

# MIND & BODY

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OVERTREATMENT

## More Infant Vaccines Linked With Higher Mortality Rates

New research suggests vaccines given in the first two weeks of life pose the greatest risk.

### INFANT MORTALITY



In most nations, more than half of infant deaths occur during the neonatal period.

## 55th

The United States currently ranks 55th in infant mortality rates, behind Serbia, Cuba, and every developed nation besides Greenland.

SOURCE: CIA WORLD FACTBOOK

By Megan Redshaw

Developed nations requiring the most infant vaccines see higher rates of childhood mortality

Among developed nations, those requiring the most neonatal vaccine doses tend to have the worst mortality rates in children younger than age 5, according to a peer-reviewed study published July 20 in *Cureus*.

Researchers Neil Miller, director of the Institute of Medical and Scientific Inquiry in New Mexico, and Gary Goldman, who has a doctorate in computer

science, performed several analyses based on 2019 and 2021 data to explore potential relationships between the number of early childhood vaccinations required by developed nations and their neonatal, infant, and younger-than-age-5 mortality rates.

According to researchers, few measures in public health can compare with the impact of vaccines, which are credited with having reduced disease, disability, and death from a variety of infectious diseases. Yet the study found that children in developed nations re-

quiring more neonatal vaccinations may face unintended consequences that increase childhood mortality, challenging the idea that having more vaccines administered will result in fewer deaths.

"Our paper investigated potential associations between the number of early childhood vaccine doses that developed nations require and their early childhood mortality rates," Mr. Miller told *The Epoch Times* in an email. "For example,

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## Diet High in Omega-3 Fatty Acids May Protect Lung Health



▲ A diet high in certain fish, seeds, nuts, soybeans, and avocados can help you get more omega-3s.

Study demonstrates prevention, hints at causation, and sets foundation for treatment research

By Amy Denney

The anti-inflammatory benefits of omega-3 fatty acids are well known, but a new study finds that they could preserve lung function as we age.

Published in June in the *American Jour-*

*nal of Respiratory and Critical Care Medicine*, the study looked at levels of omega-3 fatty acids in the blood of more than 15,000 Americans and found that higher levels were associated with a slower rate of age-related lung function decline.

The researchers observed the strongest associations for docosahexaenoic acid (DHA), an omega-3 fatty acid that's found at high levels in fatty fish such as salmon, tuna, and sardines. DHA is also available as a dietary supplement.

The data offers the strongest evidence

yet that omega-3 fatty acids may help prevent lung disease, study author Bonnie K. Patchen told *The Epoch Times*. She's a postdoctoral researcher at Cornell University with a doctorate in nutritional sciences.

### About the Study

Study participants were generally healthy when the study began, with most having no evidence of chronic lung disease. The racially diverse group had

Continued on **Page 7**

# EMF

## The Invisible Hazard

### PART 3 ARTIFICIAL VS. NATURAL EMFS: WHAT'S THE DIFFERENCE?

Some forms of radiation are essential to the body while others pose uncertain risks

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 mysterious cases of microwave syndrome continue to surface, growing doubts are emerging over the harm caused by the radiation emitted by fourth generation (4G) and fifth generation (5G) wireless networks, and other electromagnetic fields (EMFs). However, many people do not know that EMFs are an essential element our bodies need, like water and air.

#### What Exactly Is Electromagnetic Radiation?

Electromagnetic radiation, also known as electromagnetic fields or EMFs, is one of the four fundamental forces of nature, along with gravity, strong nuclear, and weak nuclear forces. It is an invisible "force" that exists everywhere, created by electric

charges and magnetic waves.

EMFs encompass all light and lifeforms. Humans emit electromagnetic radiation, too, such as heat, which can be detected using infrared cameras.

There are different types of EMFs.

EMFs with frequencies lower than the visible light spectrum are nonionizing radiation. These EMFs include electricity in powerlines, radiofrequency radiation (including microwave radiation), and infrared radiation.

Nonionizing radiation is usually considered safe for humans since it cannot remove electrons from the atoms and molecules that make up cells. Electron removal can damage DNA, which puts cells at risk of cancer.

On the other hand, ionizing radiation, EMFs with higher frequencies, have more energy and can remove electrons. These include ultraviolet light, X-rays, and gamma rays. Prolonged exposure to these may lead to cancer.

#### Harmful in Another Way

Among the "safe" EMFs, research suggests that radiofrequency EMFs—which are often manmade—may be able to cause adverse health effects even without electron removal.

Radiofrequency EMFs, most commonly released by phones, Wi-Fi, smart electronics, Bluetooth devices, and TVs, affect the vibration of charged particles inside the body, causing them to change trajectories. Emeritus professor Martin Pall from Washington State University theorizes that these fields can alter the electric environment around voltage-gated calcium channels residing in cellular surfaces. The channels can then open up, causing a sudden influx of calcium ions.

This can lead to oxidative stress inside cells and cause DNA damage, cellular damage, inflammation, cell death, and other associated pathologies.

Mr. Pall put forward this theory after observing that drugs that block these voltage-gated calcium channels could also block EMF activity. Later cell studies have shown that EMFs can both inhibit and activate voltage-gated calcium channels, which would affect an even greater scope of potential cellular activities.



FRED PROESE/GETTY IMAGES

#### 'NUTRITIONAL' EMF

Sunlight delivers a range of radiation, including infrared, which improves mitochondrial function, and ultraviolet, which helps us create vitamin D essential to immune function.

have been shown to help with sleep. Some scientists suspect that

the space sickness astronauts experience in outer space may be related to this deprivation of Schumann resonances.

Sunlight also generates beneficial EMFs like infrared light, which improves mitochondrial function and helps boost the circadian rhythm.

"We [humans] are actually electromagnetic beings," professor Magda Havas from Trent University told The Epoch Times. "Just like there are essential nutrients, there are essential frequencies that we also need." The human ears cannot hear these pulses, but the body responds to them.

Therapeutic devices emitting pulsed EMFs, mimicking natural pulses, have been used for bone healing and improving blood flow. Transcranial brain stimulation (TMS) is a therapy that releases transient magnetic pulses in the brain and has been used to treat mental illnesses.

#### 3. Tele-communicating EMFs Pulsate, Causing Damage

While natural EMFs release smooth, continuous waves, most radiofrequency EMF waves are erratic, pulsating, and potentially damaging (some radiofrequency EMFs, such as analog radios, emit continuous waves which are potentially less damaging).

"It's like noise versus music," Ms. Havas said.

Studies on potential health concerns involving radars, which release pulsating radio frequencies, started surfacing in the mid-1900s. One report on military personnel who worked with radar found that these people tend to have lower levels of circulating immune cells, with signs of cell and DNA damage.

Conversely, naturally occurring EMFs radiate incoherent energy that essentially cancels out. For instance, fire emits heat and light in all directions, distributing EMFs equally across its surroundings.

Artificial vs. Natural EMFs

#### Artificial vs. Natural EMFs

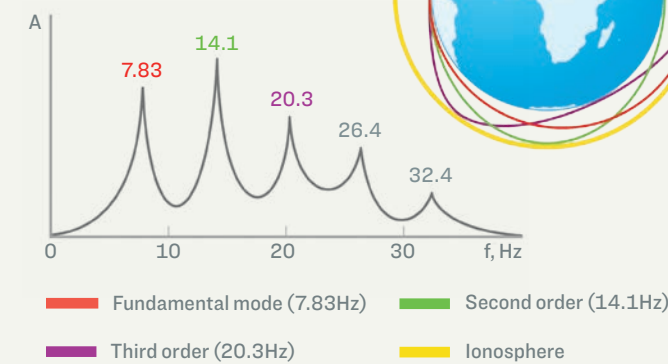
##### 1. Artificial EMFs Are Polarized, Have More Robust Impact

Polarization is a crucial difference between natural EMFs and artificial EMFs. Radiofrequency EMFs are polarized. They can have a more substantial biological effect since all of their electromagnetic waves travel in a uniform orientation. "They behave basically as one object," Mr. Pall explained.

While natural electromagnetic fields (EMFs) release smooth, continuous waves, most radiofrequency EMF waves are erratic, pulsating, and potentially damaging.

### THE SCHUMANN RESONANCE

Schumann Resonances are natural frequencies produced by electromagnetic waves in Earth's lower ionosphere. Our brain waves are highly correlated with these frequencies and they have been used therapeutically.



PETER HERMES FURIAN/SHUTTERSTOCK

#### NATURE IS MEDICINE

## Sunlight's Health Benefits Ignored at Our Own Risk

Sunlight does more than help us create vitamin D, it appears to ward off a long list of diseases, including some cancers

By Huey Freeman

Sunshine offers more than just sunburns; in fact, it may just be the best medicine you never pay for. The sun gets a bad rap these days—with many Americans thinking that it offers little but skin cancer—but soaking up those golden rays can do more good than harm.

During the past half-century, research and the public have focused on the sun's health risks, especially skin cancer, overshadowing the numerous studies that link sunlight to positive physical and mental health.

Of course, severe burns can still cause melanoma. That's why moderation is key to reaping sunlight's healthy rewards without the painful burns.

#### Avoiding Sun Exposure Has Become a 'Public Health Problem'

A 2020 scientific review published in the International Journal of Environmental Research and Public Health detailed findings from a collection of studies that showed that avoiding sunlight can be

hazardous and suggested that insufficient sun exposure may have led to as many as 820,000 deaths yearly in the United States and Europe.

"Studies in the past decade indicate that insufficient sun exposure may be responsible for 340,000 deaths in the United States and 480,000 deaths in Europe per year, and an increased incidence of breast cancer, colorectal cancer, hypertension, cardiovascular disease, metabolic syndrome, multiple sclerosis, Alzheimer's disease, autism, asthma, Type 1 diabetes, and myopia," the researchers reported.

"Insufficient sun exposure is a significant public health problem."

The comprehensive review noted that vitamin D supplementation didn't have the same preventative effect on these conditions, likely because other mechanisms triggered by sunlight—such as the release of nitric oxide from the skin and the direct

effects of ultraviolet radiation on peripheral blood cells—may be the active factors in reducing these conditions.

#### Sun's Rays May Prevent Heart Disease

Cardiovascular disease is the leading cause of mortality worldwide, killing almost 18 million people annually.

Evidence suggests a strong correlation between sun exposure and positive impacts on hypertension, a significant risk factor for heart disease and cerebral vascular diseases affecting blood flow to the brain.

Recent research indicates that sunlight lowers blood pressure by mobilizing nitric oxide stored in the skin, thereby enhancing nitric oxide availability, which dilates blood vessels. By promoting vasodilation, nitric oxide helps regulate blood flow to different tissues and organs in the body.

In addition to improving blood flow and lowering blood pressure—both of which reduce stroke risk—sunlight exposure increases vitamin D levels, which are also associated with a lower risk of stroke. Vitamin D from sunlight may help in-

hibit inflammation in blood vessels and help prevent clot formation, potentially reducing stroke risk.

#### Avoiding the Sun May Be as Harmful as Smoking: Study

Modern lifestyles, characterized by indoor jobs, fewer outdoor activities, and the widespread use of air conditioning, have led to reduced sun exposure for many individuals. Additionally, people stay indoors for activities that used to compel a trip outside, such as buying food and clothes. These changes raise concerns about their potential impact on life expectancy.

A study that observed about 40,000 Swedish women aged 25 to 64 revealed that sun avoidance was as risky as smoking. Published in the Journal of Internal Medicine in 2016, the study integrated data from a study that included about 1,000 women from each age group for 20 years.

Women who regularly exposed themselves to the sun had a lower risk of cardiovascular disease and other diseases, except for cancer, than those who avoided sunlight. The sun-exposed group had an average life expectancy that was six months to two years longer. The increased

cancer mortality rate among sun-exposed women was attributed to the women living longer, as age is a significant risk factor for developing cancer.

#### Sunlight May Prevent Chronic Conditions

##### Type 1 Diabetes

Sun exposure during pregnancy may prevent Type 1, or juvenile, diabetes, according to a 2016 Danish study that included more than 330,000 children, more than half of them male. After 15 years of observation, researchers found that boys aged 5 to 9 whose mothers received more sunlight exposure during their third trimester had a reduced risk of developing Type 1 diabetes. The protective effect, however, wasn't observed in girls.

An Australian study of about 29,000 boys published in Nature in 2021 also showed that those exposed to a higher rate of UV (ultraviolet) rays during their first year of life or third trimester of gestation were at a lower risk of Type 1 diabetes.

##### Multiple Sclerosis

Multiple studies have shown that sun exposure correlates with reduced risk for multiple sclerosis (MS). MS damages nerve fibers, causing symptoms such as paralysis and blindness.

An Australian study found that those who spent an average of at least two hours

in the sun daily as children had a lower MS risk than those who had fewer than two hours of sun exposure daily.

A study of 1,660 MS patients and 3,050 control subjects in Norway and Italy also found that infrequent summer sun exposure significantly increased MS risk, especially for Norwegians aged 16 to 18 and Italians up to 5 years old.

A 2012 Swedish study concluded that independent of vitamin D, sunlight might protect against developing MS. The five-year study of more than 2,000 subjects found that those with the least sun exposure had higher MS risk regardless of vitamin D levels. Sunlight's physiological mechanisms, beyond boosting vitamin D, may help explain its link to lower MS risk.

##### Eczema and Allergies

Eczema commonly manifests in infancy or early childhood. In a 2018 study, researchers discovered that infants exposed to more direct UV light had lower rates of eczema and inflammation indicators.

It also found that direct UV light exposure in the first months of life was more effective for allergy prevention than vitamin D supplementation alone.

##### Melanoma

While intermittent sun exposure increases the risk of melanoma—the most severe and invasive form of skin cancer—ongoing sun exposure may have a protective effect.

Research from the University of Sydney in Australia found that workers with continuous sun exposure from their jobs weren't at higher melanoma risk than the general population. Moreover, their risk wasn't compromised by recreational sun exposure on weekends.

#### How Much Sun Exposure Is Too Much?

In light of recent research showing how sunlight improves health, there has been a call for new sun exposure guidelines.

A 2021 research article recommends that scientists—including dermatologists and epidemiologists—review public health guidelines that balance the risks

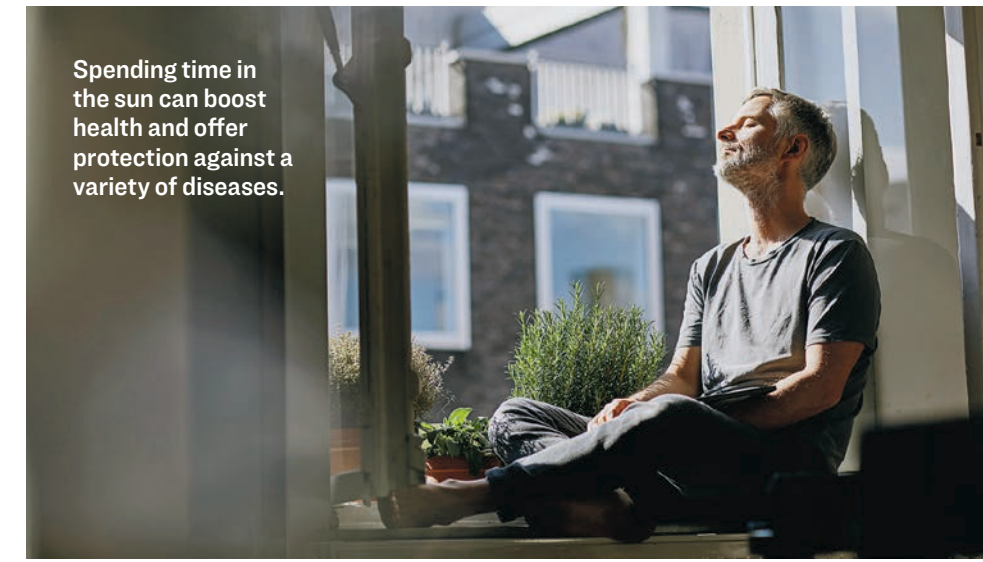
and benefits of sun exposure, particularly for optimal vitamin D levels.

