

THE EPOCH TIMES

MIND &

BODY

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New rates from the CDC show that **1 IN 36 CHILDREN** are diagnosed with autism.

Can the Vaccine–Autism Question Ever Be Answered?

Experts weigh in on possible links between vaccines and autism, and why it's become public health's 3rd rail

A study comparing vaccinated and unvaccinated children could end the debate—but it may never happen.

By Amy Denney

Might there be 25 children living with autism spectrum disorder who developed it after receiving childhood vaccinations? Or could it be 25,000?

The fact remains that there are some. A review in *Pace Environmental Law Review* more than a decade ago found 62 cases in which Health and Human Services (HHS) compensated children with autism for injuries described as vaccine-induced brain damage.

The question of precise risk is one many parents wrestle with, but data fall far short of offering sound insight. What is concerning to some doctors is that there is still so little investigation into the issue and that the subject perpetually unleashes emotionally divisive opposition that does nothing to further science.

A recent meta-analysis affirming the link between autism and the gut microbiome brings to mind the explosive reaction another time the association was made. Nearly 20 years ago, a case report study by Dr. Andrew Wakefield in *The Lancet* highlighted inflammatory

Some people can be susceptible to the effects of vaccinations when other people aren't.

Dr. Armen Nikogosian, functional physician

bowel symptoms associated with autism and the fact that eight of the 12 children had recent MMR (measles, mumps, and rubella) vaccinations.

It wasn't a study examining vaccinations, but it spurred media headlines speculating that Dr. Wakefield was making a claim that led eventually to an investigation, the study's retraction, the destruction of his reputation and career, and the start of what's now dubbed the vaccine-autism myth.

The meta-analysis published June 26 in *Nature Neuroscience* doesn't mention

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DESIGNUA/SHUTTERSTOCK

Insulin Resistance Is 'Main Culprit' for Heart Disease, Doctors Say

By Marina Zhang

Looking at the metabolic roots of heart disease reveals why diabetics are at such high risk

High blood cholesterol has been a central focus in cardiovascular disease for decades. However, doctors are now challenging this emphasis, proposing that it may have caused health practitioners to overlook a critical culprit: insulin resistance.

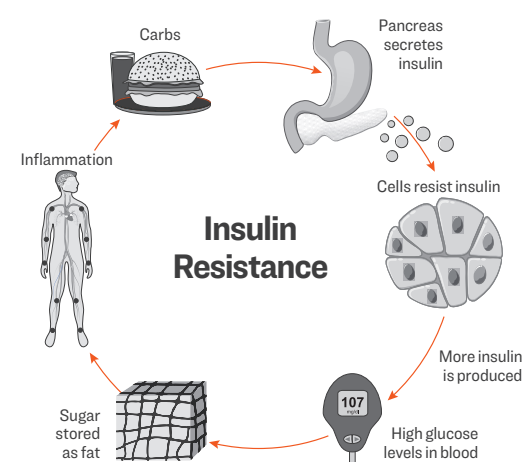
Insulin Resistance Is Cause for Concern

Dr. Robert DuBroff, a cardiologist and professor from the University of New

Mexico, had a patient who suffered multiple cardiovascular events. The patient underwent coronary artery bypass three times and had been treated aggressively with statin medications, although his cardiovascular events continued.

Dr. DuBroff noticed that his patient's blood sugar was borderline prediabetic and that he was overweight. However, these risk factors weren't addressed by previous doctors; once they were, the patient stopped having additional problems.

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EMF The Invisible Hazard

PART 4 THE INFERTILITY AND MISCARRIAGE QUESTION

Studies suggest that Wi-Fi and other EMFs may be linked to rising infertility, miscarriage rates



A study of 900 pregnant women linked higher EMF exposure to a nearly tripled risk of miscarriage.

1 in 5
COUPLES
struggle with infertility.

In this series, we explore the health effects of electromagnetic fields, an omnipresent radiation created by technologies ranging from common home electronics to 5G towers.



Previous Parts:
TheEpochTimes.com/EMF

By Marina Zhang

As exposure to wireless and electronic devices and electromagnetic fields (EMFs) increases, so do infertility and miscarriage rates, leading to questions about whether the two are connected.

About 1 in 5 couples struggle with infertility, miscarriage rates have been increasing by 1 percent every year, and infertility is increasingly affecting younger people of reproductive age.

EMFs and Reproductive Organ Damage

EMFs from wireless and electronic devices can induce oxidative stress within cells sensitive to these environmental signals.

Organs involved in reproduction are vulnerable to damage from EMFs, and animal studies have established a connection.

Female Organs

In one study, whole-body exposure to EMFs damaged the ovaries of female rats, though the same effects have not been found in humans.

In animals, EMFs have been shown to inhibit ovulation and damage ovarian reserves. Certain EMF frequencies have also been shown to affect follicular growth, which can impair fertility because follicles are responsible for fertilizing eggs.

Exposure to EMFs has also been shown to prolong the mating cycle in animals.

Male Organs

Mice exposed to mobile phone radio-frequency tended to develop damage to the testis. In a 2021 study exposing male mice to 4G mobile phone radiation, the mice grew irregular cell layers in their reproductive organs. The study concluded that 4G radiation may affect the animals' kidney and testis tissue.

A review published in Electronic Physician found that EMF exposure reduced and killed mouse cells in charge of producing sperm. Studies mentioned in the review found that EMF exposure also caused DNA breaks in embryonic stem cells.

Hormonal Disruptions

EMFs can directly affect the pineal gland, a master gland regulating hormonal balance. This reduces melatonin, a hormone governing the sleep-wake cycle and involved in

COVID-19

Peru's Unplanned Ivermectin Experiment

Data from Peru link population-wide ivermectin use with 74 percent reduction in excess deaths

By Megan Redshaw

When the government of Peru authorized ivermectin for use during the COVID-19 pandemic, a natural experiment occurred that provided evidence of the drug's effectiveness, according to a new peer-reviewed ecological study.

The paper's results, published Aug. 8 in Cureus, found a 74 percent reduction in excess deaths in 10 states with the most intensive ivermectin use over a 30-day period following peak deaths during the pandemic. When analyzing data across 25 states in Peru, researchers found that these reductions in excess deaths correlated closely to ivermectin use during four months in 2020.

When ivermectin was available without restriction, there was a 14-fold reduction in nationwide excess deaths. In

the two months following the restriction of access to ivermectin, there was a 13-fold increase in excess deaths. The findings align with summary data from the World Health Organization for the same time period in Peru. Ivermectin is a widely known and inexpensive treatment against parasitic diseases. Some scientists believe the drug can also bind to the spike protein of the SARS-CoV-2 virus, limiting its morbidity and infectivity.

Peru Promoted, Then Restricted Access to Ivermectin

Before Peru implemented COVID-19 vaccine mandates, the nation relied on mitigation strategies such as lockdowns and therapeutics to control SARS-CoV-2, the virus that causes COVID-19, as did many other nations.

The Peruvian Ministry of Health approved ivermectin widely for use on

May 8, 2020, prompting 25 states in Peru to implement inpatient and outpatient treatments with ivermectin to different extents and in different time frames. Additionally, through the Mega-Operación Tayta (MOT)—a national program led by Peru's Ministry of Defense—Peru's government began distributing ivermectin on a wide scale.

Through a partnership with 11 other government agencies, MOT aimed to reach every targeted region with rapid response teams to detect COVID-19 cases, administer ivermectin, and provide food to encourage people to isolate for 15 days. Shortly thereafter, MOT began distributing the therapeutic to everyone identified as high-risk, regardless of whether they tested positive or were symptomatic for COVID-19.

The government of Peru independently tracked daily COVID-19 deaths and all-cause deaths through numerous Peruvian national health databases, allowing researchers to calculate excess deaths. Additionally, they extensively tracked data for deaths and other public health parameters, allowing analysis of the potential efficacy of interventions such as iver-

mectin during the pandemic.

When President Francisco Sagasti took office on Nov. 17, 2020, the government stopped distributing ivermectin and made it available only by prescription. This made the drug significantly more difficult for people to obtain. Researchers observed nationwide changes in daily excess all-cause deaths after restrictions went into place.

When ivermectin was available without restriction, there was a 14-fold reduction in nationwide excess deaths.

Effect of Ivermectin on Excess Deaths

Excess all-cause deaths were calculated from the total deaths recorded for January through February 2020. During this period, monthly all-cause deaths fluctuated with a mean value of 5.2 percent and a standard deviation of 3.8 percent. By May 2020, total deaths fluctuated by more than double the baseline value calculated in January through February.

An analysis of excess all-cause deaths was performed state-by-state for those aged 60 years and older to establish the date of peak excess deaths during the pandemic's first wave. Decreases in excess deaths from the peak date of death to 30 and 45 days afterward were tracked. The 25 states were then grouped by the extent of ivermectin distribution: maximal dis-

CHILD-BIRTH AFFECTED BY EMF WAVES

Studies looking at the rate of birth defects and miscarriage in pregnant women working in offices found that even the EMF emitted from a computer monitor can impair reproduction.



