linked to depression and other mood disorders. Through managing stress, you can manage stress hormones that influence the gut microbiome.

"It's really stress that gets people off balance," Pezzote says.

Movement, meditation, yoga, tai chi, quality sleep, meaningful social interaction, having fun, and finding joy also can help manage stress and consequently help the gut.

Eating a plant-rich diet is very important in maintaining a healthy gut microbiome, given that the gut microbiome loves fiber and prebiotics—things we can't digest.

Probiotic foods include chicory root, garlic, onions, and leeks.

Pezzote recommends a plant-rich diet, incorporating low-fat dairy, limiting processed meat and red meat, as well as refined sugar and flour, and increasing whole grains, healthy fats, and complex carbohydrates.

Probiotics can also help improve the gut microbiome. They can be found in foods including kefir, yogurt, kimchi, tempeh, and other fermented foods and probiotic supplements. Since probiotic supplements aren't regulated by the U.S. Food and Drug Administration, it's important to choose probiotics that have a quality seal from a third-party inspector.

Pezzote recommends choosing a multi-strain probiotic that includes Lactobacillus for best results. As always, speak with your physician before starting a probiotic supplement.

Clinical evidence indicates that probiotics can improve symptoms in those suffering from Major Depressive Disorder. A clinical trial conducted in the Netherlands showed "significantly reduced overall cognitive reactivity to sad mood" after four weeks of probiotics. Other studies have replicated these results, indicating that probiotics may be an important tool in the fight against depression.

"If I had MDD or major anxiety disorder, I would be going top down and bottom up. It makes a lot of sense given the bidirectional nature of the gut-brain axis," Appleton says.

Pezzote says healing the gut and treating depression cannot be solved with one intervention only.

"It's like the spokes on a wheel: One spoke doesn't balance the wheel. It's all the spokes," he says. "And we need not just medication, we need a bunch of things to go along with that as necessary in order to have good, healthy, balanced microbiomes."

Easy Breathing Tips for Better Sleep, Stress Reduction

Now that we know how breathing bathes the brain in CSF, it's important to know that how you breathe during your waking hours will be reflected in your breathing pattern while you sleep. Priming your body for good breathing during sleep may help nourish the brain in CSF.

For better sleep and a healthier brain, and to reduce stress and anxiety, practice the following breathing exercises.

Step 1: Deep Breath to Reduce Stress

- Lay on the floor with two hands over your stomach.
- Seal the tongue firmly to the roof of the mouth, seal the lips, and breathe deeply through the nose.
- Breathe deeply into the diaphragm. Your hands should rise as the stomach expands. Breathe in for 4 seconds.
- Exhale slowly for 8 seconds.
- Continue for 30 breaths and repeat 3 times.

Step 2: Expand Your Breathing Capacity

- Repeat the steps above, and when you

reach your capacity, make a conscious effort to extend your breathing.

- Lengthen the exhale to 10–12 seconds.
- Feel the rush of CSF to your brain. As you expand you feel comfortable in slow, deep breathing.

Step 3: Improve Your Spinal Posture

Remember, CSF moves up the spine into the brain as you breathe. Your spinal posture will influence that pathway. Here's an exercise to increase core mobility with standing qigong. Hold the following posture for two minutes:

- Draw the body's weight to the middle of the feet, slightly away from the heels.
- Extend your arms in front of the body.
- With every breath as the chest expands, shift your body weight forward, taking additional weight off the heels.
- To balance the forward motion, extend the spine and stretches through the heels.



Cerebral spinal fluid circulates from ventricles in the brain to the spinal cord.

- Ensure the downward stretch and forward motion are exactly balanced so that there's no visible movement of the heels.
- To an observer, the heels appear to touch the ground, but internally, they're engaged in a downward stretch with each breath.
- Feel the stability of the spine and visualize CSF flowing up the spine.

Your brain depends on deep breathing patterns to help bathe it in cerebrospinal fluid. Using your diaphragm to maximize pressure shifts in the chest cavity will help to boost the flow of CSF to the brain.

4 Ways to Fight Cognitive Decline Without Medication

These lifestyle choices can help keep your brain in fighting form into your elder years

GEORGE CITRONER

The aging process doesn't just affect how well we're able to get around, it will eventually change our ability to remember and learn new things. This could be slowed or prevented without medication by making simple changes to your diet and lifestyle.

Previous research has found that vascular dementia (caused by poor blood circulation), which accounts for 15 to 20 percent of dementia cases in North America and Europe, is related to metabolic diseases.

These conditions are often associated with being overweight or obese. So researchers looked at the most effective way to cut calories to see if this affected vascular dementia risk.

They settled on intermittent fasting. This involves restricting when you eat instead of what you eat. Intermittent fasting as a way to restrict calories has been shown to be more effective in reducing weight and fat compared to conventional dieting.

A 2019 review indicates intermittent fasting can reduce neuroinflammation and DNA damage and improve vascular function. The authors stated that intermittent fasting could be an effective dietary approach to reduce vascular dementia risk, prevent its onset, and ameliorate its pathology.

Another study found intermittent fasting even reduced the risk of developing Alzheimer's disease.

Methods of intermittent fasting include:

- "Leangains" protocol, which involves eating for eight hours and fasting for 16 hours between feedings
- The eat-stop-eat protocol, which involves fasting for 24 hours once a week
- The 5:2 diet, which is eating only 500 calories on two nonconsecutive days of the week and then normal eating for the other five days

Exercise, Even for 6 Minutes
We know that exercise offers amazing health benefits, and there are many training options to choose from—nearly all of which will improve health and preserve cognitive abilities to some degree.

But time constraints prevent many people from even attempting to incorporate fitness into their daily routine.

The most recent research finds only six minutes of high-intensity exercise could extend the lifespan of a healthy brain and delay the onset of neurodegenerative disorders

Only six minutes of high-intensity exercise could extend the lifespan of a healthy brain and delay the onset of neurodegenerative disorders like Alzheimer's and Parkinson's disease.

26 PERCENT

About 26 percent of those classified as socially isolated developed dementia, compared to less than 20 percent of those who weren't.



Lifting weights is a good way to get fresh blood flowing to your brain.

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Nothing supports brain health better than physical exercise—except perhaps outdoor exercise with friends.

like Alzheimer's and Parkinson's disease.

Scientists discovered that a short but intense bout of cycling can significantly increase the production of a protein called brain-derived neurotrophic factor (BDNF), and that could protect against age-related cognitive decline. BDNF promotes the survival of neurons and the brain's ability to form new connections and pathways.

Interestingly, they also found that intermittent fasting had no effect on BDNF production.

"The next step is to show that as well as improving this biological marker of brain health, these very brief exercise sessions improve cognitive functions like memory, attention, and speed," neuroscientist Henry Mahncke, who holds a doctorate in neuroscience and is the CEO of Posit Science, developers of BrainHQ, told The Epoch Times.

The types of exercise recommended are different at each stage of Alzheimer's disease so as to fit what a person is capable of engaging in, he said.

Healthy people could do more independent exercise.

"A cognitively healthy older adult might engage in running or swimming," Mahncke explained, "and a person with Alzheimer's or dementia might engage in a group movement or activity class."

"You're never too old—but scientists would agree that starting earlier will help you more."

Be Social, Build Relationships

Social isolation is a known dementia risk factor that's linked to other serious health conditions such as heart disease and depression.

According to recent research from Johns Hopkins University, socially isolated older adults have an almost 30 percent increased risk of developing dementia than older adults who are more socially active.

Johns Hopkins researchers defined social isolation as having few relationships and few people with whom to interact.

This was measured based on whether participants lived alone, spoke about important matters in the past year with two or more people, or attended religious services or social events.