Current guidelines from dermatology groups tend to emphasize sun protection to reduce skin cancer risk while overlooking the benefits.

A newspaper reporter, editor and author, Huey Freeman recently wrote "Who Shot Nick Luvie?" a true crime book on the murder of a Border Patrol agent. He and his wife, Kate, live in Central Illinois.

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

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Spending time in the sun can boost health and offer protection against a variety of diseases.



The tasks of modern life don't offer enough movement to strengthen muscles, ligaments, and tendons.

## Easy Exercises to Combat Chronic Pain

### PART 11 | RELIEVING CHRONIC HAND PAIN

6 exercises to ease common hand pain due to overuse

**In this series, "Easy Exercises to Combat Chronic Pain," occupational therapist Kevin Shelley focuses on common issues associated with chronic pain and simple exercises to strengthen weak muscles and enhance joint mobility, with the goal of helping you become pain-free.**



Previous Parts:  
TheEpochTimes.com/Chronic

By Kevin Shelley

Our hands are incredible tools and carry a heavy load—figuratively and, often, literally.

"Given that the hands are involved in almost every active task, it's unsurprising that they can suffer from chronic pain. They have a lot of demands placed on them, and sometimes it's too much," Rebecca Gold, an occupational therapist

with more than 34 years of experience in hand rehabilitation, told The Epoch Times.

Although the hands often suffer from overuse syndromes resulting in chronic pain, they're also highly responsive to exercise targeted at maximizing their flexibility and strength, which can decrease or completely eliminate pain.

#### Causes of Chronic Pain in Healthy Hands

Chronic pain is pain that generally lasts for more than three months. It can continue at low levels for extended periods, but can also increase slowly and consistently over time.

Your hands are some of the busiest parts of your entire body and can take a lot of abuse, resulting in some common problems.

#### Functional Patterns

"Overuse is a huge problem with hands; they can be subject to a lot of punishment throughout the day, and this can

eventually take a toll," Ms. Gold said.

Problems with the hands can originate in the hand, but they often start in the wrist and carry over into the hand.

#### Muscle Weakness

"Unfortunately, muscle weakness is often inconsistent through the hand, and can cause alignment issues and pain," Ms. Gold said.

The hand uses a combination of larger, stronger muscles and smaller, weaker muscles that need to work together for the hand to function best.

Although we use our hands constantly, the daily tasks we perform in the current era rarely provide adequate mobility and strengthening to the muscles, ligaments, and tendons.

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.

This concludes this series.



The hands have an incredible range of movement but need diverse tasks—or exercises—to stay well.

LEK\_CHAROEN/SHUTTERSTOCK

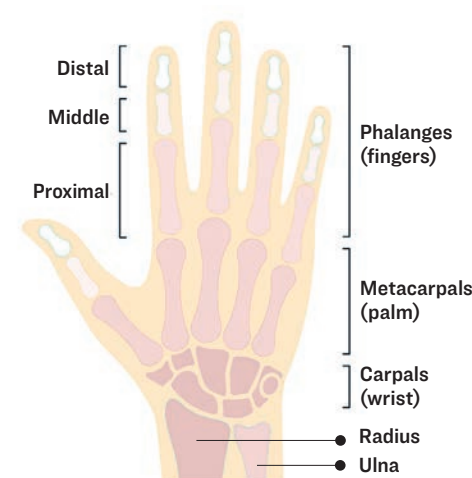
## THE BONES AND MUSCLES OF THE HAND

Counting the wrist, the hand contains 27 bones. The wrist has eight small, irregularly shaped carpal bones, which connect to the five long metacarpal bones.

The fingers themselves are comprised of three bones each: the proximal, or first, phalanges; the intermediate, or middle, phalanges; and the distal, or end joints, also called the fingertips. The thumb is unique among the fingers in that it has only proximal and distal phalanges, and no middle phalange.

The hand utilizes two sets of muscles. The muscles that originate in the forearm and cross the wrist into the hand are known as the extrinsic muscles. These powerful muscles lend strength to the wrist and hand. The muscles that originate in the hand itself—known as the intrinsic muscles—provide both precise dexterity and control of the fingers.

Beyond the muscles, the hand utilizes a complex set of tendons, joints, and ligaments for stability, flexibility, and strength.



Counting the wrist, the hand is comprised of 27 bones.

Our hands use two sets of muscles and a complex set of tendons, joints, and ligaments.

DESIGNUA/SHUTTERSTOCK

## EXERCISES FOR CHRONIC HAND PAIN

Performing these commonly recommended exercises can help you maximize the flexibility and strength of your hands.

### 1 INTRINSIC PLUS

This exercise is excellent for working on flexibility and muscular strength of the metacarpal-phalangeal (MP) joint, which is the first knuckle of the hand.

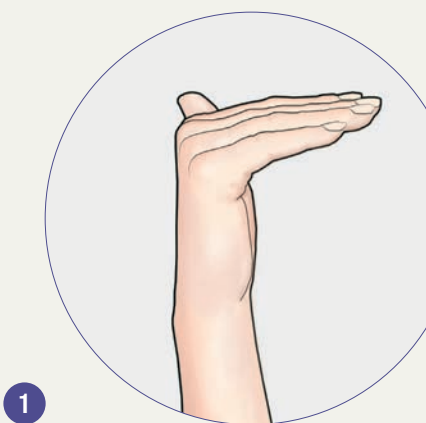
**Step 1:** Begin this exercise with your elbow on a table and your arm and fingers pointing straight up toward the ceiling.

**Step 2:** Slowly bend your fingers at the first knuckle, while keeping your other knuckles straight. Bend them as far as you can, taking one second to move from straight to fully bent. Push firmly into the endpoint, and hold for three seconds, being careful not to provoke pain.

**Step 3:** Return your fingers to an upright position with fingers extended straight up.

**Step 4:** Perform this movement 12 times per set, and do three sets.

Be sure to isolate the bending to the first joint and keep the rest of your finger joints straight. Adhering to strict form makes this exercise highly effective.



### 2 FLAT FIST

This exercise adds the proximal interphalangeal (PIP), or middle joints, to the tabletop exercise. It takes concentration to perform accurately, but the payoff is increased joint flexibility and muscle strength. The interphalangeal joints and their associated muscles contribute substantially to the strength of the fist.

**Step 1:** Begin this exercise with your elbow on a table, your arm pointing straight up, and your fingers pointing toward the ceiling.

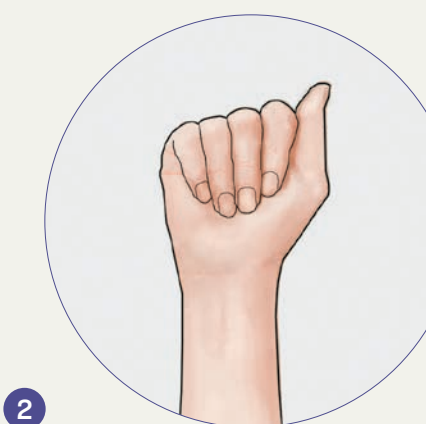
**Step 2:** Slowly bend your fingers at the first knuckle, as in the intrinsic plus exercise, while keeping your other knuckles straight. Bend them as far as you can, and hold them firmly against the endpoint of travel.

**Step 3:** From here, carefully bend the middle knuckles of your hand until your fingers touch the base of your palm. Try to slide your fingers down lower on your palm. Although they won't move far, you'll want the tension that this extra movement provides.

**Step 4:** Hold this position for three seconds before straightening the middle PIP joints back out while keeping the MP joints (first knuckles) in a bent position.

**Step 5:** Perform this movement 12 times per set, and do three sets.

Be sure to isolate the bending to the PIP and MP joints during this exercise, and keep your fingertips straight. Maintaining strict form will make this exercise highly effective, but it can take practice to master.



### 3 FINGERHOOK

This exercise involves the third set of joints, known as the distal interphalangeal (DIP) joints. It's excellent for maintaining both the flexor tendons that cross the wrist and the tendons involved with finger flexion and extension.

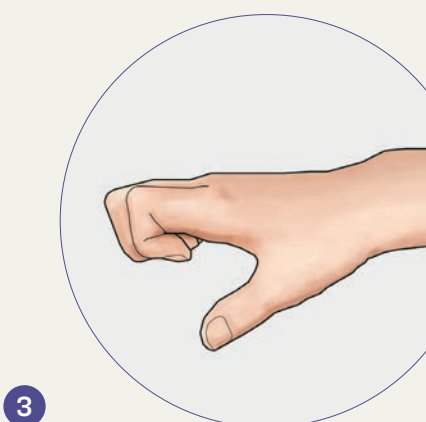
**Step 1:** Begin this exercise with your elbow on a table, your arm pointing straight up and your fingers pointing toward the ceiling.

**Step 2:** Leaving the knuckles extended, slowly bend your fingers at the PIP and DIP joints. Try to touch your fingerprints to the base of your fingers, such that the second and third joints of your fingers are completely bent.

**Step 3:** Hold this position for three seconds before straightening your fingers back out.

**Step 4:** Perform this movement 12 times per set, and do three sets.

This exercise can bring a lot of tension into the hand at first, so ease into the exercise. After a few repetitions, the soft tissues involved in the movement should stretch, and the movement will become more comfortable. Be sure to avoid pushing into pain.



### 4 PASSIVE THUMB RADIAL ABDUCTION

Your thumb serves as the opposable finger of the hand, capable of moving toward and touching the other digits on the same hand. While it's critical for maintaining your hand's full functional potential, it's often neglected during exercise. This simple exercise will ensure that your thumb maintains full range of motion.

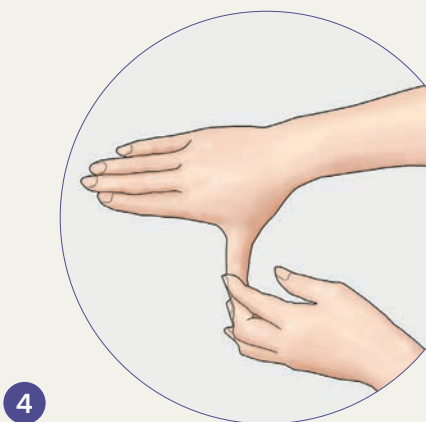
**Step 1:** Place your hand palm down on a table with your thumb touching your palm.

**Step 2:** Without moving your hand, bring your thumb straight out to your side as far as you can.

**Step 3:** Use the fingers of your other hand to gently stretch the thumb out further. Do not provoke pain in your thumb.

**Step 4:** Hold the stretch for three seconds before actively moving your thumb back against the other fingers.

**Step 5:** Take time to move your thumb in either direction, and perform three sets of 12 stretches.



### 5 THUMB COMPOSITE FLEXION

This exercise allows you to strengthen the intrinsic muscles of the thumb and maximize full range of motion.

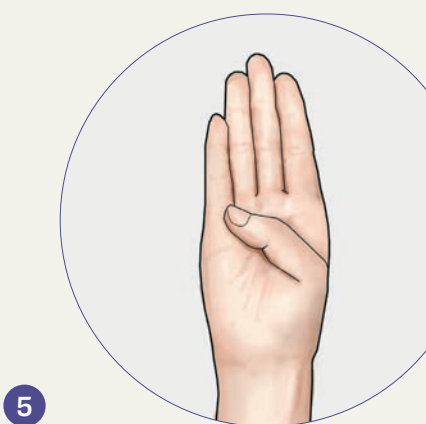
**Step 1:** Start this exercise with your palm facing toward you with all of the fingers straight and touching and the thumb straight out to the side.

**Step 2:** While keeping the fingers together, try to touch the base of your pinky finger with your thumb. If you can't reach it, move the thumb across your palm as far as you can.

**Step 3:** Hold your thumb in place for three seconds, then move it back out to the side. Take a second to move in either direction.

**Step 4:** Try to do 12 repetitions per set and three sets.

To maximize the effectiveness of this exercise, reach hard with the thumb toward the base and the pinky, and maintain the exertion while holding the thumb in position.



### 6 FINGER ADDUCTION/ABDUCTION

This simple yet effective exercise maximizes the strength of the intrinsic muscles of the fingers. Although it appears simple, using the proper technique will make it far more effective.

**Step 1:** Place your hand palm down on a flat surface such as a tabletop, fingers together.

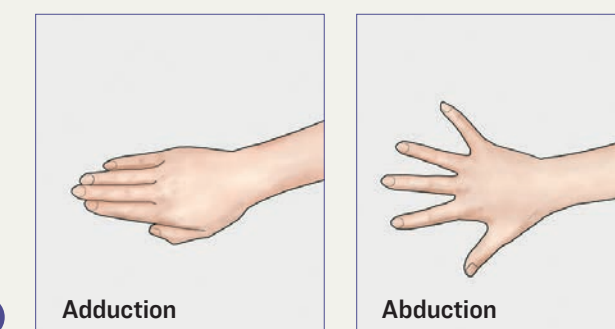
**Step 2:** While keeping your hand down, slowly spread your fingers out as far as you can, taking one second to move through your full range. Push hard at the end of the movement to really work the muscles. Hold for three seconds.

**Step 3:** Slowly slide your fingers back together, taking time to complete the movement. Squeeze the fingers together as hard as you can, using only the muscles of the hand; hold the squeeze for three seconds.

**Step 4:** Perform 12 repetitions per set, and do three sets with each hand.

The trick with this exercise is to push into the end movements forcefully. This allows you to effectively work your intrinsic finger muscles.

These exercises can reduce or eliminate chronic pain in your hand, but if you have pain that persists, consult your physician for an accurate diagnosis and referral.



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

ALL IMAGES BY SAMIRA BOUAOU/THE EPOCH TIMES; (ILLUSTRATIONS) TIM GEBHART/THE EPOCH TIMES

## OVERTREATMENT

# More Infant Vaccines Linked With Higher Mortality Rates

Continued from Page 1

some nations administer hepatitis B and tuberculosis (BCG) vaccines to their infants shortly after birth. We found that nations that require both vaccines had significantly worse infant mortality rates when compared to nations that require neither vaccine."

Mr. Miller and Mr. Goldman's research initially began in 2011, when they published a paper using 2009 data showing less favorable infant mortality rates among highly

developed nations requiring the most infant vaccinations.

The recent study replicated their original study using 2019 and 2021 data from the top 50 nations where childhood vaccine doses range from 12 to 26. Results showed the infant mortality rate increased by 0.167 deaths per 1,000 live births for each additional vaccine dose added to the vaccination schedule, supporting the earlier study's findings.

Twenty-nine nations in 2009 had better infant mortality rates than the United States, but by 2019, the United States had declined to 44th in infant mortality rankings and in 2021, ranked 50th—despite requiring the highest number of infant vaccines. According to the CIA World Factbook, the United States currently ranks 55th, behind Cuba, Serbia, and Bosnia.