FAMVELD/SHUTTERSTOCK

WIFI EXPOSURE LINKED TO INFERTILITY

Recent studies found that sperm was particularly sensitive to Wi-Fi EMF exposure but not 4G or 5G exposures. How this may affect fertility long term is unclear.



MADR_WINETROB/SHUTTERSTOCK

sperm production, and reproductive hormones such as estrogen and progesterone.

Dr. Elizabeth Lee Vliet, a preventive medicine specialist, noted that the rise in radiofrequency EMFs is recent, so there's limited research on its effects on human reproductive organs.

"The iPhone was invented in 2007. That's not long enough for extensive studies," Dr. Vliet said.

Dr. Vliet recommends antioxidants such as vitamins C, D, and E, and melatonin to prevent EMF damage.

While conclusive evidence is lacking, these molecules could intervene in EMF injuries, preventing cellular stress and tissue damage.

EMFs Damage Sperm

Multiple studies, including of humans, have shown that EMF exposure damages sperm.

"Sperm are uniquely susceptible to oxidation," Geoffrey De Iuliis, a professor at the University of Newcastle who specializes in reproductive medicine, said.

Sperm cells are designed with a singular purpose: to swim rapidly and fertilize eggs. Hence, their cytosol, a component of cytoplasm, is small. The limited cytosol restricts the presence of antioxidants that could neutralize oxidative stress induced by EMFs.

Oxidation further leads to DNA damage and impairs sperm health and motility. The protective agents in sperm-guarding DNA are also limited.

"Sperm also have more oxidation-susceptible polyunsaturated fat than saturated fat in their membranes to promote fluidity.

Observational studies have linked increased mobile phone usage with a higher risk of male infertility.

Urologist Dr. Ashok Agrawal's research highlighted that men who used their phones less frequently displayed higher semen volume, sperm count, motility, viability, and normal structure.

Numerous laboratory studies in which researchers exposed sperm samples to extreme low frequency magnetic fields (ELF-MFs) have shown impaired sperm motility and DNA. This was demonstrated in a study exposing human sperm to 1 millitesla of ELF-MF for two hours.

Urologist Dr. Ranjith Ramasamy, an associate professor at the University of Miami, led the most recent study on Wi-Fi exposure and found that sperm were particularly sensitive to Wi-Fi EMF and not 4G or 5G.

Researchers are uncertain how these findings translate in real life. There isn't yet a consensus on whether oxidation is the main driver of EMF damage, despite that the theory has gained recognition, Mr. De Iuliis said.

He also said that even a slight increase in temperature, just a few degrees, can elicit similar effects on sperm cells, whether in animals or in vitro.

Regarding the connection between EMF exposure and male infertility, Mr. De Iuliis suggested that if an effect exists, it's likely subtle because of the absence of significant shifts in infertility rates since the advent of mobile phones and wireless devices.

Electromagnetic fields (EMFs) can directly affect the pineal gland, a master gland regulating hormonal balance.

However, epidemiologist Devra Davis, an environmental health scientist, founder of the Environmental Health Trust, and Nobel Peace Prize winner, supports the link, emphasizing that even findings from animal studies carry weight.

"Every drug that we use today is tested out in animals. How could you reject studies of animals when it comes to predicting the environment?" she said.

For concerned men, Dr. Ramasamy recommended reducing device usage and maintaining a distance from primary sources of wireless EMF, such as cellphones and radio towers. Furthermore, avoid placement of phones in pant pockets near the testes.

EMF Exposure and Miscarriages EMF exposure during pregnancy is linked with miscarriages, Kjell Hansson Mild, a radiation consultant from Umea University, told The Epoch Times.

tribution—occurring through operation MOT, medium, and minimal.

Results showed that the 10 MOT states had a sharp decrease in excess deaths after reaching peak values—with a 74 percent drop at 30 days and an 86 percent drop at 45 days after the date of peak deaths. For 14 states that locally administered ivermectin, excess deaths dropped by 53 percent at 30 days and 70 percent at 45 days.

In Lima, where ivermectin treatments were delayed until August—four months after its initial pandemic surge in April—excess deaths dropped by only 25 percent at 30 days and 25 percent at 45 days after peak deaths on May 30.

According to the study, mean reductions in excess deaths 30 days after peak deaths were 74 percent, 53 percent, and 25 percent, respectively, for the states with maximal, medium, and minimal distribution of ivermectin. Forty-five days after peak deaths, mean reductions were 86

percent, 70 percent, and 25 percent.

The researchers noted that ivermectin distribution may have yielded such positive numbers because the drug can both prevent and treat COVID-19 when distributed to an at-risk population on a greater scale.

Similar Results Observed in Uttar Pradesh, India

Researchers noted similar results with ivermectin distribution in Uttar Pradesh, India, where government teams moved across 97,941 villages as part of a COVID-19 management program to distribute home medication kits that contained ivermectin, doxycycline, zinc, vitamins C and D3, and acetaminophen tablets.

After the mass distribution of ivermectin, the seven-day moving average of COVID-19 deaths in Uttar Pradesh decreased by 97 percent. The cumulative total of COVID-19 deaths per mil-

lion in population from July 7, 2021, through April 1, 2023, was 4.3 in Uttar Pradesh, compared with 70.4 in all of India and 1,596.3 in the United States, according to the study.

Although Peru had more comprehensive data, the Uttar Pradesh data suggest that using ivermectin may prevent and potentially treat COVID-19.

"These encouraging results from IVM [ivermectin] treatments in Peru and similar positive indications from Uttar Pradesh, India, which have populations of 33 million and 229 million, respectively, offer promising models for further mass deployments of IVM, as needs may arise, for both the treatment and prevention of COVID-19," researchers concluded.

The authors considered factors that could influence their findings, such as the effects of a social isolation mandate imposed in May 2020, the varying genetic makeup of the SARS-CoV-2 virus, differences in seropositivity rates, and population densities across the 25 states. Still, they wrote that the extent and reliability of data showed that other factors didn't significantly influence study outcomes.

Megan Redshaw is an attorney and investigative journalist with a background in political science. She is also a traditional naturopath with additional certifications in nutrition and exercise science.

FOOD AS MEDICINE

Popular Indian Spice Becomes the Latest 'Superfood'

A common spice promotes fat loss and reduces inflammation, researchers discover

By Mary Gillis

According to a new study published in the International Journal of Molecular Science, a common spice widely used across the globe joins a growing list of "superfoods" known to facilitate weight loss, reduce inflammation, boost exercise recovery, and lower chronic disease risk.

Cardamom seed, sometimes described as having eucalyptus, mint, and pepper scents, is a key ingredient in many Indian dishes, such as curry, rice pudding, and chai. In addition to its warm, savory flavor, the spice carries a range of health benefits thanks to its naturally occurring compounds.

These compounds stimulate metabolism, leading to increased calorie burn and the production of antioxidants and anti-inflammatory responses by controlling key pathways between the brain and gut.

Researchers at Texas A&M University assigned groups of mice to a diet consisting of 3 percent, 6 percent, or 12 percent of cardamom seed versus a control diet with none. After 14 weeks, they found that even though rodents fed cardamom were hungrier and ate more calories, the mice also showed a better ability to break down fat tissue, had less body fat, and had more lean mass than the control group.

The researchers then extrapolated their findings using a mice-to-human equation. They estimated that a 132-pound adult would need to consume at least 14.5 grams of seeds per day (roughly 3.5 teaspoons), to reap similar benefits.

Incorporating small amounts of cardamom seed into one's diet is a simple and effective way to improve health in several ways and in different sectors.

"Cardamom is a spice little known in the U.S., but very common in other parts of the world," principal investigator Luis Cisneros-Zevallos said in a statement. "What we found is that this small spice can burn calories and maintain body weight while increasing appetite and food consumption."

In addition to weight loss benefits, cardamom improved mitochondrial activity in the muscles and liver. Healthy mitochondrial activity is essential for energy production and plays a critical role in recovering from exercise, slowing the aging process, and warding off disease.

The discovery made by the cross-colaborative team presents an amazing opportunity with real-world implications, Mr. Cisneros-Zevallos said. Incorporating small amounts of cardamom seed into one's diet is a simple and effective way to improve health in several ways and in different sectors, such as the sports industry, functional foods production, and dietary supplements, he said.

"These preclinical results pave the way for further research aiming to deepen our understanding of the endocrine and metabolic effects of cardamom, and bolster the use of cardamom seed ... in the treatment of metabolic disease," the authors wrote.

Mary Elizabeth Gillis is a health reporter and cardiopulmonary specialist with over a decade of experience. After graduating with her doctorate in applied physiology, she earned a master of science degree in journalism from Columbia University.



AJAYKAMPAN/GETTY IMAGES

Cardamom has been found to improve mitochondrial function in the muscles and liver.

