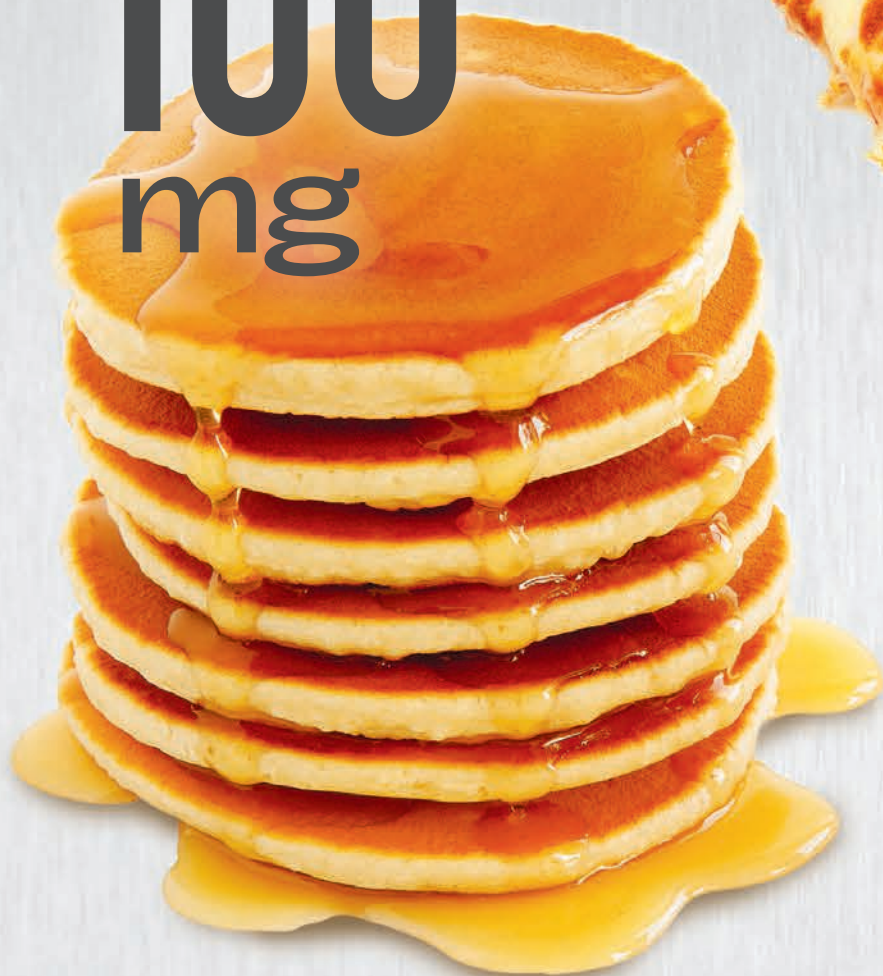


MIND & BODY

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180 mg



Researchers from the University of Kentucky found ready-to-eat pancakes had the most aluminum out of foods tested, with up to 180 mg per serving. It is mainly processed foods that use aluminum-based additives.



14 mg

The cheese on frozen pizzas can have as much as 14 mg of aluminum per serving in the form of sodium aluminum phosphate, an FDA-approved food additive used as a white colorant. The same amount of cheese in a restaurant pizza has only 0.03 to 0.09 mg of aluminum.

Aluminum is used in many products we eat, apply to our skin, or use as medicine.



? mg

Aluminum is a popular pigment used in cosmetics, like eye shadow. It is also used in products like deodorant. Unfortunately, aluminum can be absorbed through the skin, though we don't have data on how much enters the body.

AVOIDING THE TOXIC EFFECTS OF ALUMINUM

The metal accumulates in the body and brain with dangerous consequences, but there are things you can do

JACQUELYN WATERS

The human body is an electrochemical miracle. While we often think of it as a fleshy machine of sorts, it can be more likened to a constantly changing collection of chemicals and electrical signals that's continuously rebuilding itself and responding to your mental state, food, air intake, physical activity, and environment.

This biochemical landscape of the human body is in delicate balance. An unfathomable series of reactions transforms the molecules of the food you eat and the air you breathe into the components of your body and the energy that fuels it.

Aluminum upsets the ebb and flow of a number of key molecules

that play critical roles in balanced systems within the body, leading to serious health complications.

How are we exposed to aluminum? Is it really affecting our bodies? How can we protect ourselves?

Routes of Aluminum Exposure

Aluminum is the most abundant metal in the crust of the Earth. It has beneficial properties important to many industries.