They were assigned a point for each item,

and those scoring zero or one were classified as being socially isolated. Participants were routinely given cognitive tests over a nine-year period.

About 26 percent of those classified as socially isolated developed dementia, compared to less than 20 percent of those who weren't.

A 2022 study found isolated, middle-aged people showed lower gray matter volumes (brain mass) in temporal, frontal, and other regions of the brain.

"Given the high prevalence of both social isolation and dementia among residential/nursing home residents, our estimate of the social isolation-dementia association may be an underestimate of the association in the general population of older adults," the study authors concluded.

Quit Smoking, Sooner Rather Than Later

Middle-aged smokers are more likely to report memory loss and confusion than nonsmokers, but the risk of cognitive decline is lower for those who have quit, even if it was recently, a study from Ohio State University finds.

This is the first time that researchers have examined the relationship between smoking and cognitive decline using a one-question self-assessment.

"The association we saw was most significant in the 45-59 age group, suggesting that quitting at that stage of life may have a benefit for cognitive health," senior study author Jeffrey Wing said. "A similar difference wasn't found in the oldest group in the study, which could mean that quitting earlier affords people greater benefits," the study authors said in a statement.

The prevalence of subjective cognitive decline for smokers in the study was nearly twice that of nonsmokers. But among those who had quit less than 10 years ago, the prevalence was only 1.5 times that of nonsmokers.

Underscoring the long-term benefits of quitting, participants who stopped smoking for over 10 years before the survey had a subjective cognitive decline prevalence only slightly greater than nonsmokers.

"These findings could imply that the time since smoking cessation does matter, and may be linked to cognitive outcomes," lead study author Jenna Rajczyk said in a statement.

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FASTING

Combats Cancer, Enhances Chemotherapy: Current Research

Several studies have found fasting starves cancer even as it helps cells weather the effects of chemotherapy

FLORA ZHAO

On Sept. 10, 2020, Fred Evrard, age 48, was diagnosed with stage 3 colon cancer. The tumor in his body reached about four inches in length.

As a strong, athletic martial arts instructor—with a healthy diet and lifestyle—the news came as a shock.

Overwhelmed and in excruciating pain, he lay in bed for three days without eating or drinking.

Three days later, Evrard was back on his feet ready to fight.

He began reading all about cancer and natural treatments. He found case after case of successful recovery and cancer reversal through fasting. These findings prompted him to try it himself.

Evrard embarked on a 21-day fast. His desire to live pushed him forward.

After 21 days of fasting, his MRI image showed a miracle: The length of the tumor on his colon had shrunk from four inches to less than 2 1/2 inches, and its diameter had also shrunk significantly.

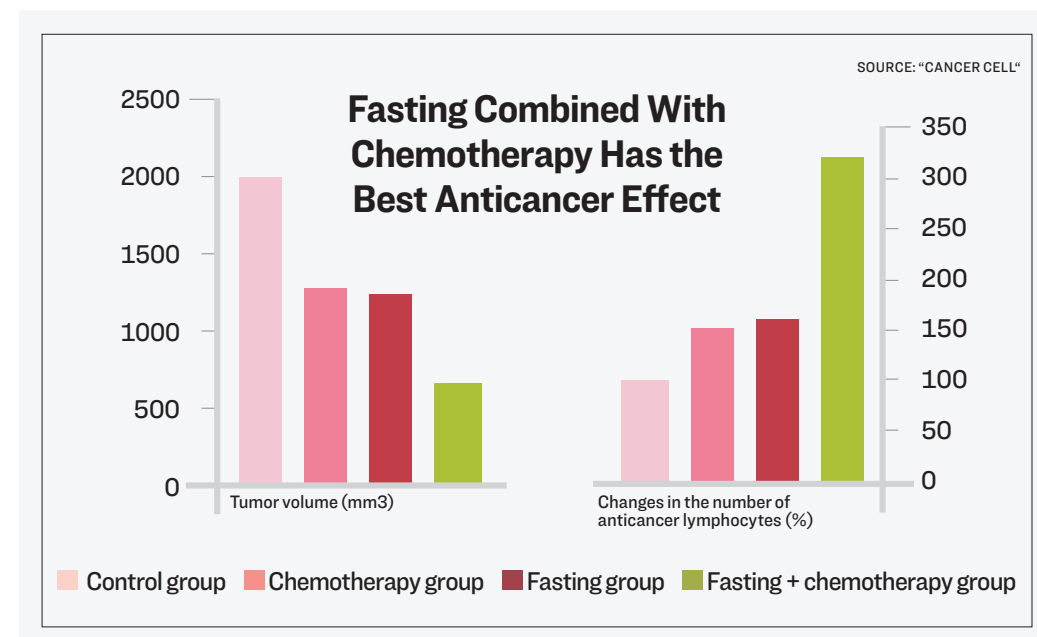
With his fast over, he adopted a ketogenic diet, or more precisely, a carnivore diet. This was because he couldn't eat anything with fiber because of severe intestinal inflammation. During that period, he also adopted intermittent fasting and ate only one meal per day.

During his battle with cancer, Evrard underwent three chemotherapy sessions. Fasting helped reduce the negative effects of chemotherapy so much that he hardly suffered side effects such as hair loss, nausea, or extreme fatigue. The immune indicators in his blood were also normal. During the second chemotherapy session, he tried to stop fasting and experienced severe side effects. He fasted again during his third chemotherapy session and achieved great results.

On Jan. 2, 2021, he started a five-day fast and a two-day ketogenic diet on weekends to complete the second round of a 21-day fast.

On Jan. 10, 2021, four months after being diagnosed with cancer, he underwent another MRI scan and blood test.

Continued on Page 12



Animal experiments have shown that fasting combined with chemotherapy has the best anticancer effect.



Diet control can slow or even stop tumor growth in laboratory mice, as well as delay cancer recurrence.

Top Professor Ousted After Linking Acetaminophen to Autism

Controversial research forces an influential scientist to take another route to investigate drug toxicity

JENNIFER MARGULIS & JOE WANG

Immunologist and biochemist William Parker is a well-spoken, well-published academic who's famous for being on time with every deadline. He was part of the research team that discovered the function of the

appendix as a harbor for beneficial bacteria. Working with different surgeons over the years, he would examine transplanted tissue to look for immune markers, train undergraduates and medical school students in the scientific method, and teach students how to set up experiments.

Despite his outstanding record as both an instructor and a scientist, Parker—who's only 57 years old—was forced to retire from his long-standing position. He was a professor and scientific researcher at Duke University's medical school for almost 28 years.

It's unusual for a lifelong academic with such an impressive research legacy to retire



William Parker, Ph.D., immunologist and biochemist. COURTESY OF WILLIAM PARKER

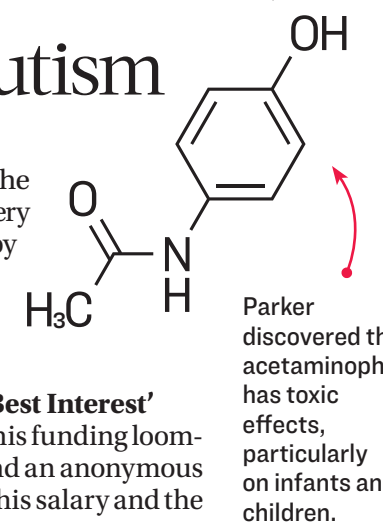
before the age of 60.

An email trail from the Duke Department of Surgery administration obtained by The Epoch Times indicated, however, that Parker was forced to leave.

'Not in Their Strategic Best Interest'
With the threat of losing his funding looming over him, Parker found an anonymous donor willing to support his salary and the costs of his experiments.