The Ultimate Guide to KICKING SUGAR

PART 2 STEVIA LOWERS BLOOD SUGAR, FIGHTS DIABETES

This popular game-changing sweetener is being studied for its medicinal effects

In this series, we explore the good and bad sugars and sweeteners, including popular natural ones, uncover the unexpected outcomes of cutting out sugar, and discover the ultimate way to do so.



Previous Parts:
[TheEpochTimes.com/KickingSugar](#)

By Flora Zhao

Stevia has recently become one of the most popular natural sugar substitutes. Sugar is known to raise blood sugar levels, but stevia can actually lower them. In fact, it was even used to treat diabetes in ancient times.

Stevia is also known as honey leaf, sweet leaf, or sweet herb. According to a paper published in Nutrition Today, it belongs to the sunflower (Asteraceae) family and is native to southern Brazil and northern Paraguay. The indigenous Guaraní people have been using stevia to sweeten their food and beverages for centuries. According to a 2019 meta-analysis published in Nutrients, they have also used it for medicinal purposes, such as treating diabetes.

Stevia's sweetness mainly comes from steviol glycosides, which are about 200 to 300 times sweeter than sucrose.

High-purity stevia extracts contain 95 percent or more steviol glycosides, according to the Nutrition Today paper. A 2023 study published in Molecules found eight different types of steviol glycosides that occur naturally in stevia leaves, with stevioside being the most abundant.

Because of its commercial potential and pharmacological properties, stevia has attracted widespread attention from the food and scientific community. As a result, stevia plantations can now be found in many regions around the world.

Stevia's glycemic index (GI) and calorie content are zero. The glycemic index measures how quickly and to what extent a food increases blood sugar levels, also called blood glucose levels, with glucose being the standard at a GI value of 100.

A Sweetener With Anti-Diabetic Properties

Modern research has found that stevia exhibits anti-diabetic activity.

Stevia not only increases insulin secretion and activity but also reduces insulin resistance. It also inhibits or reduces the liver's production of glucose, which helps

maintain healthy blood sugar levels. Additionally, the stevioside and steviol found in stevia help to regulate the activity of certain enzymes, preventing blood sugar from dropping too low and causing hypoglycemia.

Researchers from the University of Florida conducted an experiment in which 31 adult participants fasted for 12 hours and ate the same breakfast. Twenty minutes before lunch and dinner, they were given tea and snacks containing sucrose, aspartame, or stevia, without knowing which type of sugar they were ingesting. They were then free to eat lunch and dinner as they wished.

Their hunger and satiety levels were evaluated hourly, and blood tests were conducted. All participants completed three days of food tests.

The results showed that participants who consumed stevia had significantly lower blood sugar levels right after lunch than those who consumed sucrose, and they had no significant fluctuations.

Additionally, after lunch, the insulin levels of participants who consumed stevia were overall lower than those of participants who consumed aspartame or sucrose.

"It would suggest that compared to other types of sweeteners, stevia could be beneficial in helping people keep their glucose levels under control or in a healthy range after eating," study co-author Stephen Anton, a professor

in the department of physiology and aging at the University of Florida who has a doctorate in clinical and health psychology, told The Epoch Times. "Compared to sucrose and aspartame, stevia could lead to better post-meal metabolic states."

Moreover, participants who consumed stevia and aspartame had a significantly lower total caloric intake.

Although participants who consumed stevia before meals didn't obtain calories

Stevia could be a very good substitute for the sugar that we are consuming too much of.

Per Bendix Jeppesen, associate professor, Aarhus University

from it, they didn't compensate for the calorie difference by consuming more during lunch or dinner compared with those who consumed high-calorie sucrose. Furthermore, their satiety levels were similar.

A randomized, controlled trial on diabetic patients published in the Journal of the Science of Food and Agriculture in 2016 further demonstrated the blood sugar-lowering effect of stevia. Twenty patients with Type 2 diabetes were randomly divided into two groups, one taking 1 gram of dried stevia leaf powder daily and the other not taking any. The experiment was conducted over 60 days.

The results showed that taking dried stevia leaf powder significantly reduced the fasting and postprandial blood sugar levels of these diabetic patients.

In a human study conducted in the 1980s, 16 healthy volunteers consumed 5 grams of aqueous stevia leaf extract every six hours for three consecutive days. The results showed that the intake of stevia leaf extract increased glucose tolerance, and all volunteers had reduced plasma glucose levels during the testing period and after overnight fasting.

"I see that using stevia as a sugar substitute can bring about a huge change," said Per Bendix Jeppesen, an associate professor in the department of endocrinology and diabetes at Aarhus University in Denmark who is currently studying stevia extract as an anti-diabetic drug and as a healthy sweetener.

"It is a game changer," he told The Epoch Times.

That's because the main component of stevia has positive effects on the human endocrine system, especially for people with diabetes. In addition to studying stevia's effectiveness and extraction techniques, Mr. Jeppesen is involved in related experiments on anti-diabetic drugs.

Modern people tend to engage in too little physical activity, consume too much food, and eat diets that are high in sugar and fat. Mr. Jeppesen said: "Stevia could be a very good substitute for the sugar that we are consuming too much of. By adding stevia, it could really enhance public health, as the calorie intake would decrease when we consume less sugar."

Effects on Metabolism, Blood Pressure, and Blood Lipids

In addition to controlling postprandial blood sugar and other anti-diabetic effects, stevia can lower blood pressure and blood lipids. Steviol glycosides found in stevia can regulate the level of calcium in the blood, which can lead to vasodilation and reduced arterial contraction, both of which contribute to lowering blood pressure, according to the 2023 Molecules study.

Researchers in Taiwan conducted a randomized, double-blind, placebo-controlled trial on hypertensive patients in which 174 hypertensive patients were divided into two groups. One group took steviol glycoside capsules three times a day, each containing 500 milligrams of steviol glycoside, while the other group took a placebo. Two years later, those who took

steviol glycoside showed significant improvements in their blood pressure: Their systolic blood pressure decreased from an average of 150 to 140 mm Hg, and their diastolic blood pressure decreased from an average of 95 to 89 mm Hg.

Notably, the beneficial effects of steviol glycosides on hypertensive patients were observed approximately one week after the start of the experiment and continued throughout the entire study. Additionally, the group taking steviol glycosides had significantly improved overall quality of life scores, as measured by a survey.

The Nutrients meta-analysis included seven studies and nine randomized controlled trials involving 462 participants. The analysis revealed that compared with taking a placebo, steviol glycosides significantly reduced systolic blood pressure by 6.32 mm Hg and diastolic blood pressure by 3.6 mm Hg. Additionally, there were non-significant reductions in body mass index, fasting blood sugar, and total cholesterol.

Stevia can also lower blood lipids. A review study showed that consuming stevia extract can significantly increase the level of high-density lipoprotein ("good" cholesterol) and reduce the levels of total cholesterol, triglycerides, and low-density lipoprotein ("bad" cholesterol).

Anti-Inflammatory and Antioxidant Properties

Stevia contains more than 100 compounds, many of which benefit our health. In addition to natural sweeteners and various trace elements, stevia contains terpenes, sterols, tannins, volatile acids, flavonoids, vitamins, enzymes, organic acids, and polysaccharides, all of which have biological activity.

For instance, the most abundant polyphenol component in stevia leaves is chlorogenic acid, which exhibits excellent antioxidant activity and various therapeutic properties, including anti-diabetic, antimicrobial, anti-inflammatory, and anticancer effects.

According to the Molecules study, steviol glycosides have been found to suppress and control factors that trigger cell inflammation. They also play a protective role in the liver by preventing inflammation and have been shown to enhance the body's innate immune system.

In addition, steviol glycosides exhibit antioxidant properties. The study published in Molecules in 2023 demonstrated that they can protect heart cells from damage caused by hydrogen peroxide, resulting in increased vitality and improved antioxidant capacity. They can also prevent oxidative DNA damage in the liver and kidneys.

Minimal Side Effects

According to a paper published in the Experimental and Clinical Sciences (EXCLI) Journal, Paraguayans have been consuming stevia continuously for more than 1,500 years with almost no adverse effects reported. Additionally, a review study indicates that most reports on stevia consumption don't suggest any adverse events.

Stevia is a very safe sweetener, as it's considered nontoxic, non-mutagenic, and non-carcinogenic.

The acceptable daily intake of steviol glycosides, as defined by the U.S. Food and Drug Administration and the European Food Safety Authority, is 4 mg per kg body weight, or about 1.8 mg per pound.

Mr. Jeppesen stated that these agencies took more than 10 years to conduct rigorous evaluations before listing stevia as a food additive. However, stevia has been widely used as a sweetener in Japan since the 1980s, and there have been no reports of adverse effects.

An earlier rat study mentioned in the EXCLI Journal suggested that stevia might affect the fertility of experimental animals. However, Mr. Jeppesen said that the final results of these studies generally weren't accepted.

How to Choose Stevia Sweetener

Despite stevia's benefits, not all stevia products available for sale are high quality.