Aluminum weighs much less than steel, and it's easily machined, durable, and resistant to corrosion. It can conduct electricity well and can be recycled many times over. The aluminum industry is massive and growing.

Continued on Page 4



JKA/SHUTTERSTOCK

Milk Thistle for Liver Health

The most well-researched plant for liver disease has a wide range of other therapeutic effects

EMMA SUTTIE

Milk thistle, with its distinctive purple flowers and long, thorny leaves, has long been touted for its liver health benefits and detoxing prowess.

Milk thistle and its healing properties were first described by the Greek physician Dioscorides in A.D. 40. Dioscorides was a physician, pharmacologist, botanist, and the author of *De Materia Medica*, a five-volume Greek encyclopedia describing herbal medicines that was the leading

pharmacological text for 16 centuries. He was employed as a physician and surgeon in the armies of Roman emperor Nero, which gave him the opportunity to travel extensively, studying the features, distribution, and medicinal properties of many plants and minerals.

Also known as *silybum marianum*, milk thistle is native to the Mediterranean region and is part of the daisy, or Asteraceae family.

Continued on Page 2

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Milk Thistle for Liver Health

The most well-researched plant for liver disease has a wide range of other therapeutic effects

Continued from Page 1

Milk thistle is found in the Eastern United States and California, South America, Africa, Australia, and Asia.

Milk thistle plants are able to grow up to 10 feet, with broad leaves with distinctive milky white veins. Some cultures believe the veins originated from a falling drop of the milk of the Virgin Mary, which is why it's sometimes referred to as Our Lady's thistle, blessed milk thistle, St. Mary's Thistle, Holy thistle, Virgin thistle, and Christ's crown.

Milk thistles are hardy plants and like to grow in dry, rocky soil, preferring full sun or slight shade. Milk thistle produces purple flower heads that bloom from June to August in the Northern Hemisphere or from December to February in the Southern Hemisphere.

Milk Thistle's Medicinal Properties

For more than 2,000 years, milk thistle has been used as a liver tonic and to treat other liver diseases, such as jaundice, cirrhosis, hepatitis, and poisoning, as well as to cleanse the liver from alcohol and drug addiction. Milk thistle also stimulates the appetite, treats psoriasis, and is used by nursing mothers to increase milk production and lactation.

The medicinal properties of milk thistle come from the seeds inside the fruits which contain a bioflavonoid complex called silymarin consisting of silybin (also spelled 'silibinin'), silydianin, and silychristin.

Liver Health and Detox

"Silybum marianum or milk thistle (MT) is the most well-researched plant in the treatment of liver disease," reads a research review published in Phytotherapy Research in 2010.

Milk thistle cleanses the liver of toxins,

is used for overeating or overindulging in recreational drugs or alcohol, treats jaundice and cirrhosis, and has a protective effect on the liver, helping it to regenerate healthy liver cells after damage.

"Silymarin has been used to treat alcoholic liver disease, acute and chronic viral hepatitis, and toxin-induced liver diseases," the review reads.

Because milk thistle is used to increase the secretion and flow of bile from the liver and gallbladder, it can be used for all problems involving the gallbladder, including the prevention and treatment of gallstones.

Milk thistle has been shown to stabilize blood sugar levels and help with Type 2 diabetes, and may offer a more natural solution for those struggling with the disease.

An Antidote to Poisoning

Milk thistle has been used to counteract many poisons for as long as 2,000 years, when early physicians used it to treat snake bites and other poisonings. In modern times, milk thistle has been used successfully against poisoning from death-cap mushrooms, an increasing problem in the United States since their accidental introduction from Europe.

Death-caps can be fatal, and medical treatment is essential within 72 hours of ingestion. Death-cap poisoning can cause acute liver failure, with one cap

containing enough poison to kill a human being. Having milk thistle in your garden or yard is an excellent way to keep you and your family safe from accidental poisoning from various sources.

Cancer Protection

Milk thistle is also showing promise in the fight against cancer. A study in the World Journal of Gastroenterology shows that the primary bioactive compound found in milk thistle, silibinin, could suppress the growth of cancerous liver cells. The study shows that silibinin significantly reduced the development of several human hepatoma cell lines. They were also able to demonstrate that silibinin mediates anti-cancer liver effects by:

- reducing cancer cell proliferation and cell cycle progression.
- enhancing programmed death of cancer cells.
- altering the chromatin structure of the cancer cells.

This study indicates that silibinin could be used to prevent the development of liver cancer, which is one of the most common cancers worldwide.