## Hepatitis B and Tuberculosis Vaccination May Increase Mortality

In their latest study, Mr. Miller and Mr. Goldman broadened their research to assess the impact of hepatitis and tuberculosis vaccines on mortality rates of neonatal infants (babies younger than 28 days old), infants up to age 1, and children younger than 5. Mortality data and vaccination schedules were compiled from UNICEF, the World Health Organization, the European Centre for Disease Prevention and Control, and national governments.

Nations were then grouped based on whether they required zero, one, or two vaccine doses given to newborns to determine their statistical significance to mortality rates of the three age groups. The association demonstrated by the analysis showed neonatal vaccines for hepatitis B and tuberculosis may not contribute to an overall reduction in mortality in nations where infants are at low risk of mortality from these diseases.

**Reduction in Infant Vaccine Doses Decreased Mortality**  
Using 2021 data, the researchers



▲ Research suggests vaccines offer diminishing returns when too many are given at too young an age.

found a statistically significant difference of 1.28 deaths per 1000 live births between the mean infant mortality rates among nations that didn't vaccinate their neonates (children 4 weeks or younger) at all and those that required two vaccine doses. For each reduction of six vaccine doses administered during infancy, the infant mortality rate improved by approximately one death per 1,000 live births.

Vaccines administered during the first year of life had a greater effect on younger-than-age-5 mortality rates compared with vaccines administered in the second through fifth years of life, suggesting that younger infants who generally weigh less and receive more vaccines in a shorter period are significantly more likely to experience an adverse reaction resulting in hospitalization or death.

## Vaccines administered during the first year of life had a greater effect on younger-than-age-5 mortality rates compared with vaccines administered in the second through fifth years of life.

"Hepatitis B and tuberculosis vaccines given shortly after birth when the immune system is immature and the neonate has low weight, may increase vulnerability to serious adverse reactions and deaths that ultimately contribute to higher neonatal, infant, and under-age-5 mortality rates," Mr. Miller told *The Epoch Times*.

## Vaccination Sequence and Combination Can Impact Mortality

In most nations, more than half of infant deaths occur during the neonatal period, with about 75 percent of neonatal

The study showed the infant mortality rate increased by

**1.67**

DEATHS

per

**10,000**

LIVE BIRTHS

for each additional vaccine dose added to the vaccination schedule.

Developed nations, such as the United States, are grappling with higher rates of infant mortality.



# The Potent Therapeutic Effects of Avocado Leaves

A series of animal studies finds that avocado leaves can restore damaged organs and heal the brain

By Jessie Zhang

Avocado flesh is a nutritional powerhouse of healthy fats, but avocado leaves are also nutritious and can be a natural therapeutic alternative for restoring the body's major organs.

In a study published in the *International Journal of Phyto-medicine and Phytotherapy*, researchers discovered that avocado leaf extracts may aid significantly in repairing the liver, kidney, and heart. The preparation involved rinsing avo-

cado leaves in distilled water, air-drying them, blending them into a powder, mixing them with 80 percent ethanol, then freeze-drying them into an extract after three days.

The researchers conducted their study with 40 rats, randomly divided into eight groups. Over two weeks, the groups received different treatments.

Groups one and two were given water, groups three and four were given an avocado leaf extract, and group five received silymarin, a supplement often used for liver and gallbladder disorders.

Group six was given rifampicin, a medicine used to treat tuberculosis, blood infections, and leprosy, while groups seven and eight were given rifampicin and avocado leaf extract.

Further clinical studies are required, but the study revealed that the avocado leaf extract compared favorably with commercially available drugs used for treating liver, kidney, and heart diseases. Additionally, it presented fewer side effects than rifampicin, which caused significant oxidative stress on the liver and heart tissues.

The effectiveness of avocado leaves was attributed to their disease-inhibiting phenolic compounds and flavonoids, which

One can enjoy the benefits of avocado leaves by making a tea from them.



▲ Research suggests avocado leaf extracts may be able to help heal the liver, kidney, and heart.

ALL IMAGES BY SHUTTERSTOCK

have anti-cancer, anti-inflammatory, and antiviral properties. The study adds to other research hinting at the leaves' potential as an alternative in managing disorders involving multiple organs.

One can enjoy the benefits of avocado leaves by making a tea. Steep the leaves, preferably organic, in boiled water for three to five minutes, then strain and add your sweetener of choice.

## Remedy for Lead Poisoning

Another animal study done in 2020 study found that avocado leaves could treat lead poisoning in the brain and support tissue regeneration in the cerebellum.

After exposure to lead acetate, albino rats exhibited signs of irritability, aggression, and inflammation, but their healing process improved significantly after being given the avocado leaf extract.

Topical application of the extract to wounds expedited recovery, leading to complete healing after six days.

The avocado leaf extract also protected against lead acetate toxicity in the cerebellum. According to microscope examination of tissue samples, the lead acetate inflicted significant changes to the structure of the cerebellum, but the tissues were regenerated when treated

deaths occurring during the first week of life when neonatal vaccines are administered, according to Mr. Miller. Deaths that occur during this period have a large impact on neonatal, infant, and younger-than-age-5 mortality rates.

The study states that the U.S. neonatal mortality rate makes up 61 percent of its infant mortality rate and 52 percent of the mortality rate in children younger than age 5.

But Mr. Miller said doctors, coroners, and other medical examiners are "compelled to misclassify and conceal vaccine-related fatalities" because cause-of-death classifications associated with infant vaccination don't exist.

Vaccines have "nonspecific effects" that can increase or decrease mortality from infectious diseases not targeted by the vaccine.

"Some deaths associated with neonatal vaccines may be delayed, possibly through some priming mechanism or cumulative toxicity that increases the risk of a severe or fatal reaction to subsequently administered vaccines," Mr. Miller said.

For example, a 2017 study published in *EBioMedicine* found a twofold increase in all-cause infant mortality after diphtheria-tetanus-pertussis (DTP) vaccines and oral polio vaccines were introduced in Guinea-Bissau. Survival rates of infants who received the DTP vaccine without oral polio vaccine were worse than children who got both vaccines.

## Vaccines have 'nonspecific effects' that can increase or decrease mortality from infectious diseases not targeted by the vaccine.

The sequence of vaccinations can also affect all-cause mortality, according to a 2018 study published in *Vaccine*, showing girls who received a pentavalent vaccine (five vaccines in one) after receiving a measles vaccine were five times more likely to die from all causes within six months of follow-up compared to girls who followed the recommended schedule.

The authors also said: "It is assumed that providing missing vaccine doses will always leave the child better off than not providing them. This may be wrong."

According to Mr. Miller and Mr. Goldman, 17 of 18 analyses confirm that giving more vaccine doses results in higher infant and early childhood mortality rates in developed nations. They're calling for vaccine policymakers to determine the full effect of the current vaccination schedule on deaths from any cause and for safety research into the number of recommended childhood vaccines and how they're administered to confirm they are positively impacting child survival.

*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.*

with the extract.

## Treating Diabetes

A study published in 2022 suggested that avocado leaves may also have therapeutic potential for Type 2 diabetes.

Researchers observed that the leaves promoted the regeneration of pancreatic cells and suppressed enzyme activity in carbohydrate metabolism, which are anti-diabetic characteristics.

Notably, the leaves contained significantly more disease-inhibiting phenolic compounds than the fruit, making them a valuable option for managing diabetes.

The leaves contained 178.95 milligrams of gallic acid equivalents per gram, compared with the fruits' 145.7 milligrams.

Another recent study found that avocado leaves are effective at reducing blood pressure, a quality that is attributed to the presence of quercetin, a type of flavonoid and a potent natural antioxidant.

People with diabetes and high blood pressure face four times the risk of developing heart disease as those without either condition.

Various studies in hypertensive rats have shown that quercetin exerts a diuretic effect by increasing urine volume, thereby reducing blood pressure.



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Some researchers think that consuming more omega-3 fatty acids may help long COVID sufferers.

# Diet High in Omega-3 Fatty Acids May Protect Lung Health

Study shows nutrients with anti-inflammatory properties can help maintain lung health

Continued from Page 1

an average age of 56. The researchers followed participants for an average of seven years.

"Our study was unique in a number of ways," Ms. Patchen said. "One, a lot of the previous work has been cross-sectional, as in looking at individuals at one point in time. What we did was look at it over time, for up to 20 years and saw that omega-3s were predictive for how lung function changes. It helps to get at that cause and effect relationship."

The study provides the impetus for a future causal study that would provide an omega-3 intervention and measure how that changes the outcome. This study examined existing evidence.

However, it's part of an ongoing project collaborating with the COPD Gene study. The follow-up research will examine blood levels of omega-3 fatty acids in relation to the rate of decline in lung function among people with chronic obstructive pulmonary disease (COPD)—including heavy smokers—to determine if the same beneficial associations are found, according to a National Institutes of Health (NIH) statement.

The observational component of this study looked at data from about 15,063 Americans from the NHLBI Pooled Cohorts Study—a large collection of NIH-funded studies that exists to help researchers who want to examine personalized risk for chronic lung disease.



## Inflammation is involved in the pathology of most every pulmonary disease including pneumonia, asthma, COPD, and even in bacterial and viral infections.

The second component of the study involved researchers analyzing genetic data from a large study involving more than 500,000 European patients. Those results also showed that higher levels of omega-3 fatty acids, including DHA, were associated with better lung function.

## Prevention May Be the Best Hope

While eating fatty acids may help prevent lung issues, they don't appear to cure lung dysfunction after the fact. In fact, evidence on fatty acids used as an intervention for severe lung dysfunction appears to show the opposite effect, potentially causing more harm than good.

A 2011 JAMA study using intravenous

omega-3 fatty acids on critically ill patients was halted because of higher mortality rates among those receiving the treatment.

A 2019 meta-analysis in *Nutrition* also found no benefit for critically ill patients, except for some low-quality studies showing a possible benefit for patients with acute respiratory distress syndrome.

Such evidence bolsters the argument that using omega-3 fatty acids to prevent disease is more promising than using them to treat disease and improve health outcomes.

It also underscores the need for improved education on the role diet plays in disease pathology, as most Americans already fall short of the U.S. Department of Agriculture's dietary recommendation that people eat at least two servings of fish per week. In addition to fish and fish oil, other sources of omega-3 fatty acids include nuts and seeds such as flax seeds, chia seeds, and walnuts.

"Food is a very powerful tool that could be leveraged in many ways throughout life," Ms. Patchen said. "I'm also a registered dietitian, and I believe in the power of food both for health and preventing disease. On a personal note, I have celiac disease, so I've seen firsthand the power of eating a diet that's suitable for you, versus not, can have on health."

## The Value of Anti-Inflammatories

The anti-inflammatory effect of omega-3 fatty acids has spurred significant research into how diet can affect diseases such as cancer and cardiovascular disease.

"We know largely from studies on smoking that inflammation caused by smoking or other environmental exposures, such as pollution, has a large impact on lung health and lung disease," Ms. Patchen said.

Because omega-3s have an anti-inflammatory function, Ms. Patchen says there's a plausible biological link between eating more omega-3s and facing a lower risk of these diseases.

Inflammation is involved in the pathology of most every pulmonary disease including pneumonia, asthma, COPD, and even in bacterial and viral infections.

Inflammation is a complicated but essential biological function that investigates many mechanisms to defend the body against pathogens and repair tissue. However, when inflammation is prolonged, it can deplete the body and contribute to other diseases. Ideally, inflammation is a healthy response to infection-causing pathogens, physical trauma, and sensitivity to toxins, pollutants, irritants, and allergens.

As explained in the *Journal of Inflammation Research*, cells and molecules are orchestrated to instigate inflammation, which is seen in acute situations such as pneumonia and ARDS, as well as chronic inflammatory diseases, such as asthma and COPD.

"Because the lung is a vital organ for gas exchange, excessive inflammation can be life threatening. Because the lung is constantly exposed to harmful pathogens, an immediate and intense defense action (mainly inflammation) is required to eliminate the invaders as early as possible. A delicate balance between inflammation and anti-inflammation is essential for lung homeostasis," the journal reads.

Anti-inflammatory mediators such as omega-3s are believed to exert protective actions by contributing to biological actions that control vascular inflammation and reduce systemic inflammation.

"This large population-based study suggests that nutrients with anti-inflammatory properties may help to maintain lung health," James P. Kiley, director of the NHLBI's Division of Lung Diseases, said in the statement. "More research is needed, since these findings raise interesting questions for future prospective studies about the link between omega-3 fatty acids and lung function."



Food is a very powerful tool that could be leveraged in many ways throughout life.

Bonnie K. Patchen, postdoctoral researcher, Cornell University

## COVID and Lung Function

Lung function is especially important for adults 65 and older, who are at higher risk for pneumonia. They're at increased risk for hospitalization, complications, and death.

In some cases, other lung-related diseases contribute to risks for pneumonia. But as a 2015 *International Journal of Clinical and Experimental Medicine* article pointed out, multiple underlying diseases contribute to risk, including cardiovascular disease, diabetes, kidney disease, major surgery, and cerebrovascular disease. It's the same reason certain people were more vulnerable to developing complications from COVID-19, as the risks are nearly identical.

"Chronic underlying disease is one of the most important risk factors in elder pneumonia," according to the 2015 article.

As Ms. Patchen explained: "Lung function typically peaks in the mid-20s to early 30s and then starts declining. Factors that can help decrease the rate of decline are potential therapies for preventing adverse long-term lung health."

Because long COVID has elements of a prolonged inflammatory response, it makes the application of omega-3 fatty acids all the more interesting, she said. Future studies can hone in on specific lung diseases.

"I think there's potential because a similar mechanism could be happening with long COVID as we start to learn more about that," Ms. Patchen said. "The same hypothesis about the anti-inflammatory effects of the omega-3s and how they could be working in the lungs could apply in multiple situations. There are studies that still need to be done. This is certainly not the end of the story for omega-3s."

# PREPARING FOR A GOOD END

## PART 4 WHAT DYING BODIES DO

Natural death is not as painful and disturbing as we fear because the body knows what to do

By Sharleen Lucas

*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:  
TheEpochTimes.com/  
Good End

For many people, death feels contrary to all that is good in life, like the wrong finale or a mysterious curtain falling in the middle of an act.

Yet, evidence suggests the body sees it differently. Many palliative care experts argue that a body dying naturally of old age or an incurable illness knows how to die in a comforting and possibly euphoric way.

Except in rare cases, the final stage of death isn't as painful and disturbing for the dying as it is for the loved ones watching. Learning to trust the body's natural dying process may feel absurd. Still, according to experts, this acceptance increases peace when death approaches.

### Understanding the Dying Process

A few years back, during my work as a hospital RN, our physicians admitted a petite older woman, whom I'll call Delores, from the emergency department into my care.

When our staff rolled her into the hospital room, I saw a deep sadness in the eyes of her husband; I'll call him Tom. We settled Delores comfortably into bed, an IV machine dripping fluid into her vein. I shut the door to the busy hallway, and Tom and I sat down in chairs next to Delores and began a gentle conversation about her situation.

As a patient of our local hospice, Delores was in her final days of a natural dying process. Her husband had grown distressed when she became increasingly unresponsive, no longer eating, drinking, or moving. Thinking she was suffering from thirst and hunger, he called 911 instead of calling hospice to ask for their advice.