Some products have been found to contain artificial sweeteners sodium saccharin and sodium cyclamate. In addition, crude stevia extracts may have a higher allergenic potential than high-purity stevia sweeteners



Stevia has long been used in some cultures and has been variously referred to as sweet herb, sweet leaf, or honey leaf.

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HOW TO MAKE STEVIA LIQUID AT HOME

Stevia leaves can be harvested multiple times a year by cutting the stems and removing the leaves. If there's an excess of fresh leaves that can't be consumed quickly, they can be dried and stored using the hot-air drying method.

Although shade drying may preserve more active compounds, it isn't recommended, as there's a risk of contamination from mold and rot during the process, according to the Applied Microbiology and Biotechnology study.

A drying temperature between 104 and 122 degrees F (40 and 50 degrees C) is more appropriate, as it can maximize the retention of the phenolic and flavonoid content in stevia leaves.

The simplest way to effectively extract stevioside from stevia is by soaking the dried leaves in water at 194 degrees F. The primary method for extracting stevioside from stevia on an industrial scale also involves soaking in hot water. Such a physical extraction method has been proven not to alter the quality of stevioside.

Simmer the extracted liquid over low heat until its volume has been reduced. Because no preservatives are added, this type of homemade liquid needs to be refrigerated and protected from contamination when used.



TIPS FOR GROWING STEVIA PLANTS AT HOME

If you want to go completely organic, you can try growing your own stevia plant.

Stevia is a hardy plant that will thrive under the right conditions. Provided with adequate light and well-draining, lightweight soil, stevia plants will produce more leaves with higher levels of steviol glycosides.

Stevia leaves contain eight different steviol glycosides, and rebaudioside A has been found to have a more pleasant taste than stevioside. Some high-quality stevia varieties with a higher content of rebaudioside A than stevioside have been developed in recent years. When purchasing stevia products, check the label for information on the rebaudioside A content.

To ensure the best taste of the leaves, it's crucial to prune the mature flower buds promptly. According to a recent study published in Applied Microbiology and Biotechnology, this is because the levels of sweet compounds in stevia leaves will significantly decrease during the flowering process.

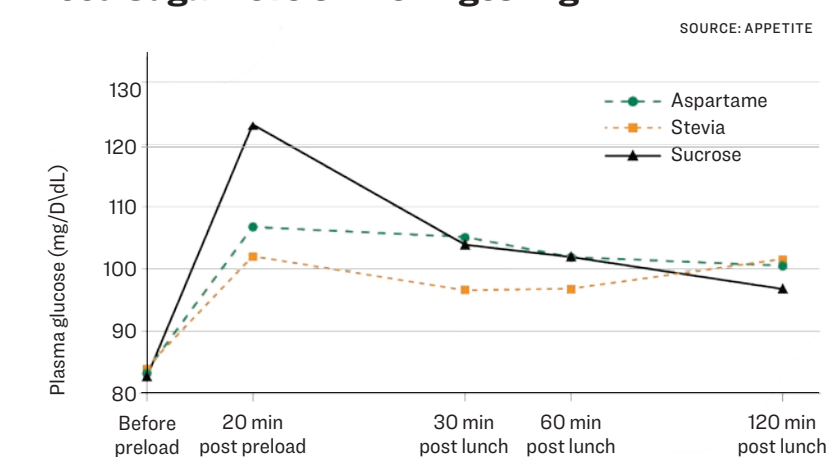
Adjusting watering levels and applying organic fertilizers based on temperature and humidity is also essential. Stevia is not cold tolerant, so it should be moved indoors during winter or have a thick layer of straw mulch added to its roots for insulation.

For inexperienced growers, starting with stevia seeds can pose obstacles, as they are quite difficult to germinate; it might be more convenient to propagate stevia through stem cuttings or purchase stevia seedlings directly.

Stevia's sweetness mainly comes from steviol glycosides, which are about 200 to 300 times sweeter than sucrose.

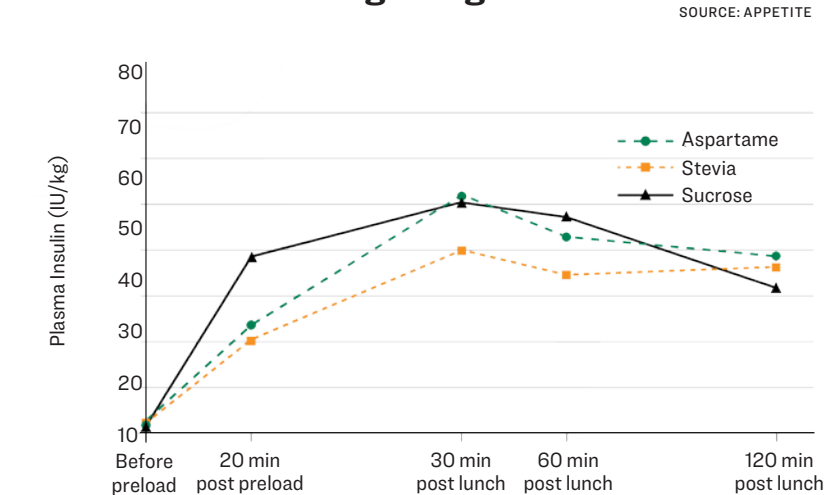
Stevia not only increases insulin secretion and activity but also reduces insulin resistance.

Blood Sugar Levels After Ingesting



▲ While plasma glucose (blood sugar) levels spiked after consuming sucrose, they stayed relatively stable after eating stevia. Aspartame showed a similar pattern but stevia is considered a more nutritious and healthy low calorie sweetener. (The Epoch Times)

Insulin Levels After Ingesting



▲ Stevia resulted in healthier levels of insulin in the blood compared to both sucrose and aspartame with the lowest spike 30 minutes after eating.

NEXT WEEK Monk fruit: a natural sweetener with antiviral effects.



Can the Vaccine–Autism Question Ever Be Answered?

Discussing the possible link between vaccines and autism is a taboo that needs to be challenged, suggest experts

Continued from Page 1

vaccines. By applying new analytics to 25 previous studies, it's made the strongest link between autism and the gut. The U.S. Centers for Disease Control and Prevention's (CDC's) website has a page about autism and vaccines that declares, "Vaccines don't cause autism."

But the unanswered question that Dr. Wakefield's observational study posed still lingers: Could vaccines cause gastrointestinal (GI) issues that are unique to autism? The issue is no less controversial today.

Vaccines Should 'Sit in the Background'

GI issues are connected to the gut microbiome, which is all the bacteria, viruses, and fungi that live mostly in the colon. They break down food into metabolites that are vital for the body's digestive and neurological functions, among other roles. The microbiome-autism link has never been stronger, especially with 43 researchers contributing to the new data analysis.

But Jamie Morton, one of the Nature study's corresponding authors, emphatically states that there's no vaccine link—even though he said there are no data available on how vaccination may alter the microbiome for good or bad.

"I don't even know if there is microbiome data for that to help with those kinds of insights," he said.

There's sufficient evidence already, he added, that vaccines aren't contributing to the rising rates of autism. New rates from the CDC show that 1 in 36 children are diagnosed with autism.

"There's enough studies on this that it needs to sit in the background for now," Mr. Morton said, pointing to a 2014 meta-analysis in *Vaccines* that examined the issue, as well as to the CDC's website of recommended reading.

"Given how much study there has been with vaccines, I'm a little speculative on the penetration of vaccines. I'm not convinced there's a large detrimental effect of that."

The only way to resolve the causality issue, he said, is a comprehensive look at all the factors that affect the microbiome throughout pregnancy and childhood.

Mr. Morton pointed to the National Institutes of Health program called environmental influences on childhood health outcomes (ECHO) as one resource that is looking at childhood vaccinations, among other factors. ECHO is following 50,000 children from before birth to look at how environmental exposures such as to chemicals could be affecting health, including autism spectrum disorder (ASD). ECHO communications director Rebekah Yeager didn't acknowledge whether childhood vaccinations were ever considered for the study, but they aren't getting consideration.

"Investigators collect limited information on childhood vaccines, such as asking caregivers whether there have been delays in getting childhood immunizations and the reasons for the delay," she told *The Epoch Times*.

The ECHO cohort doesn't have microbiome data, but it is collecting specimens that Ms. Yeager said can be used for microbiome analysis in the future. The only trial related to vaccines connected with ECHO is examining whether a mobile health app is influencing parental decisions to vaccinate children against COVID-19.

Wakefield Study Chilling Effect

All research begins with observations of something new or interesting that could merit more study, which was what Wakefield explained about his study, as he noted vaccination concerns among the emerging issue of GI complaints from his patients with autism. It's a similar style—albeit a much smaller cohort—to that of the ECHO project, which examines lab reports alongside information collected from parents.

But the controversial global reaction to the Wakefield study created a cooling effect on sincere investigations into possible links, not just between vaccines and autism but even gut health and autism, Dr. Arthur Krigsman told *The Epoch*



Vaccines require healthy immune function, so experts suggest you delay a vaccination if ill.