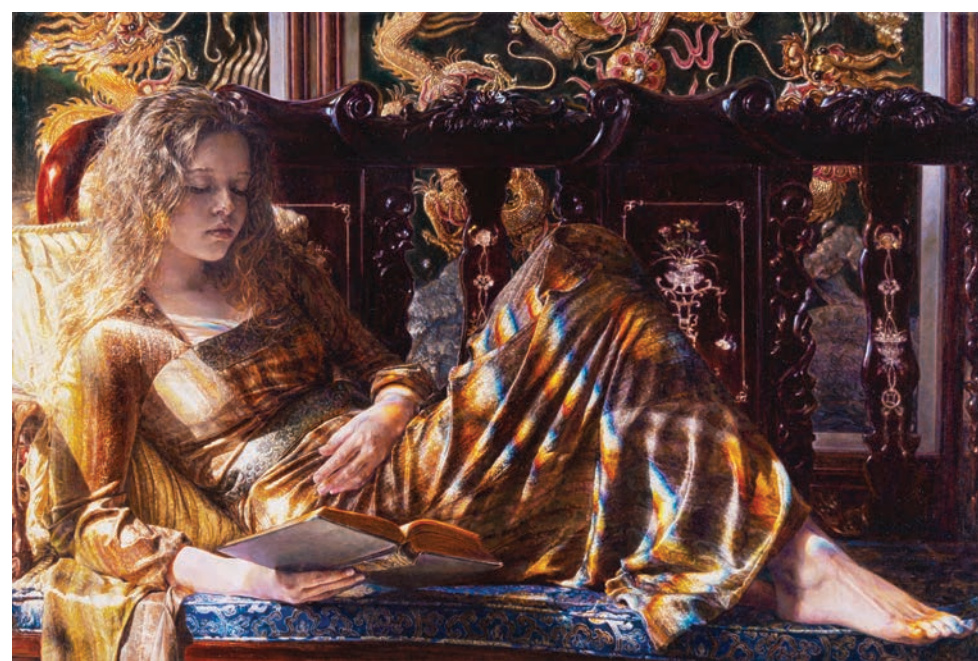
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— DARRYL AGEE

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FOOD AS MEDICINE

Living Longer Through Fruits and Vegetables

Research reveals eating more fruits and vegetables extends longevity

ELLEN WAN

Fruits and vegetables are far more than fiber, carbohydrates, and protein. They're complex synergies of vitamins, minerals, carotenoids, and polyphenols that can help us avoid the most prolific killers of our age. Research shows that fruits and vegetables can reduce the risk of chronic diseases, such as cardiovascular disease and cancer.

A research team led by Atsushi Goto, a professor at Yokohama City University, and Hitoshi Nakagama, president of the National Cancer Center Japan, conducted a 20-year research survey on the association between eating fruits and vegetables and all-cause mortality. The results, published in October 2022 in *The Journal of Nutrition*, an Oxford journal in the UK, show that people who consumed more vegetables and fruits had a 7 to 8 percent lower risk of death over 20 years, compared with those who consumed fewer vegetables and fruits.

European and American research had previously revealed that eating more fruits and vegetables can reduce the incidence of cardiovascular disease and the risk of all-cause mortality effectively, according to Goto. Yet the diet, lifestyle, and heredity of westerners are different from Asians. Thus, the research team selected 95,000 male and female volunteers, aged 40 to 69, from 11 Japanese prefectures and cities between 1990 and 1993, after excluding patients with cancer, cardiovascular disease, and liver disorders, for a long-term questionnaire survey.

Based on the results of the questionnaire, the researchers compiled statistics on the daily fruit and vegetable intake of the participants and divided them into five groups according to the amount of intake, from highest to lowest. The group with the lowest fruit and vegetable intake was the control group, which was compared to the other groups for subsequent risk of death from all-cause, cancer, and cardiovascular and respiratory diseases.

In 2018 (20 years later), the follow-up results show that the risk of all-cause death was reduced by 8 to 9 percent in the high fruits and vegetables intake group, while the risk of death for cardiovascular disease was reduced by approximately 9 percent.

The analysis of fruit intake shows that the risk of all-cause death was reduced by 8 percent in the highest intake group, and the risk of death by cardiovascular disease was decreased by 13 percent. It was particularly noticeable in women.

Analysis of vegetable intake shows that

the group that consumed the most vegetables had a 7 percent lower risk of death than the group that consumed the least.

When mortality was analyzed separately for males and females, it was found that higher fruit intake in males was associated with lower respiratory mortality, while the same in females was associated with lower cardiovascular mortality.

According to the result of the analysis, the research team concluded that vegetables and fruits, which are rich in vitamins and dietary fiber, play an important role in people's health. It's recommended to intake more than 300 grams (10.5 ounces) of vegetables and more than 140 grams (5 ounces) of fruits daily.

The research team concluded that vegetables and fruits, which are rich in vitamins and dietary fiber, play an important role in people's health.

"I hope this research result can provide data as a basic reference to the general public about the daily intake of fruits and vegetables," Goto said.

Additionally, research on nearly 1.9 million people worldwide conducted by scientists from the Harvard T.H. Chan School of Public Health and other institutions also revealed that an appropriate amount of daily fruit and vegetable intake can extend life expectancy. The research results were published in the American medical journal *Circulation* in March 2021.

The research discovered that not all vegetables and fruits can reduce the risk of mortality. Starchy vegetables, such as peas, corn, and potatoes, and some fruit juices aren't associated with lowering the risk of death from all-cause or certain chronic diseases.

Green leafy vegetables, such as spinach, lettuce, and kale; citrus fruits; berries; and carrots, which are rich in beta-carotene and vitamin C, have all shown benefits in reducing the risk of all-cause and cause-specific mortality.



People who consumed more vegetables and fruits had a 7 to 8 percent lower risk of death over 20 years.

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Finding the root cause of the patient's disc herniation is key to successful treatment.

TRADITIONAL CHINESE MEDICINE

A Non-Surgical Approach to Healing Herniated Disc

Using traditional Chinese medicine to holistically address the causes of a slipped disc and improve recovery

TERESA ZHANG & MAY CHENG

A slipped disc is a common affliction. Sometimes caused by gradual age-related wear, herniation also can occur by lifting heavy objects improperly or lifting while twisting the body. Uncomfortable symptoms, such as pain or burning in a shoulder, arm, or leg, can then hinder everyday movement.

Asia Medical Specialists Clinic in Hong Kong describes a slipped disc, also known as disc prolapse or hernia, as the cushioning tissue (intervertebral disc) between two vertebrae tearing and allowing the inner gel to seep out, which can irritate nearby nerves, often causing low back and neck pain or lower limb paralysis.

Registered Chinese medicine practitioner Dr. Yuen Oi-lin shared how traditional Chinese medicine (TCM) repairs a slipped disc. She says TCM adopts a holistic treatment method that varies from person to person. Finding the root cause of the patient's disc herniation is key to successful treatment.

She said patients who opt for TCM treatment of a slipped disc find it to be effective, less likely to relapse, and best of all, surgery-free.

Ranked No. 1 in orthopedic treatments worldwide, the Hospital for Special Surgery wrote on its blog that a slipped disc in the lumbar spine area (lower back) doesn't slide around. Vertebrae discs are made up of a ring of tough collagen that surrounds a jellylike substance called the nucleus pulposus. If there's a break in that outer ring, the nucleus pulposus can escape through the crack and compress a nerve.

"The intervertebral disc is the cartilage between the spine connected to the vertebrae, which acts as a shock absorber and shock absorber, which allows buffering to maintain the spine's integrity," Yuen said.