The EMTs and paramedics who answered the call didn't ask whether she was in hospice, something ambulance first responders should be experienced enough to assess. The emergency and admitting physician didn't question whether IV fluids and admission to a bustling, noisy hospital were in Tom and Delores's best interest.

Rehydration of an actively dying patient

can be a form of overtreatment because it won't cure his or her condition and can increase distress. When multiple organs fail, they stop processing fluid adequately, causing it to seep into the lungs and tissue.

An irreversibly dying body seems to understand this and quiets the uncomfortable feelings of thirst and hunger, according to an insightful article by palliative care expert Rebecca Gagne-Henderson. When the body ignores nutrition and hydration as a part of the dying process, it starts a cascade of complicated physiological events that release neurotransmitters such as endorphins, oxytocin, and serotonin. Instead of suffering, these chemical messengers increase a dying patient's comfort, possibly even inducing euphoria.

Tears welled in Tom's eyes when I explained this as he realized he'd misunderstood what she needed and perhaps wanted. Rather than sitting at home holding Delores's hand, he'd unwittingly set them both on an unnecessary journey to the hospital, fraught with stress and discomfort.

Had he understood the dying process, he could have called hospice for comfort care and gathered loved ones around Delores's bed.

Trusting the body's knowledge of dying gracefully increases peace at the end of life for everyone involved.

### The Labor of Dying

Few today have been the primary caregiver to a dying loved one, even though dying at home is on the rise in the United States. Instead, many still die in medical facilities cared for by nursing staff, often alone or with family who fear the dying process and visit minimally. As a result, most people outside of medicine know very little about a dying body. Surprisingly, the same is true for many medical practitioners.

Each person's dying journey is unique. However, like birth, the body labors through the process with common symptoms during one's final weeks.

Award-winning hospice nurse, educator, and author Barbara Karnes explained the typical dying process in an interesting way during an interview

with hospice physician and podcaster Karen Wyatt.

“There are natural, normal ways that we get out of our body. That's part of how we release,” Ms. Wyatt said. “Nothing bad is happening. Nothing pathological is happening.”

To die well, palliative care experts recommend a team of support beside the dying person throughout the journey. But, in the end, as Ms. Karnes said, the way one dies is highly individualized.

“We, the watchers [of a loved one's death], can participate,” she said. “We can be there. We can support ... but it's not our story. It's not our ending. They're going to die in their own manner according to their own personality.”

### Signs and Symptoms During One's Final Days

This individualized dying presents in many ways. While there are common physical symptoms of death during one's last weeks and days, they vary depending on different illnesses, personal needs, and levels of spiritual peace.

For example, patients who didn't have



The final stage of death is rarely painful or disturbing for the dying.

Trusting the body's knowledge of dying gracefully increases peace at the end of life for everyone involved.

## COMMON SYMPTOMS OF DYING

There are common signs and symptoms of “death labor,” the process the body goes through as it nears its final moments. These can span one to seven days.

- Complete loss of hunger and thirst
- Dry mouth
- Bowel and bladder changes
- Excessive sleep
- Altered consciousness, often drifting in and out of awareness in a dream-like state, possibly with visions
- Unresponsiveness
- Lack of movement
- Restlessness, fidgeting, or agitation
- Sudden arm or leg movements
- A dramatic surge of energy or awareness days or hours before death
- Dropping blood pressure and irregular heartbeats
- Cool, mottled skin as less blood flows to the arms and legs
- Irregular, gasping, or loud and gurgling breaths, known as the death rattle

## Each person's dying journey is unique.



MAKARS/SHUTTERSTOCK

much pain in their aging or disease process rarely feel increased pain during their dying process. Some patients reminisce and talk more, while others withdraw. One patient may wait to die until a loved one arrives, while another waits until everyone leaves the room. Patients with pain may wish to be highly medicated, while others choose minimal medication to focus on family time despite the pain.

### Trusting the Dying Process

For loved ones, death can be hard to watch. For the dying, “it's an incredibly beautiful and mysterious mechanism,” Ms. Gagne-Henderson wrote.

While “the watchers,” see the frail, sunken skin of our loved ones, touch their cold arms, and hear their loud, gurgling breaths, the dying no longer feel these discomforts. Instead, they're on solitary journeys of separation from their physical bodies into a more dream-like or possibly spiritual state.

As Ms. Karnes described it, “we're hearing and witnessing their dream” during one's labor to get out of one's

body. She says that the dying become more spiritual and less physical, which we may never fully understand as watchers.

It's tempting to define what is happening through our own belief system or sense of physical discomfort, but, as palliative experts explain, a patient rarely is in as much distress as our perceptions tell us.

Due to a lack of research, we're not exactly sure what happens neurologically and spiritually as a patient dies. However, we have clues through stories and a few studies of near-death and end-of-life experiences.

Some researchers and end-of-life experts theorize that neurotransmitters or changes in the brain are responsible for dreams, visions, and out-of-body experiences. Other experts, such as Ms. Karnes, who has seen thousands die, including children, are certain that people are encountering another dimension or the afterlife. Either way, those left behind see

and study the physical effects on the body. Ultimately, Ms. Karnes says that perhaps it's better to embrace the body's dying process than strive to solve every mystery—something no one can fully decode until death.

### Treasure the Journey

Since the common perception of death may be worse than reality, experts recommend consulting with hospice to increase end-of-life understanding, support, and peace in the journey.

When your loved one's breathing changes to gasping, irregular, or disturbing, rattling breaths, remember this is normal as he or she weakens. The loss of his or her gag reflex means the gurgling secretions aren't uncomfortable.

When a loved one fidgets or seems mildly agitated despite trying every tool

to increase comfort, remember that he or she is likely laboring through death. Don't be afraid to get close, hold your loved one's hand, and talk to him or her. Since hearing is the last sense to go, your words are likely getting through.

When he or she converses with someone you can't see, recalls comforting dreams of dead loved ones, or experiences a sudden, shocking burst of energy, remember that this is part of a beautiful and mysterious dying journey. Being the watcher is a gift to cherish.

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 Funeral planning helps loved ones say goodbye.

## AGE WELL

# Epigenetics May Unravel the Secrets of Longevity

The study of how genes turn on and off is opening new avenues to a long and healthy life

SHAPECHARGE/GETTY IMAGES



▲ Exercise has a powerful effect on processes that keep DNA healthy and influences genetic expressions that slow biological aging. For the best effect, mix aerobic exercise with strength training and flexibility exercises.

By Irina Antonova

Most people want to live a longer life—and live it in good health. While genetics play a role in health and longevity, our lifestyle and environment have a major influence on what genes get turned on or off, a process known as epigenetics.

Lengthening healthy life expectancy is now possible with diagnostic and therapeutic tools to show us how to slow down or even turn back our biological clocks by influencing what genes are activated—and which ones stay dormant.

For example, certain genes make us more vulnerable to cancer or other diseases, while others make us less vulnerable. Activities like smoking can influence which genes are activated.

Digital models have been created to predict age-related health problems by studying the underlying causes of aging and testing how they respond to factors that shift our epigenetics, such as diet, exercise, and environmental exposures. These digital models are known as epigenetic aging clocks and they aim to simulate the epigenetic clock inside each person that influences their aging process.

### Epigenetic Aging Clocks

The epigenetic clock is used to quantify the aging processes and measure biological age and the pace of aging.

There have been dozens of aging clocks developed over the past 10 years. These clocks have used almost every type of biological data that changes with age, and they utilize machine learning to build a model to predict chronological age.

Epigenetic clocks have been developed based on various tissues and cell types, including blood, saliva, and even specific organs. These clocks can provide a measure of biological aging that can be distinct from chronological age. In other words, they can distinguish between how old a person is in years, and how old they are in terms of physiological processes that keep the body alive and well. This distinction is why some people look younger than their years—and live longer—that others.

In some cases, the difference between biological age and chronological age, known as age acceleration, has been associated with various health conditions and diseases.

Biological markers are used to estimate an individual's biological age based on changes in the epigenome, which refers

to chemical modifications of DNA and associated proteins that can influence gene expression. The tests mainly involve the measurement of DNA methylation, as this can show the biological age of a person.

DNA methylation, a mechanism used by cells to control gene expression, is a type of epigenetic modification that is often used as a basis for developing these clocks.

The DNA methylation patterns across the genome change as a person ages, and epigenetic clocks use these patterns to predict an individual's biological age, which may or may not correspond to their chronological age. By comparing the methylation status of specific sites on the DNA, researchers have developed algorithms that can estimate biological age.

### Recent Review of Epigenetic Aging Factors

A recent review published in Ageing Research Reviews examined the latest technological developments in the epigenetic aging clock, including using DNA methylation patterns to predict biological age, and practical interventions to slow down or reverse the aging process.

Researchers found specific underlying mechanisms that contribute to biological aging, with important implications for longevity for those willing to modify their lifestyle.

Since aging is a systemic process that has an impact on all levels of our biological systems—our organs, tissues, cells, and their respective molecular components—researchers assessed different factors and their impact on epigenetic age.

### KEY FINDINGS

- **Alcohol:** Binge drinking increases epigenetic age by 1.38 years in young adults, while each day of binge drinking contributes 0.15 years.
- **Smoking:** Increases the age of human respiratory organs by four to five years.
- **Calorie Restriction:** Improves survival rate, with a 30 percent reduction in late-life mortality. A reduction in caloric intake by 25 percent for a period of two years reduces the pace of aging by 2 to 3 percent.
- **Mediterranean Diet:** After one year of an elderly-tailored diet, participants reduced their epigenetic age by 0.58 years. A healthy diet decreases the risk of cardiometabolic disease, cancer, and death.
- **Curcumin:** This key substance in the spice turmeric was shown to reduce tumor growth via the inhibition of telomerase (an enzyme related to aging) activity in tumor cells.
- **Obesity:** Increasing BMI by 10 units increased epigenetic age by one to three years.
- **Psychological Stress:** Lowers telomerase activity and increases age acceleration.
- **Meditation:** Reduces the pace of aging in all age groups and each year

of practice reduced the epigenetic age by 0.24 years in long-term meditators older than 52 years.

The scientists noted that the research now being done can provide important insights for future health care approaches.

“Although the exact magnitude of the effects that different lifestyle components exert on epigenetic aging remains undetermined in most cases, the widespread adoption of aging clocks can bridge this knowledge gap and, ultimately, enable a new mode of healthcare decision-making to fight the problem of global population aging.”

### 6 Lifestyle Habits That May Add Years to Your Lifespan

Here are some practical strategies, based on study findings, that may help slow the biological aging process and influence your own epigenetic clock.

#### EXERCISE REGULARLY

Regular physical activity has been shown to have numerous health benefits, including slowing down the aging process. Exercise can positively impact DNA methylation patterns, influencing genetic expressions that can slow biological aging. Aim for a combination of aerobic exercise, strength training, and flexibility exercises.

#### MAINTAIN A HEALTHY DIET

A balanced diet rich in fruits, vegetables, whole grains, lean proteins, and healthy fats can support overall health and potentially slow epigenetic age acceleration.

Some dietary components, such as resveratrol (found in red grapes and berries) and curcumin (found in turmeric), have shown promise in influencing DNA methylation patterns.

#### MANAGE STRESS

Chronic stress can accelerate the aging process and affect epigenetic mechanisms. Thus it is beneficial to engage in stress-management techniques like mindfulness meditation, yoga, deep breathing exercises, or engaging in hobbies that help you relax and unwind.

### Epigenetic clocks have been developed based on various tissues and cell types, including blood, saliva, and even specific organs.

#### GET ENOUGH SLEEP

Poor sleep quality and inadequate sleep duration have been associated with accelerated aging. Aim for seven to eight hours of quality sleep per night, and establish a regular sleep routine.

#### AVOID TOXIC SUBSTANCES

Certain toxic lifestyle factors, such as smoking, excessive alcohol consumption, and exposure to environmental toxins, can accelerate the aging process and potentially influence epigenetic clocks. Minimize or eliminate these harmful substances as much as possible from your life.

TERRY VINE/GETTY IMAGES



### NURTURE SOCIAL CONNECTIONS

Strong social connections and a sense of belonging have been linked to better health outcomes and longevity. That's why you should cultivate meaningful relationships and engage in social activities that bring you joy and fulfillment.

While these strategies may have a positive impact on overall health and potentially slow down the aging process, it's important to note that epigenetic clocks are still an area of active research.

The extent to which these lifestyle factors can directly influence epigenetic clocks is not yet fully understood. It's always a good idea to consult with healthcare professionals for personalized advice on maintaining a healthy lifestyle and aging gracefully.

### ▲

Meaningful relationships and frequent social activities will help bring you joy and fulfillment.

Irina Antonova holds a M.S. in genetics (from Bulgaria) and Ph.D. in biotechnology (from Australia). Throughout her career, Irina worked as a scientist in academia and the industry, as well as teaching at universities. She enjoys learning about the mysteries of mind, body, life, and the universe.

# The Draining Effects of Energy Drinks

The brain and body pay the price for a short burst of false energy

By Michelle Standlee

Walk past a beverage cooler in any store and you'll be struck by lightning bolts and bold lettering screaming, "Energy!"

The makers of these drinks promise that ingredients such as caffeine, amino acids, and herbal extracts will deliver superhuman focus and motivation by the sip. Yet lurking beneath the pull tab is a danger that may outweigh any lift the drink offers. It's important to ask, "What if the cost of this burst of energy isn't just money?"

## The Evolution of Energy Drinks

The origins of energy drinks can be traced back decades before their rise to mass popularity.

In 1929, the glucose-based drink Lucozade Energy (formerly Glucozade in 1927) was introduced in the United Kingdom as a nutritional supplement for hospital patients recovering from illnesses, including the flu.

Later, in 1949, Dr. Enuf, containing a mixture of caffeine, B vitamins, and sugar, became the first carbonated energy drink in the United States when it was introduced in Chicago.

However, it wasn't until the massive marketing campaigns of Red Bull in Austria and beyond in the late 1980s

and 1990s that energy drinks really took off globally. Red Bull, a mixture of caffeine, taurine, B vitamins, and sugar, established the standard energy drink formula many brands mimic today.

Today, the global energy and sports drinks market is valued at more than \$159 billion, with the United States alone accounting for nearly \$14 billion.

In addition to adults, teenagers are drawn to these energizing tonics for academic or sports performance. Some schools have begun to ban energy drinks because of their high sugar and caffeine content, which can result in energy crashes, making long-term focus and studying difficult.

## The Sinister Side of Sweet Energy Surges

While energy drinks may provide short-term benefits such as alertness and focus, research indicates they can also have negative health effects.

"The amount and quality of caffeine inside the energy drinks gives a false source of energy," Omar Eliwa, a registered pharmacist in Wisconsin, told The Epoch Times. "You're getting more than what your brain can take. It will be detrimental in the long-term to memory, the aging of the cells, depletion of nutrients, and it makes you not want to eat, so it affects metabolism as well."

## How Energy Drinks Affect Your Brain

Researchers are getting more insight about how the combination of ingredients in energy drinks affects the brain, and it isn't an encouraging picture.

**1. Neurodegenerative Disorders and Brain Aging**  
Caffeinated energy drinks can cause neurodegenerative changes in the hippocampus, an essential structure for long-term memory, in male albino rats, according to a 2020 study published in the *Anatomy and Cell Biology* journal.

High sugar intake has also been linked to an increased risk of insulin resistance. Insulin resistance prevents cells throughout the body, including brain cells, from adequately absorbing glucose. Over time, impaired insulin signaling may contribute to neurodegeneration and accelerated brain aging.