What are the conditions that cause people to get hurt by this? Let's investigate it rather than ignoring it and saying it doesn't happen and so on.

Kiran Krishna, microbiologist

Times. He's board-certified in pediatric gastroenterology, hepatology, and nutrition and treats children with ASD all over the world.

"Good GI researchers became afraid to look carefully at GI disease in autism because in that initial 1998 paper published in *The Lancet*, parents expressed concern about a particular vaccine, the MMR vaccine ... which forever linked autism, GI disease, and MMR," he said. "These three items really should not be linked and certainly not because of a case study of 12 patients."

"If a kid has GI disease, that should be looked at for its own sake, regardless of what caused it."

Dr. Krigsman said the stigma and fear of the "anti-vaccine" label changed the way researchers and clinicians have approached ASD, and in particular the investigation of GI disease in patients with autism.

The effect, Dr. Krigsman said, has meant vaccine safety in general hasn't gotten enough attention, to the detriment of children and their families who don't know the true risk of vaccine injuries.

Putting Vaccines in Perspective

Those who are demanding more research are also among the first to say it's highly unlikely that vaccines are the sole cause of autism. Many believe that vaccines may work in conjunction with other factors to trigger the onset of symptoms in regressive autism.

"I don't think that it's the issue. But I do think it can trigger an immune mediated regression when the wrong kid gets a vaccination at the wrong time," Dr. Armen Nikogosian, a functional physician who specializes in autism, told *The Epoch Times*.

"Part of what the data shows is that some people can be susceptible to the effects of vaccinations when other people aren't. Nobody is willing to have the conversation that they can sometimes hurt people. "I don't know why we think it's one-size-fits-all with the shots. It's not one-size-fits-all with pharmaceuticals. It is well established that some kids simply can't take some medications—so we don't give them or find alternatives. Vaccines should follow the same principle."

The only way to end the debate is a study that compares unvaccinated children

with vaccinated children to see whether childhood shots are associated with the disorder. However, Dr. Krigsman added that such a study "is unlikely to be funded, and upper tier journals will be reluctant to publish it" because of the controversy around the issue.

"I don't know what the solution is, but clearly vaccination is at least one of the triggers for autism" as evidenced by the U.S. Court of Federal Claims' having compensated a number of parents for vaccine related injuries, including autism, he said.

"It could be a few or it could be most of the autistic kids. We won't know without a vaccinated versus unvaccinated study."

Complex Immune System Interplay

Inflammation is a normal, healthy response in the human body that helps fight infection and build a resilient immune system. Microbiota modulate immunity, and as a 2017 *Frontiers in Microbiology* article pointed out, "correlations between gut bacteria composition and the severity of inflammation were first described for inflammatory bowel diseases and later extended to other pathologies."

Genetics, environmental factors, and

diet can strongly influence microbial makeup, according to the article, in turn altering gut permeability, allowing pathogens to cross the gut barrier and trigger infection or chronic inflammation. These immune system complexities are what can result in vaccine adverse reactions, microbiologist Kiran Krishna told *The Epoch Times*.

A study published in 2019 in *Cell* found that antibiotics can stifle the effectiveness of the flu vaccine because they kill microbes beneficial to the immune response. The study highlights that "microbiome loss impairs antibody response in subjects with low pre-existing immunity" and "antibiotics treatment leads to enhanced inflammatory signatures in the blood."

Antibiotics are used in some vaccines to keep them safe from pathogens, as explained by the U.S. Food and Drug Administration. Antibiotics used during vaccine manufacture include neomycin, polymyxin B, streptomycin, and gentamicin.

"Any sort of compromise to the gut microbiome reduces the functionality of the immune system," Mr. Krishna said. "If your gut microbiome is compromised and you take something like a vaccine that is dependent on proper function of the immune system, that could have an adverse effect."

A 'Lightning Rod' Issue

Mr. Krishna said the claim that vaccines cause autism is a lightning rod for controversy.

"There's always a certain number of people who get hurt from vaccines or don't respond properly," Mr. Krishna said. "That certain parts of the industry want to bury that makes it a bigger lightning rod. That gets people fired up and makes [pharmaceutical companies] want to combat it, rather than illuminating there's a certain percentage of people who get hurt by this."

"What are the conditions that cause people to get hurt by this? Let's investigate it rather than ignoring it and saying it doesn't happen and so on."

That's why it's important for physicians and researchers to hear what parents are saying on the issue, Dr. Krigsman said, because when they don't feel heard by the medical establishment, it can be detrimental to healing and to the advancement of medicine.

"You listen to the patient's parents and what they have to say. You believe them," he said.

"Parents are saying something. They made observations, and they're very intuitive parents. It should be looked at, as should other things, and it's not. Parents deserve to know the risk so they can weigh it."

Adults are able to monitor their own risks by assessing overall systemic inflammation. For instance, Mr. Krishna said he monitors his body temperature and any symptoms that might indicate he's fighting off an infection for three to four days before getting vaccines to make sure his body isn't overtaxed. If he's sick, he said the shots aren't worth the risk.

Many believe that vaccines may work in conjunction with other factors to trigger the onset of symptoms in regressive autism.

Insulin Resistance Is 'Main Culprit' for Heart Disease, Doctors Say

Research suggests the best way to prevent heart disease could be to prevent diabetes

Continued from Page 1

Insulin resistance is the leading cause of Type 2 diabetes and an indicator of metabolic health. One study found that more than 80 percent of Americans were metabolically unhealthy, with nearly half prediabetic.

Type 2 diabetics face at least a two-fold risk of developing cardiovascular disease, and most die from cardiovascular events. However, this is often missed in the literature, professor Ian Givens, who specializes in nutrition at the University of Reading, told *The Epoch Times*.

"The certification of death says cardiovascular disease—doesn't say diabetes, which is technically true because that is what they've eventually died from," Mr. Givens said. However, this perspective overlooks crucial information: It was diabetes that led the person to die from heart disease.

What Is Insulin Resistance?

Insulin, a hormone released into the

bloodstream when blood sugar rises after a meal or other sugar consumption, directs the body's fat, liver, and muscle cells to absorb the blood sugar for energy metabolism or storage, restoring normal blood sugar levels.

Insulin resistance occurs when the body's cells no longer respond to insulin and don't absorb blood sugar. Then, the brain signals pancreatic beta cells to secrete more insulin to help, and over time, the body's insulin resistance intensifies. Ultimately, the overworked beta cells deteriorate and die off and blood sugar gets out of control.

Insulin Resistance and Heart Disease

In an article published in *The Pharmaceutical Journal*, the official journal of the Royal Pharmaceutical Society, renowned Drs. Asem Mallhotra and Robert Lustig wrote that insulin resistance is the "main culprit" of heart disease.

Insulin resistance contributes to all of the major heart disease risk factors,

Atherosclerosis
Atherosclerosis involves the development of plaques within blood vessels and eventual cardiovascular events such as heart attacks.

The elevated insulin production that comes with insulin resistance results in chronically elevated insulin levels in the body, which promotes chronic inflammation. This impairs blood vessel linings and fosters atherosclerosis. Additionally, inflammation heightens platelet activation, increasing vulner-

ability to blood clotting.

High insulin also contributes to dyslipidemia—an imbalance in blood lipids, or fats. Dyslipidemia manifests as high blood triglycerides, low levels of high-density lipoprotein (HDL) cholesterol, and high levels of low-density lipoprotein (LDL) cholesterol, with insulin influencing all three components. As a storage hormone, insulin tells the liver to package ingested calories into triglycerides, a type of fat, to be distributed across the body for storage,



Resistance training builds muscle which boosts metabolic rate and improves glucose tolerance.

ALL PHOTOS BY GETTY IMAGES

elevating blood triglyceride levels.

Insulin suppresses HDL particle formation, reducing the "good" HDL cholesterol. When insulin levels increase, proteins that break down HDL particles also increase, which can cause an increased clearance of HDL particles from the blood.

"The HDL particle's job is to bring lipids from the body back to the liver," where they will "be recycled," according to Benjamin Bikman, who has a doctorate in bioenergetics and is a cell biology and physiology professor at Brigham Young University specializing in metabolic disease and the pathological effects of insulin.

"But the insulin doesn't want energy to be returning."

Hypertension

Insulin increases heart rate and blood pressure. One way it does that is by activating the sympathetic nervous system.

The sympathetic nervous system is responsible for activating the fight-or-flight response, usually during periods of stress. That stress can be psychological or physical. Insulin can trigger a similar reaction. During the fight-or-flight response, adrenaline and cortisol are released into the bloodstream, blood pressure rises, and the heart beats faster.

Apart from acting as a hormone for storage, insulin also promotes growth, which can cause the inner lining of the blood vessels to thicken, increasing blood pressure.

Obesity

Elevated insulin levels lead to the storage of consumed sugar as fat instead of promoting its immediate consumption for energy, according to Dr. Jason Fung, a nephrologist and metabolic expert. This is also why meals high in carbohydrates, triggering insulin spikes, often induce hunger more quickly.