Yuen pointed out that slipped discs usually occur in the 4th to 6th vertebrae, that is, between the waist and the hip. The phenomenon is often related to people frequently lowering their heads to look at electronic devices. "Disc herniation happens especially to middle-aged patients as their bodies begin to age. Cartilage is the first to degenerate," she said.

"If you maintain a specific posture for a prolonged period, the cartilage deformation between the vertebrae will cause nerve compression in the lower limbs, resulting in pain and paralysis."

“Disc herniation happens especially to middle-aged patients as their bodies begin to age. Cartilage is the first to degenerate.”

Dr. Yuen Oi-lin, registered Chinese medicine practitioner

“When stretching, the goal is to reach your ankles. You can practice more to get there.”



How Is a Slipped Disc Diagnosed?

How do patients know that they have a slipped disc? Yuen said there are several ways to detect the condition in TCM.

Does the pain increase when the patient coughs or sneezes? Is it difficult to kneel or squat? If these symptoms are present, then herniation is suspected.

Yuen has her patients lie on their backs and put one foot on the knee of the opposite leg and repeat using the other foot. A slipped disc or bone spur is very likely if the patient feels any pain or strain when doing this move.

Western Versus Chinese Medicine

TCM refers to physical pain, numbness, dysfunction, or paralysis. It denotes that numbness or paralysis is motivated by wind, cold, and humidity. These three factors cause blockage and are called inflammation in Western medicine.

In Western medicine, physicians rely on an MRI result to make a diagnosis.

In Chinese medicine, the remedy depends on whether a patient requires TCM to repair the kidney and liver and revitalize the qi deficiency and blood circulation within the internal system.

TCM results are positive if combined with cupping for blood circulation and acupuncture therapy for blockage.

A Case Study

One of Yuen's patients was a government official who had a herniated disc. The 40-year-old couldn't walk because of his severely damaged knees. After visiting the hospital and obtaining an MRI report, his physician confirmed that he had a slipped disc requiring surgery to remove the cartilage.

His colleagues referred him to Yuen for a second opinion. She suggested a 10-session treatment plan, including cupping, acupuncture, and Chinese herbal medication. She said the patient would be able to resume work within two weeks.

Why shouldn't surgery be a patient's first choice?

In the Western clinical approach, a surgeon would surgically remove the slipped disc. Since the disc would grow back, the patient might be risking the need for another painful operation in the future.

Chinese medicine focuses on treating the cause of disc herniation, so it's less likely to relapse. TCM believes in main-

taining the human structure unaltered as much as possible. Removing any body part may cause meridian damage and side effects, and isn't a permanent cure.

Five organs are linked to various body parts through meridians, and each part of the body is managed separately. The traditional Chinese medical book "Yellow Emperor's Inner Canon" points out that the "kidney controls the bones." Therefore, treating a disc herniation means also nourishing the kidneys.

In addition to oral medication, acupuncture that targets the kidney meridians is used to accelerate the healing process.

If a patient experiences a sense of cold air leaving from their skin or sweating more than usual, it indicates that the toxicity is dissipating through unblocked acupoints.

Yuen emphasized that looking after our muscles and bones helps eliminate diseases. Hence, maintaining a natural spinal curve is essential to our health. Many acupoints on both sides of the spine are connected to the viscera (internal organs). If a particular visceral cancer mutates, pressing that organ's acupoint will trigger pain.

Care for Spinal Discs

Yuen suggested three simple steps to maintain a healthy spine: Squatting and stretching the spine and a healthy diet.

1. Zama Step

Relax your body. Make sure your hips are straight. Bend your knees slightly. Place your hands in front of your abdomen as if they're holding a ball and hold for 15 minutes. Practice daily. You may sweat slightly during the exercise, indicating that detoxification is happening.

2. Stretch

Stand straight with your legs slightly apart. Slowly bend forward until you can grab your ankles. If you can't reach your ankles, hold your shins. The more you practice, the more you feel your spine opening up.

Yuen said she enjoys stretching and meditating in the sun.

"Sunlight enhances microcirculation, prevents varicose veins, and strengthens our muscles and bones," she said.

However, she reminded patients to start slowly and avoid overdoing it, so as not to sprain or fracture the cervical spine.

3. Diet

As for TCM food therapy, Yuen recommends a soup containing hairy fig, Himalayan Teasel root, Milletia, and pork shank. The soup is family-friendly since it nourishes and restores the qi in the internal system, which helps prevent blockages and improves blood circulation.

Yuen suggests that beans and nuts are ideal foods for nourishing our kidneys. Any beans—such as soybeans, black beans, and pinto beans—will do.

The doctor joked, "Interestingly, the beans are shaped like our kidneys."



This therapeutic soup helps prevent blockages and improves blood circulation.

Top Professor Ousted After Linking Acetaminophen to Autism

Continued from Page 9

This private donor was willing to support his laboratory work for at least a year and possibly indefinitely.

However, when Parker let the administration know that he had secured funding to keep his lab open and continue some crucial experiments, he was told that Duke was unwilling to accept the money.

"Evidently, donations can be received to support research initiatives that are strategically aligned with the institution, and can be used at the discretion of the beneficiary," Kent J. Weinhold, chief of the Division of Surgical Sciences, who's a professor of immunology and pathology, wrote in an email to Parker dated April 5, 2021.

"They cannot be tied directly to a salary line or specific experiments, as such would be regarded [as] a grant, not a gift. So a donor can donate to your laboratory, but cannot donate money specifically for your salary.

"The real issue here is perhaps more direct. To receive a donation for you, it would require that the Department strategically wants to keep your lab open. Unfortunately, the Department feels that [it] is not in their strategic best interest to keep your lab open. With this being the case, receipt of a donation would not be possible."

Parker told The Epoch Times that shutting down his lab under these circumstances was unheard of in his experience.

An Impressive Scientific Legacy

Parker has published almost 200 papers, replete with discoveries on par with other scientists at prestigious institutions: In addition to discovering the function of the human appendix (a safe house for beneficial bacteria), he was one of the pioneers in evaluating the immune systems of wild animals.

More recently, Parker has researched the beneficial effects of intestinal worms. Living symbiotically with worms—like living symbiotically with beneficial bacteria—may help the human immune system.

Parker's research has strongly indicated that intestinal worms have a beneficial effect on depression and anxiety. He was also among the first to publicly—and correctly—predict that intestinal worms would help protect people from the most severe cases of COVID-19.

Ousted for Controversial Research?

So, given that Parker is such a well-published academic conducting cutting-edge research, why did Duke decide that it was "not in their strategic best interest" to keep his laboratory open?

No one at Duke gave him a clear answer to that question, Parker said. But he also had been noticing a lack of institutional support since 2017.

That year, he and a team of scien-

tists, including a well-known brain researcher in the Department of Neurology at Harvard Medical School, published a review article in the Journal of International Medical Research. The review explored the scientific literature that linked acetaminophen—the main ingredient in Tylenol—to oxidative stress, inflammation, and autism.

In the past, the university supported his research. But in this case, although Parker had the needed research funding in his account at Duke, the administra-

tion refused to pay the journal's publication fee.

A Home Equity Loan to Pay Academic Publication Fees

That had never happened before. Perplexed but undeterred, Parker and his wife, Susanne Meza-Keuthen (who works as a counselor in the local public schools), used a home equity loan to pay the fee themselves.

After the paper was published, Parker was no longer given the teaching assign-

ments that helped support his salary. "I saw a 90 percent reduction in the number of trainees I was assigned to mentor," he said.

Though he said he can't establish cause and effect, Parker thinks that the change might have been punitive.

"The justification for my position was based on research funding, teaching, and training," he said. "So taking some of that away meant that they could then argue that my existence at the university wasn't 'justified.'"