Moreover, insulin resistance contributes to the advancement of Alzheimer's disease through various mechanisms, including the escalation of oxidative stress, as indicated by a study published in the *International Journal of Molecular Sciences* in 2021.

"[Energy drinks] are often packaged in aluminum, a neurotoxin that has been linked to Alzheimer's disease," Dr. Aruna Tummala, an integrative psychiatrist at Trinerity Health and founder of Psychiatry 2.0, told The Epoch Times.

## 2. ADHD

Food dyes such as red dye 40, also known as Allura Red AC, are common in energy and sports drinks, and they can decrease the absorption of minerals such as zinc and iron that are needed for growth and development.

As a diuretic, caffeine in energy drinks can lead to dehydration by increasing urine output. Adequate hydration is critical for proper brain function, as brain cells consist primarily of water. Dehydration from energy drinks can therefore cause fatigue and poor concentration.

Some research suggests that artificial food colorings may exacerbate attention-deficit/hyperactivity disorder (ADHD) symptoms in children. In 2007, a randomized controlled trial conducted in the UK showed that the consumption of artificial colors, the widely used preservative sodium benzoate, or both was linked to heightened levels of hyperactivity in children.

A meta-analysis conducted in 2022 estimated that about 8 percent of children with ADHD experience symptoms associated with the consumption of food dyes and indicated potential benefits in removing artificial colors from their diets.

## 3. Fatigue, Insomnia, and Headaches

"Sugar and caffeine crashes are very real," Aidan Prud'Homme, a high school student, told The Epoch Times. He consumed one or two energy drinks daily to stay focused and energized at school. Some accompanying side effects included prolonged fatigue, headaches, and sleep problems.

As a diuretic, caffeine in energy drinks can lead to dehydration by increasing urine output. Adequate hydration is critical for proper brain function, as brain cells consist primarily of water. Dehydration from energy drinks can therefore cause fatigue and poor concentration.

Energy drinks can lead to long-term insomnia due to the caffeine they contain, according to Dr. Tummala. Caffeine promotes wakefulness by increasing levels of histamine and glutamate, neurotransmitters that disrupt sleep cycles.

Stopping energy drink consumption can lead to caffeine withdrawal, often causing headaches, Dr. Tummala said. Upon discontinuing caffeine, blood vessels widen, causing an increase in blood flow and resulting in heightened pressure that triggers a headache.

**4. Anxiety**  
Energy drinks can increase the level of catecholamines, neurotransmitters involved in the body's stress response. The spike in these chemicals increases heart rate and blood flow, triggering a fight-or-flight response in some people, leading to anxiety.

**5. Seizures**  
There is growing concern over the link between energy drinks and increased seizures. The caffeine in energy drinks promotes the release of glutamate and dopamine, excitatory neurotransmitters, and reduces responsiveness to GABA, an inhibitory neurotransmitter in the central nervous system, thus lowering seizure threshold, according to a recent Nutrition review article. The seizures stopped when people refrained from consuming energy drinks.



## ENERGY DRINKS' LINK TO INSOMNIA AND FATIGUE

Sugar and caffeine provide a momentary rush but they also tax the body, contributing to insomnia and disrupting our levels of histamine, glutamate, and neurotransmitters.

ALL PHOTOS BY GETTY IMAGES

You're getting more than what your brain can take.

Omar Eliwa, registered pharmacist



## THE ENERGY DRINK EXPLOSION

While energy drinks first emerged in the 1920s, they didn't take off until Red Bull swept the world in the late 1980 to '90s with its signature mixture of caffeine, taurine, B vitamins, and sugar.

\$159 BILLION

Today, the global energy and sports drinks market is valued at over \$159 billion.

## INTENTIONAL LIVING

# Stress Is a Choice: Here's How to Choose Calm

These 10 tips can give you a quick way to ease your daily load of stress and frustration

By Mike Donghia

In life, there will be painful realities we can't avoid. The anguish of losing a loved one, the suffering of chronic pain, or the uncertainty of losing a job are just a few.

The only way around these challenges is through them—ideally with the love and support of a close friend or family member.

But there are many inconveniences and frustrations that we put up with, never realizing that we actually have a choice in the matter.

We live as if these things "just happen" to us, but in fact, we make choices every day that reinforce their occurrence and fan the flames of their power.

The vast majority of stress I've experienced in my life, and perhaps your life, too, falls into this category.

It might not be easy, and the results may not be instantaneous, but our choices inevitably set the direction and

momentum of our lives—as well as the burden of our daily stress.

If stress is keeping you from enjoying your life, you might be encouraged to hear that a calmer path can be within reach.

From years of observation and experimentation, here are the 10 pieces of advice that have most helped me to reduce stress.

## 10 Tips to Reduce Stress (and Choose Calm)

**Be Obsessively Single-Minded**  
Life was meant to be lived one moment at a time. We can almost always handle the present moment with ease. It's only when we try to carry the weight of the current task and the next one, along with the uncertainty of a future outcome, that the load becomes stressful. Don't bother with all that. Focus on what's in front of you.

**Recalibrate Your Expectations**  
Much of our stress is because the world (or people) aren't the way we want them to be. But ask yourself what's easier: to get the world to change or simply to change what you expect? That doesn't mean you can't

work toward a better future, only that you accept the current reality as a starting point.

## Embrace the Inherent Uncertainty of Life

The more you try to control life, the more you realize how fragile your control really is. We don't know what the future holds, and we often can't tell which choice will be better. Instead of fighting this reality, accept uncertainty as an ingredient for adventure. You'll make the "wrong" choice from time to time. Such is life.

## Build an Identity That Isn't Fragile as Glass

Do you see yourself as a high-achiever, maybe smarter and more successful than the "average" person? Be careful! When you build your sense of self in that way, you'll resent and fear anything which threatens that identity. Value yourself for something more intrinsic than your accomplishments.

## Strictly Limit Whose Opinions You Care About

One load we don't need to carry is the weight of everyone's expectations. You

simply can't please everyone or be at your best every second of the day. One way I push against this while trying to stay humble is by limiting my concern to the opinions of those who really know me.

## Don't Let Your Emotional Fuel Tank Run Empty

When I'm over-tired, hungry, and haven't had any time to enjoy life's simple pleasures, I'm much more likely to stress over life's daily challenges. Keeping my emotional tank filled and my energy levels topped up means my tolerance for frustration is much higher across the board.

## Cut Out Rumination at the First Sign

Excessive thinking and worrying about a topic is a sure path to stress. Sometimes the stress leads to rumination, but for me, it's just as often the other way around. While it isn't easy to redirect your thoughts, it's possible with consistent effort. Don't just tell yourself to stop thinking about something, distract yourself with another activity that demands your full attention.

**Make Progress in Key Areas a Priority**  
Most of my stress occurs when I feel stuck for long periods of time. By then, my lack of progress is mixed with guilt and frustration for not getting back on track sooner. The solution is hard but simple: Don't let a day go by when you aren't making progress

in the areas that matter most to you. No matter how imperfect or small that progress may be, it'll go a long way in holding the stress at bay.

## Don't Let Yourself Get Addicted to Comfort

Another stressor in life is the fear of losing something you can't imagine living without. Are you addicted to comfort and ease? Then, of course, you'll feel stressed by anything that might keep you from your pleasures. A healthy way to counterbalance this effect is by regularly doing hard things in order to remind yourself of what you're capable of.

## Allow a Friend to Share Your Burdens

I've consistently experienced that sharing my stress with someone who cares about me lightens the load. I can't explain this except that getting my thoughts outside of my own head helps to give me a new and better perspective on the matter. And sometimes that's all I need.

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

8%

OF CHILDREN with ADHD may have symptoms associated with the consumption of food dyes.

stress hormone cortisol. Over time, this can overwork the adrenals, potentially leading to adrenal exhaustion, fatigue, and impaired stress response.

## 3. Heart Problems

"The high caffeine content in energy drinks is associated with heart arrhythmias and sudden cardiac death," Dr. Tummala said. Caffeine and taurine affect cardiac rhythm and repolarization, facilitating arrhythmia, according to a 2022 experimental study using rabbit hearts. At least one human case report has also connected excessive consumption of energy drinks to acute heart failure.

## Healthy Alternatives

Having encountered troublesome side effects, high schooler Aidan eventually opted for healthier drinks.

Healthier alternatives can provide sustained energy and focus minus the risks. Sparkling water with a splash of fruit juice, for example, makes a refreshing, soda-like drink packed with antioxidants.

Herbal teas such as hibiscus and rooibos also contain beneficial antioxidants and phytochemicals.

Even better than a drink is physical activity such as walking, which has been shown to reduce stress, boost energy levels, and support brain health and is especially important for children today who have adopted more sedentary lifestyles.

Health experts stress the importance of parental awareness regarding children's drink choices.

"One of the critical points I have against energy drinks is the deceptive method of marketing to the consumer who might not know what is being presented to them," Mr. Eliwa said.

"We have to pay attention to the little details. Check the labels," he added. "We have to protect our kids."

*Michelle Standlee, R.N., is a health reporter for The Epoch Times. She has a background as a registered nurse and medical writer, covering topics including mental and behavioral health, women's and children's health, traditional health care, complementary medicine, and alternative medicine.*



Calming your mind and redirecting your thoughts is a powerful ability that requires consistent effort to learn.

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▲ Waiting for some future special moment can blind you to the one you're living.

## WISE HABITS

# The Moment of a Lifetime

By Leo Babauta

There's a concept in Japanese tea ceremony from Zen, roughly translated as "one chance in a lifetime," or "one lifetime, one meeting." It's such a beautiful idea: Any meeting you have with someone is unique, fleeting, and will never happen again—

even if you see this person every day. What would life be like if we could learn this kind of deep appreciation for any moment?

I notice myself often in a hurry for something I want to happen right away. I want it to be fully finished, yesterday. I'm overlooking the incredible moment that's happening right now.

I notice myself frustrated with other people, even if I don't want to admit that frustration. I want the other person to be different from how they are, want them to change. I'm missing out on the beauty of being with this person just as they are.

I notice myself wanting to rush around doing things, and wanting to fill every moment with distractions, productive actions, busyness. I'm missing an opportunity for stillness, for stopping and just being in the beauty of the present moment.

I often seem to think (without realizing it) that there's some special moment in life that's coming, that will be more special than life is right now. What I forget is that life doesn't get more special than what's happening right now.

This here, this moment happening right now, this is the moment of a lifetime. How gorgeous it is.

*Leo Babauta is the author of six books and the writer of Zen Habits, a blog with over 2 million subscribers. Visit ZenHabits.net*

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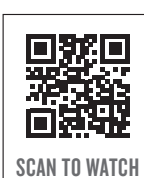


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### 'The Plague Dogs'

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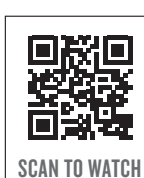


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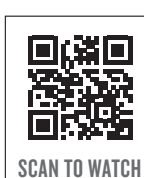


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▲ Certain foods have the power to shift our beneficial microbes in ways that can improve our moods and provide other mental health benefits.

## MICROBIOME

# How a Psychobiotic Diet Boosts Mental Health

By George Citroner

Nurturing our microbes could be key to resolving mental illness for many, research suggests

The notion of an angel on one shoulder and a devil on the other influencing our mental state may have a microbial connection.

However, the culprits aren't necessarily tiny invisible beings murmuring in your ears; they could be microscopic organisms inhabiting your gut.

Mounting evidence reveals that the trillions of microbes in your gut wield immense influence over brain function. **Balanced Gut Flora Key to a Healthy Mind**

Maintaining a balanced gut microbiome is pivotal for a healthy mind. Key to that effort are both prebiotics, which are specialized dietary fibers that nourish beneficial gut bacteria, and probiotics, which are live microorganisms found in food and are often referred to

as "good" bacteria. These bacteria are also found in the gut as part of the gut microbiome, and eating probiotics can help supplement their numbers.

The gut microbiome can be considered "the key" to a healthy and happy life, Dr. Ajeet Kumar, a gastroenterologist and telehealth provider at iCliniq, told The Epoch Times. A "lack or imbalance" could severely affect not only physical health, but also mental state.

Imbalanced gut microbiota disrupts the gut-brain axis, impacting neurotransmitter production and stress response, and thus contributing to chronic issues such as anxiety, depression, and cognitive decline.

There's also evidence that certain substances can adversely affect gut bacteria, changing how well we think in the long term.

One cohort study monitored the health of 14,542 female nurses in the United

States over four years. It found that nurses who took antibiotics for more than two months scored lower on cognitive tests that involved learning, memory, and attention than those who hadn't used antibiotics. Even more notably, the cognition of antibiotic users was still impaired at a seven-year follow-up. Researchers hypothesize that these cognitive declines may be due to antibiotic-induced microbiome changes. Specifically, antibiotics appear to reduce microbial diversity and resilience in the gut, which can impact gut-brain axis communication.

**Mental Benefits of a Psychobiotic Diet**  
Psychobiotics are live microorganisms that positively impact mental health when consumed in adequate amounts. The diet focuses on foods rich in probiotics, such as fermented foods; prebiotics; and other nutrients linked to mood improvement.

**Stress**  
As scientific understanding of the gut-brain connection expands, new research indicates that a "psychobiotic" diet may be a promising treatment for mood disorders such as depression.

A recent trial randomized 45 partici-

Continued on Page 14

## COVID-19 VACCINES

# COVID Vaccines May Be Linked 'Turbo Cancers,' Warn Experts

Studies and experts suggest mRNA vaccines could fuel rapid and dangerous cancers in young people

By Megan Redshaw

Experts are seeing a puzzling rise in cancer in people younger than 50 that appears biologically different from late-onset cancers. While some claim that cancer rates have been rising for decades and attribute the increase to sugary drinks, lifestyle, and sleep disruptions, others say mRNA COVID-19 vaccines have caused an emergence of "turbo cancers."

Although there's no official medical definition for what doctors are calling "turbo cancers," the term is commonly used to define aggressive, rapid-onset cancers resistant to treatment—primarily in young, healthy individuals following COVID-19 vaccination. These cases often present in a late stage with metastasis and quickly turn fatal.

"What's happening is these cancers we're used to seeing, their growth pat-

**Cancers are increasing at a rate above what's expected, and countless doctors and clinicians around the world have confirmed this.**

terns and their behavior are completely out of character. ... So 'turbo cancer' is something that wasn't there and, all of a sudden, it's everywhere," Dr. Ryan Cole, a pathologist and CEO of Cole Diagnostics, said in an interview on EpochTV's "American Thought Leaders."

He told The Epoch Times in a later interview that he first noticed an uptick in certain types of cancers after the vaccine rollout in December 2020 and that he believes that researchers are starting to understand how these cancers are occurring.

"Physicians are seeing multiple types of cancers in their day-to-day practices—and in young patient cohorts where you typically don't see cancer. Although the increase in cancer has been blamed on missed screenings, you know it isn't due to missed screenings because young people don't typically get screened," Dr. Cole said.

Continued on Page 14



A variety of biological mechanisms may link vaccines to aggressive cancers.

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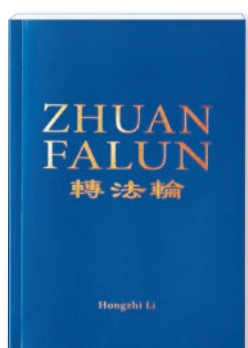
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Physicians are reporting a rise in cancers in their day-to-day practices among young patient cohorts.