Preventing Insulin Resistance

Reduce Refined and Starchy Carbohydrate Consumption
Insulin is uniquely sensitive to glucose, so cutting down on sugary and starchy foods can prevent spikes in blood glucose and insulin levels. Any food that's sweet, crunchy, or comes in packaging is usually high in carbohydrates, Mr. Bikman said.

Complex carbohydrates such as vegetables, legumes, and low-glucose fruits primarily consist of dietary fiber and have a minimal effect on blood sugar levels and insulin resistance. Consuming fat and simple carbo-

hydrates together is worse than consuming only carbohydrates or only fat. Although fat is calorically dense, fat by itself does not trigger insulin. However, in the presence of sugar or starches, insulin levels rise and stay up longer, Mr. Bikman said. Studies show that foods that combine sugar and fat increase cravings, stimulating overeating.

Practice Fasting and Chew Thoroughly

During fasts, no food is ingested, meaning there is no rise in blood sugar or insulin.

Fasting promotes the breakdown of fat in fat cells for energy and improves insulin sensitivity, according to a 2021 review.

According to Mr. Bikman, insulin resistance usually starts in the fat cells.

Fat cells can also expand up to 20 times their original diameter to accommodate more energy. But when fat cells reach maximum size and insulin prompts the cell to continue growing, Mr. Bikman said, they become insulin resistant.

Breaking down fat in these fat stores frees up room, thereby improving insulin sensitivity.

Chewing food thoroughly also helps; eating too quickly can result in swift spikes in blood glucose, triggering a robust insulin response. It is also

linked with poorer satiety, making one more likely to snack after a meal.

Sleep and Build Muscle

Adequate sleep prevents stress and inflammation, which contribute to elevated blood glucose levels and insulin resistance.

Muscles are the primary consumers of glucose, using up to 80 percent of ingested glucose daily. If one maintains sugar intake while muscle mass decreases, excess sugar can't be entirely burned and gets stored as fat.

Studies show that foods that combine sugar and fat increase cravings, stimulating overeating.

Resistance training is the most effective exercise for increasing muscle mass, as suggested by David Stensel from Loughborough University, a specialist in exercise metabolism. He also recommends combining aerobic exercises with resistance exercises. Aerobic exercises are continuous, allowing people to engage in them for longer.

Aerobic and resistance training stimulate the release of growth hormones, which promote muscle development and boost metabolic rates.



HALF POINT IMAGES/GETTY IMAGES

Palliative care can offer patients an extra layer of support when facing a difficult diagnosis.

PREPARING FOR A GOOD END

PART 6 | PALLIATIVE CARE: LIVE BETTER FOR LONGER

Palliative care isn't about dying; it's about living well in the face of a devastating diagnosis

In this series, we'll examine ways of making meaning in the face of death, offering tools founded in traditional wisdom and scientific evidence to help our readers live well right to the very end.



Previous Parts:
TheEpochTime.es/
GoodEnd

By Sharleen Lucas

Palliative care is a widely misunderstood medical specialty, even among health care workers. Despite what many people think, it isn't end-of-life care, according to a leading U.S. palliative care physician, Dr. Steve Pantilat. In his book "Life After the Diagnosis," Dr. Pantilat describes the specialty: "Palliative care is a distinct medical specialty that helps seriously ill people live as well as possible for as long as possible and helps relieve their pain, stress, and other symptoms."

Take my father-in-law, Richard, for example. Starting at age 50, he journeyed for 30 years through heart disease, prostate cancer, colon cancer, and finally, a debilitating stroke. Ultimately, he endured three heart attacks, coronary artery bypass surgery, pacemaker and defibrillator insertion, two colectomies (partial colon removal), PEG tube insertion to receive feedings through his abdomen, two knee surgeries, and a hip replacement after a fall.

A member of the silent generation, he complained little and rarely expected more from life. However, underneath his stoic nature lay an undercurrent of spiritual unrest. He plodded along quietly with no one to talk with about his thoughts on dying, broken relationships, or ways to find

inner peace and contentment with life's regrets. Likely afraid of death, he agreed to every possible intervention, even to the point of misery and a debilitating stroke three days after colon surgery in his early 80s.

Certainly, the "golden years" weren't so golden, something Richard accepted as an irreversible reality. I've imagined how the last quarter of his life could have been with a palliative care physician to consult.

Palliative Care Provides Support for Living and Dying Well
Palliative care teams swoop in as an extra layer of physical, relational, emotional, and spiritual support for patients facing serious illness, such as Richard, at any stage. They don't just help patients die well. They help them live well from the beginning to the end of their disease journey.

In her book "Living Well with a Serious Illness," palliative care expert and advocate Robin Bennett Kanarek writes, "The root of the word palliative comes from Latin and means 'to cloak,' an image of soothing support.

Palliative care's primary goal isn't convincing patients to stop treatment and transition to hospice. Instead, through honest, open, and unhurried conversations, they help patients make treatment decisions in alignment with how they want to live, even if that means fighting off death with every available treatment.

Why We Need a Specialist for Extra Support

Palliative care grew from the global rise in chronic illness as the human lifespan began lengthening dramatically after the early 1900s. A few generations ago,

people died quickly from disease, illness, and trauma without adequate medical technology.

Today, medical advances allow people to live longer with serious illnesses such as cancer, dementia, ALS, Parkinson's, and heart, lung, liver, and kidney disease, to name a few. Still, while many live longer, they may not live better. Chronic illness can be debilitating and highly stressful, reducing the quality of life for many seriously ill patients.

Unlike other providers, palliative care experts train rigorously to care emotionally, spiritually, and physically for patients—and their loved ones—with distressing long-term diagnoses. Most palliative care patients eventually die from their disease, but often after years of living with the condition and receiving disease-focused treatment.

Teams providing supportive care, another term for palliative care, specialize in walking the entire journey with patients and their loved ones up through their final days when they transition to hospice. Hospice is indeed end-of-life care, but palliative care as a whole offers a wider scope.

Palliative care experts train rigorously to care emotionally, spiritually, and physically for patients—and their loved ones.

Relieving the Suffering of Overtreatment

With a health care system that excels at extending lifetimes, patients are often motivated and encouraged to try every treatment up to their dying day, no matter how much misery results. Ultimately, they receive little guidance on living well and making peace with death when it approaches. This avoidance from providers and patients alike fuels endless rounds of treatments, adding "suffering in hope of relieving more suffering," Dr. Pantilat said.

A 2022 study published in JAMA Surgery found that 1 in 7 older adults living in retirement and nursing communities died within one year of major surgery. That rate rose to 40 percent with emergency surgery. Frail patients and those with dementia were the most likely to die within a year of the procedure.

Richard is a telling example. Three days after surgery to remove colon cancer, he suffered a stroke, which is a leading risk for heart disease patients who stop blood thinners before surgery. His stroke left him unable to swallow safely, leading to a following procedure to insert a PEG tube for regular feedings. He couldn't eat or drink for a year.

Cancer presents an even starker challenge. According to a 2022 study published in AINS, a German medical journal, up to 50 percent of cancer patients die within four weeks of chemotherapy, leaving them too sick and frail to prepare for death, reconcile with loved ones, and find peace in their final days.

"Of note," the study's authors wrote, "treating physicians often overestimate the prognosis of patients," making recommendations and decisions difficult. Compounding the problem further, providers frequently fear discussing raw truths with patients.

Another example of what the study found, my mother-in-law, Priscilla, lived for barely one month after her first round of chemotherapy. She spent a mere two days at home after the treatment and returned to the hospital, where she died a month later. My husband recalls that her doctor offered no alternative and little discussion about the miseries of chemotherapy.

The Earlier the Better

The benefits of palliative care are impressive, including helping patients live better for longer, offering precious time with loved ones. The key is to engage in supportive care earlier rather than later. "To have a meaningful effect on patients' quality of life and end-of-life care, palliative care services must be provided earlier in the course of the disease," the study's authors wrote.

Supportive care experts, such as Dr. Pantilat, say "early" means "at the time of diagnosis."

Many studies agree. Most patients wait to engage a palliative physician until their final weeks of life, when they consider hospice. Data suggest that this delay reduces a patient's chances of living better and possibly longer. Early care significantly increases the likelihood that patients receive care that meets their goals, undergo

less futile and distressing treatment, and stay out of the hospital.

Earlier support also helps loved ones process and resolve their sorrow better when a patient's disease worsens, reducing prolonged, complicated grief.

Ask For a Palliative Care Consult

Unlike hospice, full palliative care services aren't available everywhere yet. Still, Dr. Pantilat urges those facing serious illness to ask for a palliative care consult, even if their physician insists that they "don't need it yet."

Ms. Kanarek, who suffered with her son, David, during his five-year battle with leukemia, agrees.

"If you don't know what palliative care is, you aren't going to ask for it, and that means you won't get it," she said. "This is a well-established fact, and one that I know from personal experience."

Palliative care is a distinct medical specialty that helps seriously ill people live as well as possible for as long as possible and helps relieve their pain, stress, and other symptoms.