Then, in 2020, Duke refused to allow Parker to use his research funds to study the connection between acetaminophen and autism. This decision was only rescinded after lawyers working for donors—who provided the funding specifically for that study—complained that the research wasn't moving forward.

One of the most important research projects he has conducted, Parker said, uncovered toxic effects of acetaminophen, particularly on infants and children. Parker claims, among other things, that the scientific evidence overwhelmingly indicates that early exposure to acetaminophen causes autism.

Tylenol is the most common brand name of acetaminophen in the United States. The company's website shows 10 different products marketed for children, including two for infants.

In 2021, the global market for acetaminophen was valued at \$9.44 billion, according to one report.

Despite the research that shows that it's toxic to the brain and the immune system, physicians continue to recommend giving kids Tylenol. Some doctors remain unaware of 2009 research that showed that administering acetaminophen before or after childhood vaccinations negatively affects the body's immune response.

The conclusion of that research was that because healthy infants given acetaminophen had a reduced response to antigens, preventive administration of fever-reducing drugs at the time of vaccination should not be routinely recommended.

Yet doctors in the United States and most other countries continue to recommend Tylenol. As a result of this continued endorsement by pediatricians, parents are largely unaware of the overwhelming scientific evidence that acetaminophen is harmful to babies and small children.

Ties to Industry
Two members of the leadership team at Johnson & Johnson, the company that makes Tylenol, are high-level administrators at Duke. Dr. Mark McClellan is the director of the Duke-Robert J. Margolis Center for Health Policy. Dr. A. Eugene Washington is Duke's chancellor for health affairs.

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Conflicted Interests?

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ALL IMAGES BY SHUTTERSTOCK

Fasting Combats Cancer, Enhances Chemotherapy: Current Research

Continued from Page 9

The doctor told him with a smile on his face, "Mr. Evrard, you are cancer-free."

How Does Intermittent Fasting Fight Cancer?

Since the early 1900s, scientists have noticed the positive effects of diet control on the health of organisms. Research at the time had already shown that diet control can slow or even stop tumor growth in laboratory mice, as well as delay cancer recurrence. Scientists have conducted hundreds of studies on different types of organisms, including yeast, nematodes, fruit flies, mice, rhesus monkeys, and so forth. After animal trials, small-scale human experiments were carried out. Preliminary studies suggest that prolonged fasting is safe for certain cancer patients and may reduce chemotherapy-related

toxicity and inhibit the growth of cancerous tumors.

1. The Anticarcinogenic Actions of Fasting

Fasting and a ketogenic diet can put a person into a state of ketone body metabolism. Cancer cells can only survive by metabolizing glucose and glutamine, and they can't metabolize ketone bodies. Therefore, such regimens are equivalent to cutting off the food ration of cancer cells.

Fasting and caloric restriction can reduce the production of growth factors, inflammatory cytokines, and anabolic hormones. That prompts corresponding changes in the body's metabolism and hormone levels, such as decreased insulin secretion, increased insulin sensitivity, and decreased testosterone and estrogen secretion.

Fasting and restricting calories can also reduce oxidative stress even as they enhance antioxidant effects, reduce free-radical-induced DNA damage, and activate various DNA repair processes. Experiments on cells have also demonstrated that fasting and restricting calories can enhance autophagy, a process in which the body recycles cellular "garbage" and removes damaged cell parts. Fasting can also inhibit cell proliferation and slow down cellular aging.

These well-studied mechanisms may help the body fight cancer—as many studies suggest.

An animal study at the University of Wisconsin showed that monkeys that ate 30 percent fewer calories had a 50 percent reduction in the incidence of sporadic cancer (the most common of which is gastrointestinal adenocarcinoma) compared to monkeys on an unrestricted diet.

A study conducted by Johns Hopkins University with a median follow-up of 11 years found that intensive lifestyle intervention can reduce the risk of obesity-related cancers (including esophageal cancer, colon cancer, rectal cancer, kidney cancer, pancreatic cancer, stomach cancer, liver cancer, gallbladder cancer, thyroid cancer, uterine cancer, ovarian cancer, postmenopausal breast cancer, and multiple myeloma) by 16 percent. The researchers believe that this is due to the lifestyle intervention that led to the weight loss of the subjects.

A joint study conducted by scientists in the United States and France found that a fasting diet combined with vitamin C can treat certain types of cancer more effectively.

2. Fasting Can Enhance Chemotherapy, Reduce Side Effects

Clinical research on fasting in cancer patients is still in its infancy. However, growing evidence shows that short-term fasting can reduce the toxicity of chemotherapy while enhancing the efficacy of chemotherapeutic agents, thereby improving the quality of life of cancer pa-

tients. This is because fasting increases the stress resistance of healthy cells, while tumor cells become more sensitive to chemotherapeutic agents due to a shortage of nutrients.

Animal experiments have shown that the inhibitory effect of fasting on tumors is comparable to that of chemotherapy; the combination of fasting and chemotherapy achieved the best anticancer effect and the most significant reduction in tumor volume. Moreover, such an approach produced the highest level of tumor-infiltrating lymphocytes. The experiments demonstrated that fasting also stimulated the production of common lymphoid progenitor cells.

A small-scale clinical trial showed that



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Academic Pressure to Abandon Controversial Subjects

Parker said that there's widespread pressure to ignore or suppress the connection between acetaminophen and autism.

A few days before we spoke to him, a not-for-profit publicity firm backed out of a contract with him and promised to return the almost \$10,000 he had paid them to conduct public outreach describing his published work.

"I've seen professors back quickly away from this project despite compelling data, and I've seen journal editors reject our papers with no valid reason," Parker said.

He recalled one anonymous reviewer who referred to his work as "bizarre" and another who stated emphatically that acetaminophen is safe when used as directed, despite formal proof that the drug was never shown to be safe and ample evidence that it isn't safe.

Journal editors have quickly rejected Parker's work, he said, because of "formatting errors" or "inappropriate subject matter" without any explanation or opportunity to revise.

Nevertheless, Parker said not all journal editors ignore inconvenient truths. For example, Peter de Winter, an editor for the European Journal of Pediatrics, gave one of Parker's studies serious consideration, ignoring statements by reviewers that were emotional and verifiably false.

He was also impressed with the editors of *Minerva Pediatrics*, where he and a team of 11 other scientists published an updated literature review in July 2022.

"They took months to examine my work and didn't rush into a decision, which is what I would expect from somebody who takes the issue seriously. In the end, they accepted solid work for what it was," Parker said.

If Acetaminophen Causes Autism, a Possible Fix

It isn't surprising that some people want to sweep under the rug any evidence suggesting that acetaminophen exposure causes neurodevelopmental disorders.

The stakes are high: Scientists working in the field of autism could lose their credibility and even their jobs, and pediatricians could be blamed for causing autism since they're the ones who recommend that parents dose their children with Tylenol. But Parker believes there may be a simple solution.

"Although acetaminophen has never been shown to save lives and is certainly over-used, it is possible that it could be made safe by adding an antidote for the drug's toxicity," he said.

One such antidote, acetylcysteine, is tolerated well by the body. A powerful antioxidant, acetylcysteine is a drug currently used to treat acetaminophen overdose and prevent the resultant liver damage. It's known more popularly as "N-acetyl cysteine," often abbreviated to "NAC" when sold as a dietary supplement.

NAC is a synthetic version of cysteine, an important amino acid and a component of glutathione, often referred to as "the master antioxidant."

People began buying large amounts of NAC in 2020 as a potential treatment

or preventive for the symptoms of COVID-19. NAC has been shown to interfere with virus replication and suppress expression of pro-inflammatory cytokines in cells infected with influenza viruses or respiratory syncytial virus. Overproduction of those pro-inflammatory cytokines, known as a cytokine storm, is a primary culprit in many COVID-19 deaths.