### COVID-19 VACCINES

## COVID Vaccines May Be Linked ‘Turbo Cancers,’ Warn Experts

Continued from Page 13

Cancers are increasing at a rate above what’s expected, and countless doctors and clinicians around the world have confirmed this. Their patients are cancer-free for years, but then after a booster, cancers “pop up,” he said. What’s unique about turbo cancers is that they don’t respond to traditional treatment because the cells have been altered in the bone marrow, and the cells “aren’t doing what they’re supposed to.”



Antibodies triggered by multiple vaccine doses may suppress anti-cancer immune cells.

### Studies, Case Reports of Cancer Following Vaccination

Studies and case reports of various cancers following mRNA vaccination are helping experts understand the potential mechanisms that may be allowing these cancers to proliferate.

In a recent Belgian study published in *Frontiers in Oncology*, researchers presented the first case of malignant lymphoma in mice. Malignant lympho-

ma is a rare adverse event reported following mRNA COVID-19 vaccination.

Two days after receiving a booster dose of Pfizer’s COVID-19 vaccine, 1 of 14 mice suffered spontaneous death. Upon examination, the 14-week-old mouse had abnormally large organs and cancerous lymphoma in the liver, kidneys, spleen, heart, and lungs. Although showing direct causality is complex, the authors said their findings add to “previous clinical reports on malignant lymphoma development following novel mRNA COVID-19 vaccination.”

In a January paper in *Medicina*, researchers presented the case of a 66-year-old man who developed swollen lymph nodes 10 days after receiving his third dose of the Pfizer vaccine. After further testing, the patient was diagnosed with stage 2 non-Hodgkin lymphoma (NHL). A literature review found eight additional cases of NHL that developed shortly after COVID-19

vaccination. Five lymphoma cases occurred after vaccination with Pfizer, one case after vaccination with AstraZeneca, one after the Johnson & Johnson vaccine, and one after vaccination with Moderna.

In an August 2022 Letter to the Editor in the *Journal of the European Academy of Dermatology & Venereology*, physicians described two patients diagnosed with diffuse large B-cell lymphoma that developed from swollen lymph nodes following vaccination with Pfizer’s COVID-19 vaccine.

The study’s authors found that diffuse large B-cell lymphoma “may rapidly grow” after vaccination with Pfizer’s COVID-19 vaccine and urged dermatologists to pay attention to swollen lymph nodes or masses near the injection site.

Swollen lymph nodes, or lymphadenopathy, is considered a common side effect of COVID-19 vaccination, more often observed following immunization with novel COVID-19 mRNA vaccines than other vaccines.

Lymphadenopathy is also an acknowledged “nonserious” adverse event of COVID-19 vaccination listed in the U.S. Food and Drug Administration’s (FDA) fact sheets for health care providers for both Moderna and Pfizer’s monovalent and bivalent vaccines. However, pharmaceutical companies and U.S. regulatory agencies haven’t assessed whether there’s a link between vaccine-related lymphadenopathy and cancer.

A year after the vaccine rollout, researchers published a case report in the *Journal of the American Medical Association (JAMA)* of a healthy 39-year-old woman diagnosed with “vaccination-

associated reactive lymphadenopathy” following vaccination with Pfizer’s vaccine. Six months later, she was diagnosed with invasive breast cancer in her right breast—the same side of the body where she received her vaccination and experienced swollen lymph nodes.

### Urgent Need to Determine Underlying Causes of Turbo Cancers

The exact mechanism giving rise to turbo cancers is unknown, and it’s unclear whether one or multiple mechanisms are responsible for these cancers, Dr. William Makis, an oncologist, cancer researcher, and nuclear medicine radiologist, told *The Epoch Times* in an email.

Dr. Makis provided the following several possible hypotheses for how mRNA COVID-19 vaccines could cause turbo cancers:

- The current COVID-19 mRNA vaccines contain pseudouridine-modified mRNA, which attenuates or alters the activity of key proteins in the innate immune system, impairing cancer surveillance. When activated, these key proteins, called toll-like receptors, can prevent tumors from forming and growing.
- Vaccination alters T-cell signaling that induces profound impairment in type 1 interferon and cancer surveillance. T-cells, a type of white blood cell, help the body’s immune system
- The spike protein produced by the body after COVID-19 mRNA vaccination may interfere with important tumor suppressor proteins—P53, BRCA 1, and two tumor suppressor genes.
- The RNA from the COVID-19 vaccines may be reverse-transcribed and integrated into the human genome.
- Pfizer and Moderna vials found to be contaminated with plasmid DNA containing SARS-CoV-2 spike protein may integrate into the human genome.
- The presence of the simian virus 40 (SV40) in DNA discovered in Pfizer mRNA vaccine vials may lead to cancers—most notably, non-Hodgkin lymphoma and other lymphomas—as it did with SV40-contaminated polio vaccines.
- mRNA-based vaccines may be triggering the release of oncomiRs or microRNAs, which can enhance or inhibit cancer development and participate in cancer biological processes, such as proliferation, invasion, metastasis, angiogenesis, chemoresistance, and immune escape.

prevent cancer. Studies show that getting multiple doses increases the level of a particular antibody called IgG4, causing T-cell and interferon suppression, leading to an inability to keep cancer in check, Dr. Cole told *The Epoch Times*.

“Everyone gets atypical cells in their body every day, and having a surveillance system is important, but when the surveillance system is shut off, that allows these cells to go haywire. How long it stays suppressed, nobody knows, and these are the studies NIH (the National Institutes of Health) should have been doing,” he said.

- The shift of the antibody IgG4 caused by repeated mRNA vaccination could create a tolerance for spike protein and impair the production of the antibodies IgG1 and IgG3 and cancer surveillance.
- The spike protein produced by the body after COVID-19 mRNA vaccination may interfere with important tumor suppressor proteins—P53, BRCA 1, and two tumor suppressor genes.
- The spike protein may interfere with DNA repair mechanisms.
- The RNA from the COVID-19 vaccines may be reverse-transcribed and integrated into the human genome.
- Pfizer and Moderna vials found to be contaminated with plasmid DNA containing SARS-CoV-2 spike protein may integrate into the human genome.
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- mRNA-based vaccines may be triggering the release of oncomiRs or microRNAs, which can enhance or inhibit cancer development and participate in cancer biological processes, such as proliferation, invasion, metastasis, angiogenesis, chemoresistance, and immune escape.



Government agencies knew there were going to be cancers with these shots, and they were trying to cover it up, but the data is trickling out.

Dr. Ryan Cole, pathologist

Times in an email that neither Comirnaty—Pfizer’s fully approved version of its COVID-19 vaccine—nor Spikevax by Moderna has been evaluated for its potential to cause cancer.

On March 30, Mr. Wiseman and four other experts submitted a 27-page document to the National Academies Committee, an ad hoc committee tasked with reviewing relevant adverse events associated with COVID-19 vaccines.

Using the Vaccine Adverse Event Reporting System (VAERS)—a database co-managed by the U.S. Centers for Disease Control and Prevention (CDC) and FDA used for reporting vaccine adverse events—Mr. Wiseman and his co-authors found an excess of cancer signals for COVID-19 vaccines from Dec. 14, 2020, to July 24, compared to all other vaccines for all years beginning in 1990.

A safety signal indicates that a condition may be linked to a vaccine but requires further analysis to confirm an association.

The findings complemented the CDC’s Proportional Reporting Ratio (PRR) analyses obtained through a Freedom of Information Act (FOIA) request that assessed adverse events reported from Dec. 14, 2020, to July 29, 2022.

The PRR compares reports of specific adverse events experienced after receiving Moderna or Pfizer’s COVID-19 vaccine to those

following vaccination with any other vaccine or all non-COVID-19 vaccines. The CDC’s PRR report detected cancer signals for colon cancer, metastatic breast cancer, metastasis to the liver, bones, central nervous system, lymph nodes, breast masses, chronic lymphocytic leukemia, B-cell lymphoma, and follicular lymphoma.

Mr. Wiseman said it’s clear from the FOIA documents that the CDC is aware of cancer reports and isn’t being forthcoming.

“Government agencies knew there were going to be cancers with these shots, and they were trying to cover it up, but the data is trickling out,” Dr. Cole told *The Epoch Times*, referring to 490 pages of communications obtained from the NIH through a FOIA request.

The CDC is supposed to report on morbidity and mortality—and when a pathologist diagnoses anything, he or she uses a diagnosis code, and it goes to the federal basis that’s reported to federal tracking agencies, he explained.

“All these data subsets should be easy to find if agencies would report what they have,” Dr. Cole said. “We could see statistical changes in diagnosis in the past 2 1/2 years since shots were rolled out. The question is, why are other governments around the world not doing this?”

*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.*

### MICROBIOME

## How a Psychobiotic Diet Boosts Mental Health

Continued from Page 13

pants into either a psychobiotic diet group or a control group. Those on the psychobiotic diet were encouraged to eat more whole grains, fruits, vegetables, fermented foods, and legumes. They were also advised to limit sweets, fast food, and sugary drinks.

After four weeks, the psychobiotic diet group displayed a 32 percent decrease in perceived stress, surpassing the control group’s 17 percent reduction. Better adherence to the diet was associated with more significant improvements.

Probiotic supplements containing Bifidobacterium and Lactobacillus strains significantly reduced psychological distress and physiological stress markers compared to a placebo in a randomized controlled trial of healthy adults.

### Depression

Antidepressants are the typical first-line treatment for major depressive disorder (MDD). However, almost 70 percent of patients don’t achieve remission after initial treatment, and up to 30 percent don’t respond at all. New research indicates that probiotics may help restore MDD patients’ mental health.

Recent research that’s still in the preprint stage reveals that there are apparent differences between the gut microbiota of those with psychological disorders and those without. The microbiome is a “plausible target for the treatment and prevention of depressive symptoms,” the study authors stated.

New evidence from an eight-week trial that involved 50 participants with MDD found that those who used probiotic supplements with 14 strains of

beneficial bacteria showed reduced symptoms of depression and anxiety after four weeks.

“This is the first trial in a Western population to demonstrate the safety, acceptability, and therapeutic potential of a readily available and scalable probiotic intervention in patients with MDD,” the study authors wrote, acknowledging that further investigation of probiotics as an add-on treatment for people struggling with depression is needed.

The gut microbiome can be considered ‘the key’ to a healthy and happy life.



Mothers who breastfeed their infants for at least six months may also be helping to boost their baby’s gut microbiome.

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### Processing Emotions

A 2013 randomized, controlled study found that regularly consuming probiotics could influence brain activity associated with the control and processing of emotions in healthy women.

Researchers divided 36 women aged 18 to 55 into three groups. One group ate yogurt with probiotics twice daily for four weeks. Another ate a dairy product such as yogurt without probiotics. The third group ate neither.

Brain scans conducted before and after the four-week experiment showed that only the probiotic group had enhanced connections between the periaqueductal gray, a brainstem region that modulates pain response, and areas tied to cognition, emotion, and sensation.

### What to Eat on a Psychobiotic Diet

Maintaining a healthy microbiome involves multiple strategies.

Dr. Kumar recommends the following:

- Eating fermented foods such as yogurt, kombucha, miso, and sauerkraut.
- Eating prebiotic foods, including bananas, oats, and asparagus, to promote the growth of beneficial bacteria.
- Breastfeeding infants for at least six months to develop their gut microbiome.
- Consuming high-fiber foods such as chickpeas, lentils, and whole grains to promote diversity in gut bacteria types.

On a tastier note, compounds called polyphenols found in

plant-based foods, such as blueberries and dark chocolate, can also nurture a healthy microbiome. Polyphenols impact the gut microbiota by boosting the proliferation of beneficial bacteria.

A psychobiotic diet may benefit mental health by supporting gut microbiome health, but it may not treat severe mental disorders alone. By taking a holistic approach focused on your gut bacteria, you may note improvements in mood, anxiety, and general well-being.

Kombucha is a probiotic drink growing in popularity.





LONG COVID

# Unraveling the Cognitive Puzzle of Long COVID

New research uncovers long-term cognitive impairment in COVID-19 survivors

By Sheramy Tsai

**B**rain fog, the struggle to recall words, and forgetting why you entered a room may be more than mere annoyances. They could be lingering symptoms of COVID-19.

Researchers in the UK found that individuals reporting long-lasting COVID-19 symptoms—persisting for at least three months post-infection—exhibited diminished capabilities in areas such as memory, reasoning, and motor control. The findings were recently published in *The Lancet's eClinicalMedicine* journal.

"The fact remains that two years on from their first infection, some people don't feel fully recovered, and their lives continue to be impacted by the long-term effects of the coronavirus," Claire Steves, co-author of the study and a professor at King's College London, wrote.

The study engaged 3,335 individuals from the United Kingdom COVID Symptom Study Biobank for a two-round evaluation spanning July 2021 to June 2022.

The participants, including both those who tested positive for SARS-CoV-2 and those who tested negative, were assessed across 12 different tasks. These tasks were designed to test cognitive functions such as working memory, attention, reasoning, processing speed, and motor control.

The analysis specifically examined the effects of COVID-19 exposure on cognitive accuracy and reaction time. It also looked into the role of ongoing symptoms after infection with the aim to provide valuable insights into the impact of the virus on mental functions.

Researchers found notable cognitive deficits in individuals who tested positive for SARS-CoV-2 and experienced symptoms for 12 weeks or more.

These deficits—detected in areas such as visual memory and attention—were comparable in scale to the effect of aging by 10 years or being hospitalized during the illness. Notably, the deficits persisted almost two years after the infection in some cases, which raised concerns about the lasting effects of COVID-19 on cognitive function.

When asked about the daily implications of cognitive deficits as compared with approximately 10 years of aging, Ms. Steves offered a sobering perspective to *The Epoch Times*.

"The effects are tangible, and although they are relatively small, they are probably noticeable in everyday life," she explained.

Ms. Steves said that the data represent an average across varying cases.

"The changes we report are average changes across groups of people, and some people will experience more or less," she said.

**Self-Perception of Illness and Recovery**  
The study also sheds new light on how people's self-perception of their recovery from COVID-19 correlates with their actual ongoing symptoms. The research divided individuals who had developed



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**As the understanding of long COVID's impact deepens, the next chapter will leverage this knowledge into action and guidance.**

**2 YEARS**

People with longer-lasting COVID-19 infections were more likely to report cognitive deficits two years later.

COVID-19 into groups based on their responses to the question, "Thinking about the last or only episode of COVID-19 you have had, have you now recovered and are back to normal?"

Those who answered "Yes, I am back to normal" didn't show cognitive deficits. "Importantly, we found no detectable impairment among people who reported as feeling recovered and 'back to normal' after their COVID-19 illness, even among individuals who experience long-term symptoms [for as long as or longer than] 12 weeks," the authors noted.

On the other hand, those who answered, "No, I still have some or all of my symptoms" revealed an increase in cognitive impairment. The study found that psychological distress and fatigue partially mediated these deficits.

According to the study's authors, self-perceived recovery was "highly correlated with symptom duration." This discovery aligns with smaller studies that have examined recovery self-assessment.

However, caution in interpretation is advised. Dr. Armen Nikogosian, a medical and functional physician treating long-COVID-19 patients, spoke about the complexity of the issue.