Dr. Steve Pantilat,
palliative care physician

At age 15, David died before palliative care was available.

For those with a serious illness, palliative care could be a lifesaver—breathing life into whatever time one has left.

Dr. Pantilat told his students at the University of California, "If palliative care were a pill, every doctor would prescribe it and every seriously ill patient would take it."

Sharleen Lucas, R.N., is a freelance writer with medical, spiritual, and emergency care expertise. After two decades of serving patients and families at the bedside or as a spiritual care director, she's committed to empowering readers' physical and spiritual well-being by boiling down health information with the warmth and skill of an RN next door. You can find her at RNextdoor.com

NEXT WEEK

How to fix broken relationships.

Ease Inflammation to Slow Aging, Improve Cognition

6 strategies to combat chronic intestinal inflammation and have a healthier mind and body

By Amber Yang & JoJo Novaes

Chronic inflammation is a major health concern. Long-term chronic inflammation can accelerate aging and cause cognitive dysfunction and liver disease, kidney disease, and other diseases.

Dr. Zheng Yuanyu, former principal physician of the infectious disease department at Taipei Veterans General Hospital and internist at the Taiwan Shangwen Clinic, said on The Epoch Times' "Health 1-1" program that chronic intestinal inflammation is quite common and difficult to detect yet poses a threat to other organs. He also explained how to apply a few simple tricks to counter this inflammation.

When foreign bacteria or viruses infect the body, physical manifestations, such as redness, swelling, heat, and pain, will appear. This physiological response produced by the body's immune system is called inflammation. Inflammation aims to keep harm done to the body at a minimum while removing dead cells and metabolic waste. Then the body can rebuild and repair tissue.

In an inflammatory response, small arteries spread to the capillaries and increase the permeability of the microvascular network. This allows substances in the blood vessels to exit the vessels. While blood cells converge at the damaged parts of the body, allowing the immune system to produce a variety of chemicals that aid in the immune response.

Dr. Zheng said that most of the noticeable inflammatory reactions indicate acute inflammation. However, long-term chronic inflammation will set in if the immune system is continuously stimulated. Some chronic conditions, such as rheumatoid arthritis, have apparent signs of inflammation that cause long-term joint pain and deformation. However, chronic inflammation of the gastrointestinal (GI) tract is less obvious, despite how common and harmful it can be in the long run.

The Theory Behind Chronic Intestinal Inflammation

The GI tract operates under extremely harsh conditions. On the one hand, the stomach secretes potent gastric acid with a pH value of about 1, while the duodenum secretes alkaline liquid to neutralize the acidic food digested by the gastric acid. These digestive juices work together to destroy bacteria and break down proteins. The GI tract helps digest food through peristalsis, extrusion, and friction, producing metabolic waste and toxins.

Dr. Zheng said these digestive processes cause a normal loss of epithelial cells in the stomach and intestines every four or five days. These cells must be replaced with new ones. If the burden on the stomach and intestines increases, the loss of gastrointestinal cells is exacerbated. This excessive loss will cause low-level but continuous chronic inflammation.

Things that increase gastrointestinal burden include insufficient fiber intake, lack of sleep, prolonged stress, bad mood, and intake of irritating food, such as alcohol.

According to Dr. Zheng, a meat-based diet that doesn't include many vegetables will starve certain healthy bacteria in the GI tract of cellulose, their food source, reducing bacterial abundance. In addition to cellulose, some bacteria need the mucus secreted on the surface of the GI tract to survive. With too much mucus available, these bacteria flourish, result-

ing in an imbalance in the symbiotic microbial system.

Once certain intestinal bacteria consume the mucus layer for nutrients, this barrier becomes less robust, giving pathogenic bacteria a chance to damage the epithelial cells and even invade other intestinal cell layers.

Dr. Zheng said that intestinal cell damage and bacterial invasion cause inflammation. This means that insufficient dietary fiber intake alone is enough to cause chronic, higher-level intestinal inflammation.

The Dangers of Chronic Intestinal Inflammation

Healthy cells along the intestinal wall are closely aligned and tightly connected like the teeth of a zipper, providing no gaps for macromolecules other than nutrients to permeate the intestinal wall and enter the rest of the body. If there are gaps, and the intestinal wall becomes permeable, it is sometimes called "leaky gut."

Inflammation aims to keep harm done to the body at a minimum while removing dead cells and metabolic waste.

Chronic intestinal inflammation increases the intestinal tract's permeability, making it easier for harmful macromolecules such as allergens, bacteria, and toxins to circulate through the rest of the body via the bloodstream. If this happens, other organs and processes are affected.



Liver

The liver is responsible for detoxification. Nutrients absorbed by the intestinal tract are delivered to the liver for processing. When chronic inflammation increases intestinal permeability, harmful substances leaked into the body will go to the liver to be processed, thus overtaxing the liver while it tries to detoxify. In addition, the toxic substances the liver fails to process will continue circulating via the bloodstream, affecting other organs.



Cognitive Function

A review of studies published in January showed substantial evidence that Parkinson's disease patients have different gut microbiomes and metabolites from those of healthy people.

Another study published in the journal PLOS ONE in July analyzed data from samples of 500,000 people from the UK Biobank and found that inflammatory biomarkers were associated with impaired cognitive performance.



Emotions

A review of studies published in BMJ Nutrition, Prevention & Health in 2020 showed that taking probiotics (bacteria-containing foods or supplements) alone or combining prebiotics and probiotics can significantly improve symptoms of anxiety or depression. Probiotics are foods that provide the kind of fiber gut bacteria eat and metabolize.



Skeletal and Muscular Systems

Bone metabolism and muscle synthesis are related to the ecological balance of intestinal bacteria. An imbalance can cause osteoporosis and chronic arthritis and affect muscle metabolism and synthesis.



Lungs

Chronic respiratory inflammation, chronic bronchial inflammation, chronic obstructive pulmonary

disease, and fibrocystic and other lung problems are related to intestinal microbial imbalance.



Kidneys

Abnormal intestinal permeability caused by chronic inflammation allows inflammatory substances and toxins to flow into the body, increasing the risk of chronic kidney disease.

Inflammation, uremic toxins, and GI symptoms improved in patients with end-stage renal disease after receiving a course of probiotics, according to a meta-analysis published in 2019 in Digestive Diseases and Sciences.



Spleen

The spleen serves an immune function, and chronic intestinal inflammation adversely affects it.

How to Build Inflammation-Free Body

Dr. Zheng said that chronic inflammation can cause a lot of harm, including dementia, high blood pressure, high blood lipid levels, high blood sugar, obesity, sarcopenia, joint degeneration, weakened immunity, and physical frailty.

To improve intestinal health and combat inflammation, Dr. Zheng provided the following six strategies:

1. Supplement Dietary Fiber

Dietary fiber is essential in cultivating healthy bacteria in the gut and balancing the ecosystem of gut microbes.

Dr. Zheng suggested a daily intake of 20 to 30 grams (0.7 to 1.1 ounces) of dietary fiber. In addition to vegetables and fruits, at least one of the three meals should have whole grains as the primary source of calories, such as oatmeal and brown rice.

In addition to supplementing cellulose, eating various fruits and vegetables can provide other nutrients. For example, tomatoes contain lycopene, peppers have capsacin, eggplant has anthocyanins, pumpkins and spinach contain lutein, and carrots have beta carotene.

2. Consume High-Quality Fats and Oils

Dr. Zheng said some oils have anti-inflammatory effects. Choose oils containing omega-9 fatty acids, such as olive or camellia oil, for cooking.

In addition, you can eat fish with relatively higher oil content, such as salmon, tuna, mackerel, and sardines. These are rich in omega-3 fatty acids and have better anti-inflammatory effects.

3. Reduce Chemical Exposure

Pesticide residues in food and chemical additives in shampoo, facial cleansing products, sunscreen, and skin care products may also be related to chronic inflammation.

4. Improve Sleep Quality

Sleep plays a crucial role in physical, mental, and emotional health. According to a 2021 review of research, people with sleep problems are at greater risk of developing immune and chronic inflammatory diseases, and the relationship between sleep quality and immunity seems to be bidirectional. Improving sleep quality may positively affect immunity by reducing the incidence of diseases such as inflammatory bowel disease.

5. Regulate Mood

In May, an article published in Nature mentioned that psychological stress can exacerbate intestinal inflammation caused by certain intestinal diseases. It also pointed out that signals from the brain reach intestinal nerve cells, releasing inflammatory chemicals. Another study found that psychological stress can trigger inflammatory activity and emotional and cognitive changes. Therefore, reducing stress and adjusting mood is good for both the body and the mind.

6. Maintain Positive Relationships

A 2021 study published in Brain, Behavior, and Immunity identified social isolation and loneliness as factors that exacerbate chronic inflammation and are significant contributors to poor physical and mental health.

Maintaining face-to-face social interaction between people and establishing good social relationships is not only good for the spirit but also good for physical health.