However, the FDA responded to this attempt by citizens to protect their own health by issuing warning letters to supplement suppliers and trying to shut down over-the-counter sales of NAC, resulting in many supplement websites temporarily pulling it from their virtual shelves.

Meanwhile, a 2021 study predicted that autism could cost the United States \$589 billion per year by 2030. A lot of those dollars go to pharmaceutical companies with a known predilection for hiring federal employees when they tire of civil service salaries.

As for Parker, he said that his team is moving forward despite the hurdles they've faced in the academic world.

"I'm doing more work on the cause of autism with my nonprofit than I ever could have done at Duke," he said.

That nonprofit, WPLaboratory.org, has already published two peer-reviewed papers within the last year, is currently running several experiments to learn about the toxic effects of acetaminophen in early development, and has started a wide-reaching publicity campaign to get the word out about the dangers of acetaminophen.

"Leaving Duke really freed me to address the problem," he said. "We faced so many problems trying to move the research forward. Everything from public outreach to working with experts got mired in so much bureaucratic nonsense. We're moving so much faster now than we ever could have before."

Jennifer Margulis, Ph.D., is an award-winning journalist and author of "Your Baby, Your Way: Taking Charge of Your Pregnancy, Childbirth, and Parenting Decisions for a Happier, Healthier Family." A Fulbright awardee and mother of four, she has worked on a child survival campaign in West Africa, advocated for an end to child slavery in Pakistan on prime-time TV in France, and taught post-colonial literature to non-traditional students in inner-city Atlanta. Learn more about her at JenniferMargulis.net

Challenging Status Quo

A growing number of cutting-edge academic researchers and journal editors have lost their positions for standing behind findings that challenge common medical practices or suggest corporate malfeasance.



Research findings suggest intermittent fasting combined with vitamin C (from foods or supplements) can be a powerful adjunct to cancer treatment.

Personality Traits Might Predict Alzheimer's Disease

Personality change may be the earliest warning sign for Alzheimer's and certain practices can help prevent it



About
47
PERCENT

of patients showed personality changes before being clinically diagnosed as having Alzheimer's disease.

STEPHANIE ZHANG

Maunt Jenny Liang had always been a traditional woman with an extroverted personality. She was married for 42 years, retired for seven years, and had five children and nine grandchildren. She liked to cook and always smiled at everyone and everything.

One day, her personality suddenly changed. Her daughters noticed that their mom no longer smiled at them and that she became easily upset and angry. She didn't have the patience to listen to others and stopped caring for her hygiene. Her smiles became frowns, and she began complaining about everything in her home.

As time went on, she became more irritable, and then she began avoiding social events and friends, eventually losing interest in the cooking that she loved to do for so many years. She was so affected by nervousness and anxiety that her person-

ality changed to neuroticism.

After two years, she was diagnosed with Alzheimer's disease. Many people with Alzheimer's disease have a similar experience to my aunt's. In one study, about 47 percent of patients showed personality changes before being clinically diagnosed as having Alzheimer's disease. A longitudinal assessment of non-demented older adults demonstrated that the very first changes in personality in these adults were associated with the incidence of Alzheimer's disease.

If you want to detect Alzheimer's disease as early as possible to intervene most effectively, the first indication of the disease might be personality changes other than subtle memory or cognitive deficits, and the changes will progress with measurable cognitive loss.

Personality Traits Might Predict Alzheimer's
Features of your personality might also predict Alzheimer's disease.

If you want to detect Alzheimer's disease as early as possible to intervene most effectively, the first indication of the disease might be personality changes.

According to the authors of a longitudinal study on personality's association with this disease, personality traits are described as "enduring dispositions that underlie individuals' cognitive, emotional, and behavioral tendencies." These traits are related to a person's lifestyle and can be implicated in physical and mental health conditions, including affecting the incidence of Alzheimer's disease.

This study of 1,671 participants indicated that certain personality traits are associated with an increased risk of Alzheimer's disease. Those with neurotic personalities who are more likely to be anxious, depressed, and vulnerable to stress had a 3.1-fold increase in risk for the incidence of Alzheimer's disease. Those with conscientious personalities and who are well-organized and have better self-discipline and willpower, however, had a 3.3-fold decrease in risk of the incidence of Alzheimer's disease.

The study estimated that the personalities of neuroticism and conscientiousness

Warning Signs of Personality Change

Our moods and behavior naturally fluctuate; healthy people vary in their overall personality, mood, and behavior from day to day. However, sudden or significant changes in personality or extreme changes in behavior often indicate problems.

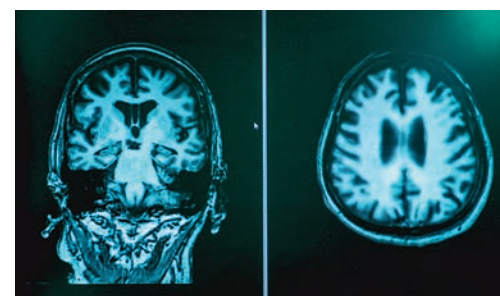
The most common warning signs of personality changes include:

- Increased rigidity
- Increased egocentricity
- Coarsening of personality
- Growing apathy
- Insensitivity to others
- Poor emotional control
- Diminished emotional responsiveness
- Aimless hyperactivity

Other neuropsychiatric symptoms include:

- Depression
- Believing things that aren't real
- Hallucinations
- Hostile or violent behavior
- Anxiety or nervousness
- Sleep disorders
- Poor judgment
- Inappropriate or risky behavior
- Lack of impulse control
- Frequent and/or intense emotional outbursts

For many relatives and caregivers, changes in a person's behavior and personality will most often be the earliest observable signs of Alzheimer's disease. It's important to be compassionate and keep in mind that these changes come as a result of the initiation and progression of the disease.



A study found noticeable growth in the hippocampus of participants in a mindfulness-meditation-based brain fitness program.

could account for 13 percent and 11 percent of Alzheimer's disease cases in the population, respectively.

A study of a cohort of 2,046 community-dwelling older adults found that individuals who developed Alzheimer's disease scored significantly higher on neuroticism and lower on conscientiousness and extraversion.

These results strengthen the hypothesis that personality traits are independent risk factors for Alzheimer's disease rather than the consequences. The participants were followed up for as long as 36 years, and the personality tendencies were found at least 6.44 years before the onset of the disease.

Why Personality Affects Alzheimer's Disease

This association between personality and Alzheimer's disease might be interpreted by the links related to health behaviors, physiological pathways, and coping skills.

The seven most commonly identified risk factors of Alzheimer's disease include depression, mid-life obesity, diabetes, mid-life hypertension, smoking, low educational attainment, and physical inactivity. Each of these risk factors can be shown to relate to personality. Since these seven risk factors contribute to approximately half of the cases of Alzheimer's

disease globally, it stands to reason that personality is one of the most influential factors in the incidence of the disease.

Direct physiological pathways related to Alzheimer's disease are also associated with personality, such as elevated levels of inflammatory cytokine Interleukin-6, chronic elevated white blood cell count, metabolic syndrome, and more.

Personality traits are related to coping skills, and chronic stress over a person's lifespan may contribute to an inability to cope with the neurodegenerative process underlying Alzheimer's disease.

Alzheimer's disease is a progressive disease that continuously damages neural cells in multiple areas of the brain, affecting neuronal functions. When parts of the brain fail to do their job, a person may exhibit personality changes and odd behaviors.