"Patients who suffer from the effects of long COVID are typically sidelined in conventional medicine," he told *Epoch Times*. "It's entirely possible that these patients continue to have symptoms not identified or validated by their health care providers."

The relationship between self-perception, symptoms, and recovery appears

multifaceted, and this study illuminates some aspects of that complexity.

## Cognitive Decline Following COVID-19

Cognitive impairments following infections with viruses such as SARS-CoV-2 are well documented, but the experience of living with the resulting "brain fog" is a complex and distressing reality for many.

Dr. Katherine Pannel, a psychiatrist and medical director of Right Track Medical Group in Oxford, Mississippi, experienced brain fog after contracting COVID-19 and describes the frustration of the condition.

"I was hesitant to do any kind of public speaking because I knew what I wanted to say, but I could not find the words. It was so frustrating," she shared on AMA's What Doctors Wish Patients Knew.

In January 2021, Jill, a respiratory therapist from Boston, experienced a mild case of COVID-19, marked only by a loss of smell and taste. As the year progressed, symptoms such as fatigue, forgetfulness, and getting lost while driving emerged. Jill's physician husband helped her to investigate, leading to a diagnosis of mild cognitive decline, believed to be related to COVID-19. They embarked on a regimen of supplements, anticoagulants, red-light therapy, dietary changes, and at-home rehabilitation.

Despite facing setbacks that included microclotting and cognitive impairment, Jill's continual efforts in rehabilitation—guided by medical professionals—have yielded improvement. Through perseverance and a regimented daily routine focused on diet, exercise, and cognitive training, she has seen progress in her recovery, although challenges remain.

The frustration extends beyond the symptoms themselves, as many sufferers face skepticism and disbelief about their condition, Dr. Pannel said.

"As a psychiatrist, I'm used to stigma surrounding mental health with depression and anxiety, but I'm even starting to see stigma surrounding long-COVID brain fog where a lot of people aren't believing that it exists," she said. "And patients are frustrated because they have

all these symptoms, but there's not a lab test or imaging to prove this is what's going on."

Solid data backs this anecdotal evidence. A 2022 meta-analysis published in *Alzheimer's and Dementia* analyzed 27 studies and found that adults recovering from COVID-19 displayed noticeable deficits in executive functions, attention, and memory up to seven months after infection.

This systematic review, including 2,049 people, shed light on a marked decrease in cognitive scores among those with no prior history of impairment. Determining the underlying causes of cognitive decline following COVID-19 remains a complex and unfolding area of study.

"Often underlying their cognitive decline is chronic inflammatory response syndrome, a complex illness in which individuals process

biotoxins differently," Dr. Nikogosian said. "Biotoxins from a variety of sources, like mold, pathological gut microbes, Lyme disease, and chronic infections, can lead to chronic inflammation for some individuals." This presents a challenge, he said, "when these individuals contract COVID, they struggle to clear the virus, resulting in symptoms such as brain fog."

Dr. Nikogosian said that treating long COVID isn't as simple as finding a quick-fix solution. Instead, the underlying health issues must be addressed with care and consideration, reflecting the multifaceted nature of the disease.

## Cognitive Decline: Virus or Vaccine?

The intersection of cognitive decline and COVID-19 extends beyond the virus, touching on a growing concern: the potential relationship between cognitive decline and COVID-19 vaccinations. Multiple case studies have identified cognitive decline in individuals following receipt of the COVID-19 vaccine. This phenomenon, labeled functional neurological disorder, has created a parallel dialogue about the cognitive impacts of both the virus and the vaccine.

The authors of the primary study adjusted for vaccination status. "We found only short-term symptoms with the CO-

VID vaccines generally," they told *Epoch Times*. "And we have another study which shows that the COVID vaccine seems to improve long-COVID symptoms. That's in large studies and suggests the vaccine is, overall, helpful."

In his practice, Dr. Nikogosian doesn't differentiate between the cognitive de-

cline in patients who've received the vaccine and those who were infected with the virus.

"The spike protein operates similarly in both the vaccination and the actual virus, both of which can potentially trigger cognitive problems," he said.

His perspective underlines the complexity of understanding the cognitive impact in the age of COVID-19, when both the virus and the vaccine present a set of questions and considerations that are still being explored by the medical community.

## Study Limitations

The study, while insightful, isn't without limitations. Data critical to the research—such as prior neurovascular and neurodegenerative comorbidities and pre-infection cognitive assessments—were largely unavailable. Treatment or cognitive rehabilitation information following SARS-CoV-2 infection was also missing. The cognitive tasks employed weren't exhaustive, and a more complete understanding might have been possible with full neuropsychological testing. However, such in-depth analysis wasn't feasible on this scale.

"The biggest limitation to this study is that it relied on voluntary prospective logging of symptoms, which, as we know, is highly subjective. The study offers some excellent insight on COVID-related cognition but needs further scientific validation," Dr. Nikogosian said.

Selection and participation biases might also have influenced the results, despite efforts to mitigate them. The study's findings may not be entirely generalizable, given the study's cohort composition. Notably, there were lower proportions of males, racialized nonwhite ethnic groups, those without a university-level education, and residents of more deprived areas, all compared with the broader UK population.

## Navigating the Next Steps

As the understanding of long COVID's impact deepens, the next chapter will leverage this knowledge into action and guidance. In June 2023, the U.S. Department of Health and Human Services (HHS) took a decisive step by issuing an

advisory to assist primary care clinicians in identifying and managing mental health symptoms of long-term COVID-19, including cognitive impairment.

This guidance comes at a crucial time, with the advisory revealing that at least 10 percent of COVID-19 patients experience symptoms of long COVID, a condition that may worsen and continue in a pattern of relapse and recovery.

Dr. Rachel Levine, the department's assistant secretary for health, has emphasized the importance of this directive, stating, "We know that people living with long COVID need help today, and providers need help understanding what long COVID is and how to treat it. This advisory helps bridge that gap for the behavioral health impacts of long COVID."

Long COVID is a federally recognized disability. This recognition comes under the Americans with Disabilities Act, Section 504, and Section 1557, specifically when it substantially limits one or more major life activities.

The guidelines provide a clear definition of the impact. "A person with long COVID who experiences memory lapses and 'brain fog' is substantially limited in brain function, concentrating, and/or thinking."

This official recognition underscores the seriousness of long COVID and opens the doors to essential support and accommodation for those living with its lingering effects.

"We don't know the long-term implications yet, but our findings would suggest that we should keep an eye on this, and be aware and compassionate with colleagues and patients reporting brain fog after COVID-19," Ms. Steves said.

*Sheramy Tsai, BSN, RN, is a seasoned nurse with a decade-long writing career. An alum of Middlebury College and Johns Hopkins, Tsai combines her writing and nursing expertise to deliver impactful content. Living in Vermont, she balances her professional life with sustainable living and raising three children.*

MADE TO MOVE

## Running and Walking May Be Good for Your Back

Research finds that moving your body more is the key to resolving chronic back pain

By Gabe Mirkin

People who run or walk regularly have healthier and stronger spinal discs than non-exercisers do. This is very reassuring because some doctors tell patients with back pain not to run because they think that the jarring of the foot striking the ground will damage discs and injure backs, even though there isn't data to support such opinions.

That said, if your back hurts when you run, you should stop running. Walking will offer much of the same benefit with less jarring.

The vertebral bones of the spine are separated by pads called discs that absorb the shock of hard exercise such as running or lifting weights. The nerves that supply your body branch out from the spine between the vertebral bones where the discs are located.

With aging or inactivity, the discs weaken and can be squashed between the much-tougher vertebral bones. A squashed disc can protrude between the vertebral bones and may pinch nerves, which can cause excruciating pain.

Scientists have known for hundreds of years that a lack of exercise weakens muscles and bones, while exercise strengthens them. But until recently, no good studies have shown that exercise also strengthens discs.

Some doctors believe that rapid movements and pressure will damage

discs, but several animal studies have shown that a regular exercise program strengthens discs, makes discs larger and stronger, and strengthens discs in rat spines.

Now, there are data showing that a regular exercise program strengthens human discs and is probably the most effective means of treating many cases of back pain caused by weak or damaged discs. We also have strong MRI data showing that people who run or walk regularly have larger and stronger discs that contain more fluid to pad and protect them from injury.

## Back Surgery Has an Incredibly High Failure Rate

A spinal fusion includes surgery to remove at least part of a disc and a bone graft to fuse the upper vertebral bone to the lower vertebral bone. Reports show that regular back exercises are usually more effective than this

surgery to treat back pain caused by disc compression. In spite of this evidence, the number of spinal fusions performed in the United States increased progressively until 2012. Then the rates of spinal fusions decreased, primarily because Blue Cross of North Carolina and several other insurers refused to pay for the procedure. This implies that the rate at which some surgical procedures are done is driven by the willingness of insurers to pay for a procedure.

*Sports medicine doctor, fitness guru and long-time radio host Gabe Mirkin, M.D. brings you news and tips for your healthful lifestyle. A practicing physician for more than 50 years and a radio talk show host for 25 years, Dr. Mirkin is a graduate of Harvard University and Baylor University College of Medicine. He is one of a very few doctors board-certified in four specialties: Sports Medicine, Allergy and Immunology, Pediatrics and Pediatric Immunology. Originally published on DrMirkin.com*



GROUND PICTURE/SHUTTERSTOCK



▲ The spike protein operates similarly in both the vaccine and the virus, both of which can trigger cognitive problems.

## Dr. Mirkin's Recommendations

- If you have back pain, you should check with your doctor for a specific diagnosis and treatment.
- Specific daily back exercises are the primary treatment for most causes of chronic back pain. Realize that some conditions can be worsened by exercise.
- If you have a condition that is treated with exercise, you should get instructions from a physical therapist who can teach you specific belly and back exercises and how to use exercise machines properly. Improper exercise can worsen your condition.
- Start off with very low resistance, and stop immediately for the day if the pain worsens. The best indicator of damage from exercise is pain. Listen to your body.
- Try to exercise every day, and don't do anything that increases pain in the injured area.

◀ People who run or walk regularly have stronger and healthier spinal discs.

MADE TO MOVE

# Combat Diabetes and Boost Insulin Sensitivity Naturally

Mounting studies show the key role exercise—even short walks—plays in managing Type 2 diabetes

By Allison DeMajistre

A study published in the *Journal of the American College of Cardiology* reported that up to 40 percent of Americans will be at risk for developing Type 2 diabetes by 2060, and researchers are racing to find a way to slow its progression. Exercise can prevent, delay, and even reverse Type 2 diabetes. Recent research suggests that the type, timing, and frequency of exercise all play a vital role in optimal glucose control for Type 2 diabetics.

## Exercise and Blood Sugar Control

Diet is a significant factor in controlling blood glucose and insulin sensitivity, and growing evidence suggests that exercise may be even more critical.

A recent study published in *The American Journal of Medicine Open* (AJM Open) provides a comprehensive summary of the type and timing of exercise for controlling blood glucose and improving insulin sensitivity.

The study compared aerobic exercise, resistance exercise, and the combination of the two to determine how they affect insulin sensitivity, blood glucose levels, and overall cardiometabolic health. Researchers also evaluated how the intensity of exercise and the time of day when the activity is undertaken influence glucose control.

“The challenge with this is that most, if not all, people know exercise is good for them, but they don’t know the best approach,” study author Steven Malin, an associate professor in the Department of Kinesiology and Health at Rutgers School of Arts and Sciences, told Rutgers Today.

## Best Types of Exercise

Mr. Malin and his team analyzed several studies to summarize types of exercise and the best time to do them to improve blood glucose levels and insulin sensitivity. “I think of exercise as a drug,” he said.

## Aerobic Activity

Aerobic exercises such as walking, jogging, biking, and swimming use large muscle groups and usually increase heart and respiratory rates. Aerobic activity lowers blood glucose levels and increases insulin sensitivity using two pathways.

First, muscle cells use insulin in the bloodstream to take up glucose dur-

ing exercise. The same cells can also take in glucose without the help of insulin. By using both pathways, muscle cells remain sensitive to insulin for up to 48 hours.

Muscle cells also store more glucose inside the muscle for future use, leaving less traveling around in the blood, which is ultimately the goal. According to study researchers, participating in bouts of exercise favors insulin sensitivity and contributes to better aerobic fitness, thereby reducing cardiovascular disease and all-cause mortality in Type 2 diabetics, regardless of body weight.

**The challenge with this is that most, if not all, people know exercise is good for them, but they don’t know the best approach.**

Steven Malin, associate professor, department of kinesiology and health, Rutgers School of Arts and Sciences

Recommendations by the American Diabetes Association (ADA) include getting 150 minutes of moderate- to vigorous-intensity aerobic exercise per week, with no more than two consecutive days without physical activity. The ADA suggests the following ways to spread out the 150 minutes so the goal doesn’t seem unreachable:

- 50 minutes three times per week.
- 30 minutes five times per week.
- 25 minutes six times per week.

And that time can be split into sessions throughout the day of at least 10 minutes each since exercise sessions lasting 10 minutes or more benefit heart health the most.

The study also showed that exercise can improve overall gly-



▲ When they exercise, for how long, and how, can all significantly influence glucose control for Type 2 diabetics.

Exercise is better than the best drug available—and without the side effects.

cemic control. For instance, overweight individuals with an exercise routine of 45 to 60 minutes per session four times per week, working at 50 to 75 percent maximum effort for six months, reduced fasting blood glucose by 18.58 milligrams/deciliter and reduced insulin levels by 2.91 milliunits/liter compared with the group that didn’t exercise.

Researchers reviewed an epidemiological study that reported a 21 percent reduction in diabetes-related death after a 1 percent reduction in glycated hemoglobin (HbA1c or A1c).

The researchers also reviewed a meta-analysis that found that 1,003 people with Type 2 diabetes had an average drop in systolic blood pressure of 5.6 millimeter of mercury (mmHg), a decrease in diastolic blood pressure of 5.5 mmHg, and a 0.3 millimole/liter reduction in triglyceride level and total cholesterol after aerobic exercise training interventions.

## Resistance Training

Resistance training can augment aerobic exercise by providing variety and increasing adherence to an overall training regimen. It can also help combat low muscular strength and muscle mass decline, independent risk factors in Type 2 diabetes.

Resistance exercises involve the contraction of muscles with external weights or body weight. The American College of Sports Medicine (ACSM) guidelines suggest resistance or muscle-strengthening activities at a moderate to high intensity involving major muscle groups two to three days per week, but not on consecutive days. They should include 10 to 15 repetitions per set, with one to three sets per specific type of exercise.

According to the ACSM, resistance training in older adults with Type 2 diabetes resulted in a 10 to 15 percent improvement in strength, lean mass, blood pressure, blood lipid levels, bone mineral density, and insulin sensitivity. Resistance training also led to more significant reductions in A1c.

“The combination of aerobic exercise and weightlifting is likely better than either alone,” Mr. Malin said.

## Best Time to Exercise

Choosing the time of day and whether to exercise before or after a meal can significantly affect long-lasting blood glucose control and prevent spikes throughout the day.

Circadian rhythm has a substantial influence on glucose control. There are several physiological processes, such as glucose tolerance, circulating insulin, body temperature, and hormones, that scientists have started to

less sensitive, more glucose circulates in the blood, and prediabetes or Type 2 diabetes becomes imminent.

“In short, any movement is good, and more is generally better,” Mr. Malin said. “The combination of aerobic exercise and weightlifting is likely better than either alone. Exercise in the afternoon might work better than in the morning for glucose control, and exercise after a meal may help slightly more than before a meal.”