Your stomach requires a constant supply of new gastrointestinal cells to manage the powerful acids that break down food.

(WOMAN) URBAZON/GETTY IMAGES; ALL ICONS BY NADHINKO/SHUTTERSTOCK

ALL PHOTOS BY SAMIRA BOUADU/THE EPOCH TIMES



A morning exercise routine can become a great way to boost your health and mood each day.

Best Morning Exercises to Boost Heart Function

These simple exercises give your heart a workout and strengthen core muscles

By Kevin Shelley

Your heart beats more than 100,000 times a day and about 40 million times a year, working tirelessly to keep your body freshly supplied with oxygen and nutrients while removing harmful waste.

If the vital capabilities of your heart drop, everything you do can suffer—

from work and play to general cognitive and physiological function.

One of my patients with cardiac disease expressed it this way: "Every day I wake up, it feels like someone just poured a 55-gallon drum of liquid fatigue on me."

"Many people underestimate how bad inactivity is for your heart and how beneficial even simple physical activity can be for maximizing your overall health and well-being," Patty Shelley, a certified nutritional endocrinology practitioner in Lynchburg, Virginia, told *The Epoch Times*.

Mrs. Shelley happens to be my wife. She has a long history of helping patients

work through metabolic difficulties that can raise the risks for heart disease.

Your heart needs exercise to stay healthy, but finding the time and knowing where to begin can be challenging. "First, get in the habit of activity and exercising, and then pursue a regimen that works best for you," Mrs. Shelley said.

The following simple exercises provide a great way to start an exercise regimen that will strengthen your heart function over time.

Kevin Shelley is a licensed occupational therapist with over 30 years of experience in major health care settings. He is a health columnist for *The Epoch Times*.

SIMPLE EXERCISES TO BOOST HEART FUNCTION

1 BRISK WALKING

"It's easy to underestimate the efficacy of walking, but it's real exercise, and well supported by research," Mrs. Shelley said.

Step 1: Start by walking slowly for five minutes. This allows the muscles, joints, tendons, and ligaments in your body to warm up.

Step 2: Accelerate to a brisk walk and maintain this pace for 10 minutes.

Step 3: After 10 minutes, slow your rate back to your starting pace to allow your body to cool down.

Don't think of this walk as a stroll. It's important to push yourself into a brisk walk. As you advance, you will be walking as fast as you can without running. Brisk walking is effective on flat surfaces, but combining it with hills and inclines will magnify results.



High Blood Pressure is Linked to Poorer Mental Health: Study

By Sarah Cownley

Lowering blood pressure can be beneficial in more ways than one, and recent research has revealed yet another important reason to watch our diet and stay active: mental health.

In a new study on the impact of cardiovascular health, researchers found that people with high blood pressure may face an increased risk for poorer psychological well-being as they get older. With such

powerful evidence linking physical health to emotional well-being, it's more important than ever to look after ourselves and ensure we're looking out for our overall physical and mental state.

Let's explore this groundbreaking research further. How is high blood pressure linked with poorer mental health?

The study from the Max Planck Institute for Human Cognitive and Brain Sciences (MPI CBS) in Leipzig, Germany, used a

large sample from the UK Biobank with over 500,000 study participants. They were able to show how higher blood pressure was associated with greater well-being, lower emotion-related brain activity, and fewer depressive symptoms.

Researchers also found that the threat of high blood pressure (hypertension) was linked to poorer mental health even before hypertension was diagnosed.

"In the clinic, we observe that those affected often feel tired and fatigued and then do not take their medication against the higher blood pressure because this additionally hits their mood," explains Arno Villringer, the study's last author.

In contrast, researchers also found that

2 DEAD BUG

Although this exercise works on virtually every muscle in the trunk, it's primarily focused on core muscles. It is a short, intense exercise that both strengthens muscles and increases heart rate. The dead bug exercise is more challenging to perform than it may appear.

Step 1: Lie on your back. You can choose a hard surface such as the floor or a soft surface such as your bed as long as you have enough room to extend your arms over your head horizontally. Reach your arms straight up toward the ceiling, keeping your elbows straight. Bend your hips and knees so that your thighs are oriented straight up toward the ceiling, keeping your knees bent at 90 degrees and your lower legs horizontal.

Step 2: Move one of your arms backward toward the surface you are lying on while extending the opposite leg down. Move both until they almost touch the surface. Move slowly, taking a second to move into position.

Step 3: From there, bring both your arm and leg back up to their original positions then alternate the same movements using your opposite arm and leg. Take one second to fully move into position.

With each movement counting as one repetition, try to complete three sets of 20 repetitions, allowing one minute of rest between sets.

Avoid holding your breath. You may feel particularly challenged at first, but don't be daunted, and try to stay with it. As your strength increases, the exercise will become much easier.



Step 1



Step 2

3 FAST FEET/QUICK FEET

This exercise is fast-paced and can strengthen your legs and core while enhancing your balance. Its real benefit, however, is that it can quickly increase your heart rate and allow you to keep it there. It's also easy to perform in small spaces.

Step 1: While standing, crouch slightly with your feet shoulder-width apart, your arms by your side, and your elbows bent.

Step 2: The fast feet exercise is like running in place, but instead of lifting your feet high, you lift them just enough to get them off the ground. You can start this exercise by performing a static march or jog, then gradually increase speed to increase intensity. The best speed is the fastest you can muster while maintaining your balance and avoiding pain.

Perform this exercise for one minute per set and do three sets. You can add time to each set or increase the total number of sets to enhance intensity.

Once you work up to a fast run, this exercise comes into its own. It can provide a surprising amount of cardiovascular challenge in a brief amount of time with benefits that can last all day.



4 MOUNTAIN CLIMBERS

Also known as the running plank exercise, the mountain climber exercise focuses heavily on core muscles and the cardiovascular system. This intense exercise can provide an excellent workout in a very short time and can be modified as your skills advance.

Step 1: Lie face down on the floor. You can use a mat or pad if you want. From there, move into a standard pushup position with your feet shoulder-width apart, your hands on the floor, and your elbows fully extended. Your back should be straight, neither sagging nor arched.

Step 2: From there, lift one foot off the ground, slowly bend one knee, and bring it up toward your chest while holding the rest of your body still. Then slowly lower the leg back to its original position and repeat the movement with your other leg. You can either move one leg at a time or both legs at the same time; moving both legs at the same time requires fast, reciprocal movements and can be highly challenging.

Bringing each leg up, one at a time, counts as one repetition. Perform three sets of 15 repetitions, resting one minute between sets. If you need more of a challenge, add five repetitions per set until you reach a sufficient level. You can also explore increasing the movement pace.

Unless you are already well-trained physically, the mountain climber exercise will likely be very challenging at first. You can modify this exercise by holding onto a counter (easiest) or a stable seating surface (intermediate).



Step 1



Step 2

5 SIT-STANDS

Although this exercise may seem very simple, the sit-stand exercise can produce a considerable cardiovascular challenge in a short period of time, while providing substantial strengthening for your gluteal and anterior leg muscles.

Step 1: Sit upright near the edge of a chair.

Step 2: Slowly stand up, taking one full second to rise. Once up, immediately move slowly back down into a seated position, taking a full second in between positions.

Standing up and then sitting back down is counted as one repetition. Perform three sets of 15 with a 30-second rest between sets. Feel free to perform more repetitions and sets, but always listen to your body so you don't overdo it.

"The sit-stand exercise starts easy but can become challenging fast. Watch those knees and just do what you can at first," Mrs. Shelley said. Increase sets and counts to intensify. You can also decrease the amount of rest between sets.

These exercises are a great start to establishing an exercise regimen that can boost heart function by strengthening the heart muscle. The trick to getting the greatest benefit is to perform these exercises vigorously so that you feel that you are working hard. Although leisurely exercises can still be beneficial, they are far less effective in boosting heart function.



Step 1



Step 2

If you have health or mobility issues that may present problems, consult your physician before commencing any exercise regimen.

people with temporarily higher blood pressure can feel good mentally. However, with permanent high blood pressure development comes poorer mental health. This is due to the pain threshold increasing with higher blood pressure. This can apply to physical pain, social pain, and greater stress. Many people endure pain or stress, but they may be diagnosed with hypertension ten years later.

Researchers suggest mental health and the cardiovascular system have more of a complex interaction than previously thought. This could provide fresh perspectives on preventing and treating mental health and hypertension.

Healthcare professionals can offer new

therapeutic modalities by looking at the interaction between the two. These may include dietary changes, exercise programs, and stress-management techniques. Ultimately, this approach could improve patient outcomes and lead to a better understanding of how mental health and physical health interact.

Sarah Cownley earned a diploma in Nutritional Therapy from Health Sciences Academy in London and she enjoys helping others by teaching healthy lifestyle changes through her personal consultations and with her regular contributions to the *Doctors Health Press*. This article was originally published on *Bel Marra Health*.

Stress, a poor diet, and being physically unfit can all contribute to high blood pressure and compound mental health issues.



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