Mind and Body Practice Affects Personality, Helps Prevent Alzheimer's Disease

Rooted in ancient Eastern traditions, mind and body practice pertains to holistic practices that build and strengthen the connections between the emotional, mental, and physical aspects of a human being. Mind and body practice can provide effective and non-pharmacologic approaches to calm the mind, relax the physical body, and have a long-term impact on the brain and behavior, eventually changing one's personality.

There's growing interest in meditation due to its well-documented beneficial effects on physical and psychological health. A case-controlled study found that the mindfulness-meditation experience was negatively related to neuroticism and positively related to extraversion in the group of meditators, presumably leading to alterations in personality.

A 10-year study on U.S. adults found that mind and body practice could significantly

The personalities of neuroticism and conscientiousness could account for

13
PERCENT

and

11
PERCENT

of Alzheimer's disease cases in the population



A 12-week mindfulness meditation-based 'Brain Fitness Program' significantly improved 84 percent of participants' cognitive function.

enhance cognitive function and executive function. Cognitive function is one of the most important factors that influence personality, and high executive function leads to increased conscientiousness and openness. As a result, mind and body practice changes a practitioner's personality.

Mind and body practice can thus help to relieve Alzheimer's directly. Alzheimer's disease has been known to be an irreversible neurodegenerative disorder. Although numerous clinical trials have been undergone or are still undergoing, no therapy has been shown to cure the disease yet.

Mind-body therapies have recently emerged as complementary therapies because a combination of practices such as meditation and yoga can have a direct effect on brain volume, brain-derived neurotrophic factor, serotonin, cortisol levels, and sleep quality, which directly or indirectly affect the pathogenesis of Alzheimer's disease.

A 12-week mindfulness-meditation-based "Brain Fitness Program" significantly improved 84 percent of participants' cognitive function. The participants had either no atrophy or an actual growth above the baseline volume of their hippocampus under a post-program quantitative structural magnetic resonance imaging scan.

Research on long-term Sahaja Yoga Meditation demonstrated that meditation could increase brain volume mainly in the temporal and frontal areas of the right hemisphere and the brainstem. Participants had a measurable 6.9 percent larger gray matter volume in 11 areas of the brain. Gray matter contains a large number of neurons. An increased volume allows the brain to process more information and strengthens neural cell communication, enabling individuals to better control movement, memory, and emotions.

Insomnia is prevalent in people with Alzheimer's disease. After a one-month yoga practice, participants with insomnia reported decreased stress and greater sleep quality. Participants in another three-month yoga and meditation practice reported decreased anxiety and depression. Researchers found there to be an inverse correlation between the increased plasma level of brain-derived neurotrophic factors and an observable magnitude of the cortisol awakening response. The study showed that the plasma level of the anti-inflammatory cytokine Interleukin-10 increased and the pro-inflammatory cytokine Interleukin-12 was reduced after the practice. Such a result suggests that mind and body practice can help stop or reverse the progression of Alzheimer's disease.

A three-month practice of tai chi, another popular mind and body practice, has also been shown to help with insomnia, with the results lasting for up to 24 months. Such findings indicate that yoga and tai chi should be recommended as first-line nonpharmacological management for insomnia and to alleviate the symptoms of Alzheimer's disease.

Antidepressants Linked to Rise in Superbugs—New Study Reveals

Antibiotic resistance is making pathogens we routinely encounter potentially deadly—again

EMMA SUTTIE

The term "superbug" conjures images of bacteria with superpowers—able to evade the effects of the antibiotics given to destroy them. The prolific use of antibiotics is thought to be the cause, and bacteria, in a fight for their survival, have adapted—making an increasing number of antibiotics ineffective against a growing number of bacterial infections.

A new study published in PNAS on Jan. 23 has shown that antidepressants, some of the most widely prescribed medications in the world, cause antibiotic resistance, giving them the potential to become dangerous superbugs.

"Even after a few days exposure, bacteria develop drug resistance, not only against one but multiple antibiotics," Jianhua Guo, one of the study's authors and a professor at the University of Queensland's Australian Centre for Water and Environmental Biotechnology, told Nature. "This is both interesting and scary."

In the study, researchers exposed *Escherichia coli*, or *E. coli*, bacteria to five common antidepressants: sertraline (Zoloft), duloxetine (Cymbalta), bupropion (Wellbutrin), escitalopram (Lexapro), and agomelatine (Valdoxan). Then, over a two-month exposure period, the team exposed the bacteria to 13 antibiotics representing six different classes of drugs.

Antidepressants were able to kill or slow the growth of certain bacteria.

An estimated

1.2

MILLION
people died as a direct result of antibiotic resistance in 2019.

Every one of the antidepressants caused the *E. coli* to develop antibiotic resistance, but two in particular, sertraline (Zoloft) and duloxetine (Cymbalta), had the most pronounced effects, producing the largest number of resistant bacterial cells.

Guo's interest in nonantibiotic drugs contributing to antibiotic resistance came in 2014, when his lab discovered that there were more antibiotic-resistant genes in domestic wastewater than in wastewater from hospitals—where they use more antibiotics.

This led to the discovery by his team and others that antidepressants were able to kill or slow the growth of certain bacteria, which Guo says provokes "an SOS response," triggering defense mechanisms in the bacteria that help them survive and subsequently resist antibiotic treatments.

These findings led Guo and his team to conduct the present study to find out if antidepressants could cause bacteria to become resistant to antibiotics.

In addition to demonstrating that antidepressants cause antibiotic resistance, the study also found that the higher the dose of antidepressants, the faster the *E. coli* bacteria developed resistance and the more antibiotics they could resist within the two-month study window.

Interestingly, the bacteria in well-oxygenated environments developed resistance more quickly than those in low-oxygen laboratory conditions. This might be good news for humans, as a low oxygen environment better represents the human intestine, where *E. coli* bacteria grows in the body.

The study also revealed that at least one of the antidepressants, sertraline, sold under the brand name Zoloft, encouraged the transmission of genes between bacterial cells, allowing the spread of resistance through a population. These transfers can happen between different types of bacterium, enabling resistance to jump between

species, which can include going from harmless bacteria to infectious ones.

The Prolific Use of Antidepressants

Worldwide, antibiotic resistance is a serious public health threat. An estimated 1.2 million people died as a direct result of antibiotic resistance in 2019—and that number is expected to increase in the years ahead.

A comprehensive epidemiological study led by the University of Bristol and published in the British Journal of Psychiatry Open analyzed data on more than 200,000 people. Researchers set out to see if long-term antidepressant use (over five years and 10 years) was associated with the development of six health problems: diabetes, high blood pressure, coronary heart disease, stroke (and related syndromes), and two mortality outcomes—death from cardiovascular disease or from any cause.

Researchers found that long-term antidepressant use was associated with an increased risk of coronary heart disease and an increased risk of dying from cardiovascular disease and from any cause. The study notes that the risks were greater for those taking non-SSRI (selective serotonin reuptake inhibitors), which include mirtazapine, venlafaxine, duloxetine, and trazodone and that their use was associated with a two-fold increased risk of coronary heart disease, cardiovascular mortality, and all-cause mortality at the 10-year mark.

According to the Pharmaceutical Journal, antidepressant prescriptions in the U.K. have increased by 35 percent in the past six years, and those prescriptions rose by 5.1 percent in 2021/2022—the sixth consecutive annual increase. These numbers highlight not only an alarming rise in antidepressant use but the implications of the potential antibiotic resistance of these drugs.

Definitive Healthcare, which collects and analyzes health care data, compiled a list of

the top 20 antidepressants by prescription volume in the United States. The top three prescribed antidepressants for 2021 were:

- Zoloft (sertraline hydrochloride) —18,337,255 prescriptions
- Desyrel/Olepro (trazodone hydrochloride) —15,175,105 prescriptions
- Wellbutrin (bupropion hydrochloride) —14,849,887 prescriptions

The 20 antidepressant medications on the list account for nearly 130.5 million prescriptions in the United States in 2021 alone.