Overall, the type and timing of exercise are vital to glucose control. Still, the most important thing is to stay active, even if it’s breaking up long periods of sitting with walking around for five minutes. The more you move, the better glucose control you will have.

associate with glycemic control.

People with Type 2 diabetes tend to have a disrupted circadian rhythm since their insulin sensitivity is often better in the evening but worsens throughout sleep and into the morning, raising blood glucose by the time they wake up. Exercising at the right time of day could improve glucose control.

According to the AJM Open study, most research has found that exercise in the afternoon or evening may be better for glucose control and insulin sensitivity than the same activity done in the morning, though not all studies yielded the same results. Some research suggests that morning exercise is better for managing weight and keeping to an exercise routine, which could mean the best time to exercise may be outcome dependent.

However, a consensus statement from the ACSM concluded that exercising after a meal reduces glucose levels by attenuating acute glucose spikes, regardless of the exercise type or intensity. A duration of 45 minutes or more provides the most consistent benefits.

## Take Breaks From Sitting

Adults in the United States spend an average of eight hours per day being sedentary, which has become an independent risk factor for cardiovascular disease and Type 2 diabetes.

To offset the adverse effects of sitting, the AJM Open study suggests getting up and walking every 30 minutes, which can improve glucose and insulin sensitivity in people with Type 2 diabetes.

A recent study published in *iScience* found that a simple exercise coined the “soleus pushup” can lower post-meal blood glucose by up to 50 percent.

The soleus muscle runs from the back of the knee down the back of the shin bone to the heel. It’s used when walking and running and helps keep us from falling forward while standing. It’s built for endurance and doesn’t rely heavily on intramuscular glycogen, so it gets most of its fuel from glucose in the bloodstream.

The soleus pushup is done while sitting. According to the study, moving the muscle up and down yielded a 52 percent improvement in blood glucose and 60 percent less insulin requirement over three hours after a glucose drink.

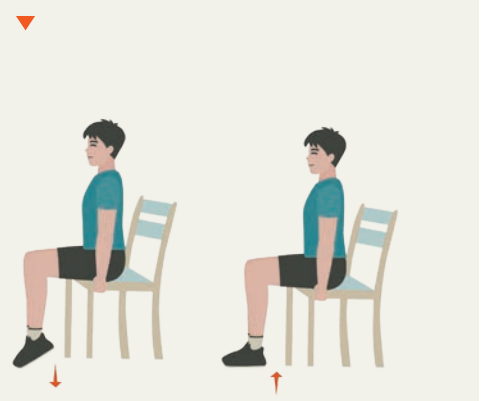
“The soleus’s lower-than-normal reliance on glycogen helps it work for hours effortlessly without fatiguing during this type of muscle activity because there is a definite limit to muscular endurance caused by glycogen depletion,” Marc Hamilton, professor of Health and Human Performance at the University of Houston and primary author of the study, told the University of Houston.

In a position statement, the ADA said that simply interrupting prolonged sitting with 15 minutes of walking after a meal and three minutes of light walking and light resistance activities every 30 minutes can improve glucose control.

Allison DeMajistre, BSN, RN, CCRN is a freelance medical writer for *The Epoch Times*. She is a registered nurse who previously worked in critical care. She specializes in cardiology-related topics.

## THE SOLEUS PUSHUP

Using the soleus muscle can quickly pull glucose out of the blood stream. Simply keep the front of your foot on the floor while you lift your heel up and down. You can do this at your desk after lunch.



APWORLD/SHUTTERSTOCK



▲ Physical touch can be calming and healing. It is also linked to higher levels of oxytocin, whose primary function is to promote social bonding and emotional connections.

CONNECTION

## The Therapeutic Effects of Touch

Gentle touch can ease loneliness, lower blood pressure, and reduce inflammation

By Vance Voetberg

Touching is far more than just a love language.

Emerging research finds that physical contact is a cornerstone for optimal health in body and mind. It triggers a cascade of biochemical reactions that reduce stress, boost immunity, and promote bonding.

## How It Helps the Body

Moderate physical touch such as hugging, patting on the back, and hand-holding has anti-inflammatory effects, according to a recent study in *The Journals of Gerontology: Series B*. It found that such physical contact is linked to lower blood pressure and heart rate.

In another study, the Tellington Touch—a gentle touching method initially developed for calming horses—was used on patients about to get a blood draw. Using this method reduced patients’ blood pressure and heart rate, showing that touch physically calms the body.

Moderate pressure touch stimulates pressure receptors under the skin that, in turn, slow the nervous system and the production of stress hormones (e.g., cortisol) and increase the release of serotonin, a neurotransmitter in the brain that could regulate pain sensation, Tiffany Field, who holds a doctorate in psychology and is the director of the Touch Research Institute at the University of Miami School of Medicine, told *The Epoch Times*. Lowering stress hormones promotes health in a number of ways, she added.

Everyday stressors such as screens, processed foods, electromagnetic fields, and toxins raise cortisol levels. Touch counteracts these modern burdens directly, according to Ms. Field.

## How It Helps the Mind

Physical touch has well-known mental health benefits, according to Dr. Gayle Myers, an internist specializing in integrative medicine. “Touch is profoundly calming and healing,” she told *The Epoch Times*.

Physical contact is also linked to higher oxytocin levels. Oxytocin, often called the “love hormone,” is a vital neurotransmitter whose primary function is to promote social bonding and emotional connections.

Recent research supports this. A study published in *Adaptive Human Behavior and Physiology* found that people experienced less loneliness and anxiety after physical touch. “This is a promising research avenue in terms of strategies to diminish loneliness and its negative impact on psychological and physiological well-being,” the authors wrote.

Another study looked at touch deprivation during the COVID-19 pandemic. Lack of touch was tied to more anxiety and loneliness. People who

craved touch the most were also affected the most. This reveals the vital role touch plays in managing distress.

The findings parallel what Dr. Myers sees in her clinical practice. “A compassionate touch reassures that everything will be OK and helps promote a brighter outlook,” she said. When deprived of touch, mental health suffers—in both givers and receivers.

## How It Shapes Child Development

Skin-to-skin contact is known to benefit newborns. But research shows that a parent’s touch is crucial for child development beyond infancy.

One 2020 study found that children who lack loving touch from their mothers are more prone to neurodevelopmental disabilities. This builds on earlier research showing that parental touch correlates with better stress management in kids.

Dr. Myers said she had seen the beneficial effects of loving, gentle touch in her practice. “I have treated infants with osteopathy in the cranial field who could not nurse and failed

to thrive,” she said. “Through gentle osteopathic touch, the babies rebounded.”

“One of my greatest joys in medicine has been seeing the child nurse, bond with their parents, flourish, and grow into healthy children,” she said.

## Touch Must Be Compassionate and Gentle

The benefits of physical touch are a two-way street, with the giver and the receiver gaining a sense of connection and community through the release of oxytocin, endorphins, and dopamine—and improved immunity, according to Dr. Myers. The touch, she said, must be loving, kind, compassionate, and gentle for health benefits. “If the contact is rough, uncaring, and mechanical, it can cause higher stress and anxiety levels.”

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



▲ Skin-to-skin contact is crucial for newborns, though research shows that a parent’s touch supports child development beyond infancy as well.

## BLOOD GLUCOSE AND INSULIN

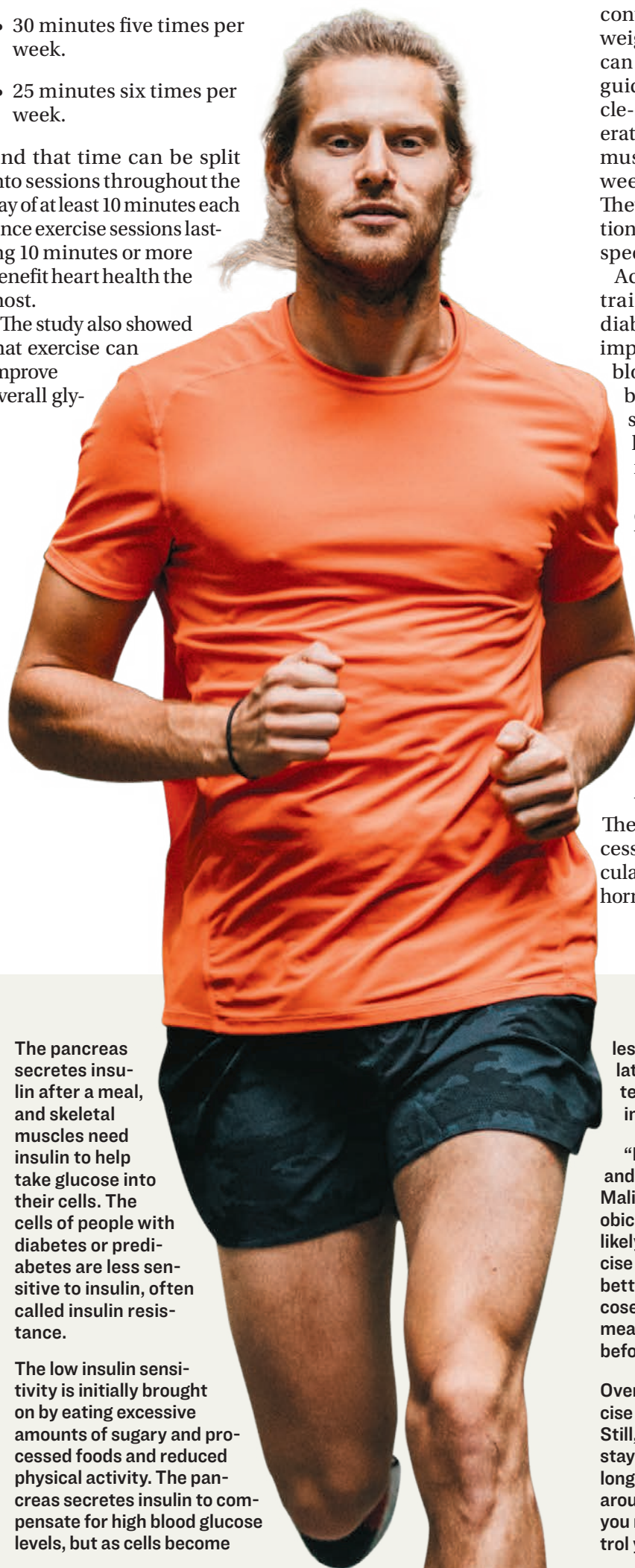
Better glucose control means less risk of complications caused by diabetes, including cardiovascular disease and peripheral nerve damage.

Glucose is fuel for the body, particularly the brain, and an adequate amount of glucose must constantly circulate in your bloodstream. When blood sugar is too low, the brain doesn’t have enough fuel and can become comatose; when it’s too high, it can damage our blood vessels.

A healthy body has many physiological processes to keep blood sugar within that tight range, and one of the most important is insulin.

The pancreas secretes insulin after a meal, and skeletal muscles need insulin to help take glucose into their cells. The cells of people with diabetes or prediabetes are less sensitive to insulin, often called insulin resistance.

The low insulin sensitivity is initially brought on by eating excessive amounts of sugary and processed foods and reduced physical activity. The pancreas secretes insulin to compensate for high blood glucose levels, but as cells become



FRESHPLASH/GETTY IMAGES

WISE HABITS

# 5 Ways to Reduce Your Stress Levels

These simple practices can transform your experience of daily life

By Leo Babauta

Stress is a part of life, and eliminating it is a fool's errand. If you ever succeeded in eliminating all stress, your life would be boring and you'd have removed yourself from anything meaningful.

That said, too much stress can be toxic. It can negatively affect our sleep, our health, our relationships, and our happiness. If your stress levels are high on a regular basis, it's like having a smoking habit—it will take its toll over time.

So how do we reduce stress levels to something manageable? I'm going to share some of the most important ways to shift stress in your life. They might not be new to you, but I strongly encourage you to view them as lifesavers and to commit to putting them into practice.

**If your stress levels are high on a regular basis, it's like having a smoking habit—it will take its toll over time.**

## 1. Relaxed State of Being

In each moment, we can be constricted and tight, or relaxed and open. Which are you right now? Can you breathe more deeply and allow yourself to relax and open?

This state of relaxed being is always available to us, but we have to recognize when we're in a constricted state—and take responsibility for bringing ourselves to



▲ Nature can soothe our minds, restore our spirits, and have a profound impact on our stress levels.

the open state. It's a practice, and the more that you consciously put yourself into this state, the easier it becomes.

Can you walk around more of the day in openness and this relaxed state of being?

## 2. Breathing Practice

When you're stressed and feeling in a constricted state, take a moment to breathe deeply into your belly. It can have an immediate and profound effect on your physiology and state of mind.

When we're constricted and stressed, our breathing is shallow. Few things can send us into a fight-or-flight state as quickly as a lack of oxygen. Deep breathing tells the deeper layers of our body, including our cells, that we're safe. It helps to move your nervous system into a more relaxed state.

If you tune into your body, you'll find that stress leads to shallow breathing. Your body feels threatened, even when it isn't. Deep breathing resolves this issue. Practice this five times a day (or more), and you'll see a



ALL PHOTOS BY SHUTTERSTOCK

▲ Deep breathing tells our body, including our cells, that we're safe and helps relax our nervous system.

essential and what's merely adding to your stress. Learn to say no to tasks that don't align with your priorities. Embrace the beauty of a simplified schedule, allowing space for spontaneity and relaxation.

Then practice doing one thing at a time—letting go of everything else that's calling for your attention. This single-tasking mode helps you to focus more and worry less.

## 4. Nurture through Nature

Nature has an innate ability to soothe our minds and restore our spirits. Spending time outdoors—walking or otherwise being active—each day can have a profound impact on our stress levels.

Disconnect from screens and immerse yourself in the natural world. Listen to the rustling of leaves, feel the warmth of the sun on your skin, and breathe in the fresh air.

huge difference in your stress levels.

## 3. Simplify and Prioritize

Our lives are filled with endless choices and commitments, and simplifying can be liberating.

Take a step back and evaluate your responsibilities. What truly matters? Can you reduce your commitments, put certain things on the back burner, or let them go completely so that you have less on your plate?

Find clarity between what's essential and what's merely adding to your stress. Learn to say no to tasks that don't align with your priorities. Embrace the beauty of a simplified schedule, allowing space for spontaneity and relaxation.

## 5. Awe and Gratitude Practice

While you're out in nature, open yourself to a sense of something bigger.

Stress levels are high when we're too focused on the disaster that we feel is in front of us, but when we're open to a sense of the wider world, it lets some of that stress melt away. When we practice awe at the world around us, it helps us to open up.

Likewise, when we remember what we have to be grateful for, we feel a sense of appreciation for life. Practicing gratitude and seeking the awe-inspiring experience of nature can change your life.

Remember, reducing stress isn't about eliminating challenges from your life, but about changing your relationship with them.

By integrating these practices into your day, you can build resilience and find beauty in the midst of chaos.

Start small, be patient with yourself, and allow these habits to gradually transform your experience. As you embrace mindful breathing, simplify your life, and reconnect with nature, you'll find that stress loses its grip, making way for a more serene and fulfilling existence.

Leo Babauta is the author of six books and the writer of *Zen Habits*, a blog with over 2 million subscribers. Visit [ZenHabits.net](http://ZenHabits.net)



▲ To relax ourselves, we must first recognize we're in a constricted state. Then we shift gears.

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