How Dangerous Is Antibiotic Resistance?

According to the World Health Organization (WHO), antibiotic resistance is one of the biggest threats to global health, food security, and development. They cite that a growing list of infections including pneumonia, tuberculosis, blood poisoning, gonorrhea, and foodborne diseases are becoming harder and sometimes impossible to treat as antibiotics become less effective.

"Without urgent action, we are heading for a post-antibiotic era, in which common infections and minor injuries can once again kill," the WHO stated.

Some of the deadliest bacterial infections are tuberculosis, anthrax, tetanus, pneumonia, cholera, botulism, and pseudomonas infections. MRSA, or Methicillin-resistant *Staphylococcus aureus*, is one of the most common infections that have become resistant to antibiotics, and the symptoms generally begin as swollen, painful red bumps on the skin that look like pimples or spider bites. Many cases are mild, but some can cause more serious infections that can be life-threatening. Because MRSA is difficult to treat and resistant to antibiotics, it's often referred to as a "superbug."



The higher the dose of antidepressants, the faster the E. coli bacteria developed resistance and the more antibiotics they could resist within the two-month study window.

The PNAS study states that the United States' high consumption of antibiotics—16,850 kilograms annually in the United States alone—with the addition of their findings, highlights the need to re-evaluate the antibiotic-like side effects of antidepressants.

Implications for Humans

Considering these effects were only observed in Petri dishes, more research is needed to know if antidepressants could fuel the rise of superbugs in human bodies or the environment.

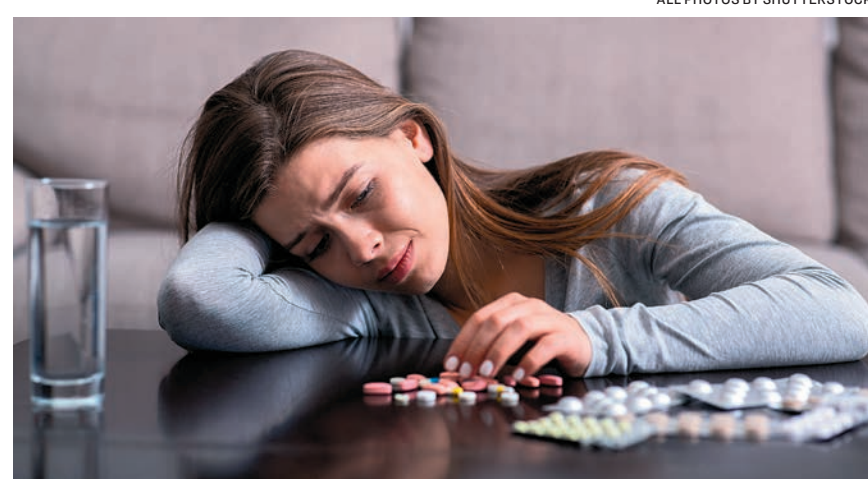
The implications for humans are difficult to predict, but the researchers reported that the two antidepressants that exerted the most extreme effects and the most resistance—sertraline and duloxetine—caused effects after only one day of exposure. Simply put, at clinically relevant concentrations in the human colon (e.g., 50 mg/L), there may be enough antidepressants in the colon to drive resistance.

Another concern is if the levels of antidepressants in wastewater might be causing bacteria to develop resistance, which has the potential to be a public health crisis. More research is needed to fully understand what concentrations would be significant and their implications for the future.

With the unprecedented challenges the world has faced in recent years and the increasing prevalence of antidepressants, the new findings linking antidepressants to superbugs give another reason to explore other treatments for depression.

"If you are taking antidepressants, don't stop taking these medications abruptly. Slowly reducing the amount over many weeks or months is the safest way to proceed. If you're interested in lowering your dose or stopping antidepressants completely, please consult with a health care professional that you trust to help you through the process."

Antidepressants trigger defense mechanisms in bacteria that lead to drug resistance against multiple antibiotics.



Children's Mental Health Ranks as Top Concern for Parents

Mental health issues such as anxiety, depression and suicide more worrying than bullying, kidnapping, drug abuse, and other issues

KATABELLA ROBERTS

Children's mental health is the biggest concern among their parents, post-pandemic, according to a new study from the Pew Research Center.

The study was conducted between Sept. 20, 2022, and Oct. 2, 2022, among a nationally representative sample of 3,757 U.S. parents with children younger than 18, using the Center's American Trends Panel.

It found that 4 in 10 U.S. parents are extremely or very worried about their children struggling with anxiety and depression at some point, followed by 35 percent who are similarly concerned about their children being bullied.

"These items trump parents' concerns about certain physical threats to their children, the dangers of drugs and alcohol, teen pregnancy, and getting in trouble with the police," the study reads.

According to the center, 28 percent of parents are concerned about their children being kidnapped or abducted, 25 percent fret over their children being attacked or beaten, and 22 percent of parents are concerned about their children getting shot.

Just 14 percent are worried about their kids getting in trouble with the police, the study found.

The study follows reports of a growing mental health crisis among children, exacerbated further by the COVID-19 pandemic, which brought a swift move to remote learning and "virtual connections" formed among school students.

Suicide Rates Rise

In 2021, the American Academy of Pediatrics, American Academy of Child and Adolescent Psychiatry, and Children's Hospital

Mental health-related visits to emergency departments among children between March 2020 and October 2020 soared.

4 in 10

▶ parents are extremely or very worried about their children struggling with anxiety and depression.



Association jointly declared a national state of emergency in children's mental health, noting that the pandemic has further exacerbated a previously existing situation.

According to the coalition, which together represents more than 77,000 physicians and 200 children's hospitals, rates of childhood mental health concerns and suicide rose steadily between 2010 and 2020, and by 2018, suicide was the second leading cause of death for youth ages 10 to 24.

Separate data from the Centers for Disease Control and Prevention (CDC) show that suicide rates increased by 30 percent between 2000-18 but declined in 2019 and 2020.

However, it was still among the leading causes of death in the United States, with 45,979 deaths in 2020. It was the second leading cause of death for people aged 10 to 14 and 25 to 34 in that same year, according to the CDC.

Meanwhile, mental health-related visits to emergency departments (ED) among children between March 2020 and October 2020 soared, according to a separate CDC study.

That study found that mental health-related ED visits for children aged 5 to 11 increased by 24 percent in mid-March 2020 compared to the same period in 2019 and continued into October 2020. During that same time period, mental health-related ED visits among those aged 12 to 17 also increased by 31 percent, according to the study.

Rise in Social Media May Have Role

However, Dr. Katherine Williamson, a pediatrician and spokesperson for the American Academy of Pediatrics, told CNN that doctors were already seeing a rise in the number of children dealing with anxiety and depression prior to the pandemic.

"I would say over the last 10 years, since I've been practicing as a general pediatrician, I have seen a shift both in the amount of patients and of all ages dealing with anxiety and depression. And their parents being concerned about this is a key issue," Williamson said. "Even before the pandemic, we were seeing skyrocketing numbers of kids and adolescents dealing with mental health issues, and that has increased exponentially since the pandemic."

However, Duncan Young, CEO of Effective School Solutions, believes the decline in mental health among children may also be linked to the rise in technology and social media.

Multiple studies have found evidence suggesting a growing link between increased social media use and reports of depression symptoms.

Young told The Hill that the mental crisis among children "has actually been probably 15 years in the making" but appears to have grown with increased use of smartphones and social media websites among kids.

Even before the pandemic, the rate of kids and adolescents dealing with mental health issues was increasing dramatically.

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