Milk thistle has also been shown to stop the inflammatory chain known to promote the progression of lung cancer, a study published in Molecular Carcinogenesis found. Researchers found that tumor growth is halted when this chain is broken and metastatic growth stops. Silibinin from milk thistle was shown to break these inflammatory chain reactions. The study's authors concluded that naturally-derived products such as silibinin may be as effective as today's best treatments for lung cancer.

Boosts Milk Production for Breastfeeding Mothers

As a galactagogue (lactation inducer), milk thistle has long been known to help nursing mothers produce more milk for their babies. Galactagogues increase the flow of mother's milk. A study shows that women treated orally with milk thistle's famed bioflavonoid complex—silymarin—saw an 85.94 percent increase in daily milk production. No negative effects were reported, and it was very well tolerated by all the participants.

Milk thistle isn't great for bouquets but it has a noteworthy list of medicinal uses.



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Helps Diabetes

According to the Centers for Disease Control and Prevention (CDC), approximately 37 million people in the United States have diabetes, which is more than 11 percent of the population. Thankfully, milk thistle has been shown to stabilize blood sugar levels and help with Type 2 diabetes, and it may offer a more natural solution for those struggling with the disease.

Clinical studies have demonstrated that the high antioxidant levels in milk thistle help decrease blood sugar levels in people with insulin resistance.

A study published in the Journal of Diabetes Research found that the antioxidant and anti-inflammatory properties of the silymarin from milk thistle drastically reduced fasting glucose levels in diabetic participants.

Another study from the Institute of Medicinal Plants found that diabetic patients given silymarin extract over a four-month period showed significantly improved fasting blood sugar and insulin levels compared to patients who received a placebo.

Diabetes is the body's inability to either produce (Type 1) or respond to (Type 2) the hormone insulin, which results in too much sugar in the blood and urine. Because the liver plays a role in metabolizing hormones and releasing insulin into the bloodstream, milk thistle is likely helpful because of its healing and protective effects on the liver.

Milk Thistle in Chinese Medicine

In Chinese medicine, milk thistle is known as the herb da ji or shui fei ji (milk thistle seeds). Milk thistle works specifically on the liver, heart, and spleen and is considered bitter, cooling, and drying. Its actions are to remove stagnation (blockages), stop bleeding, stimulate qi (energy), benefit the skin, heal wounds, reduce swelling, promote urination, and strengthen the liver.

It's milk thistle seeds that are used for their medicinal benefits. Da ji is available in capsule form and extracts, and tinctures can be found at many health food stores. If you can harvest milk thistle seeds from wildflowers, they can be ground and added to food or made into tea.

Risks and Side Effects

Milk thistle is generally considered very safe to use and has very few cases of reported side effects. That said, always use caution if you have any health conditions, are on medications, or have seasonal allergies, especially to any plants in the daisy or Asteraceae family. If you would like to begin taking milk thistle—or any other supplement—always start with smaller doses to see how you tolerate it, then increase the dosage slowly, paying close attention to any reactions. If any occur, discontinue use and consult with a health care practitioner.

Possible Drug Interactions

Certain medications have been known to interact with milk thistle, including allergy medications, blood thinners, and anti-anxiety drugs. Silymarin has also been shown to lower blood sugar. Although it has been proven helpful for diabetic patients, always consult your physician before taking milk thistle if you have diabetes or are on diabetes medications. As a general rule, you should consult with a health care practitioner before taking supplements if you're on any medication.

Final Thoughts

In recent years, the popularity of milk thistle has increased, perhaps because of the public's desire for more natural approaches to chronic diseases and the popularity of liver detoxing. In fact, a report has projected that the 10-year forecast for milk thistle supplements is estimated to be worth \$204 million by 2032.

With milk thistle's massive list of medicinal benefits and the public's growing mistrust of Western drugs and treatments, it seems prudent to look to nature—where a large percentage of pharmaceutical drugs originate—to fulfill as many of our health needs as possible. Milk thistle is easily grown in most locations with ample sunlight, and harvesting its seeds can help with many health problems we now face in the modern world.

Because a healthy, well-functioning liver is vital to so many of the body's processes, milk thistle—with its liver-cleansing, detoxifying, and protective effects—seems like an excellent thing to have growing in your garden.

Emma Suttie is an acupuncture physician and founder of Chinese Medicine Living—a website dedicated to sharing how to use traditional wisdom to live a healthy lifestyle in the modern world. She's a lover of the natural world, martial arts, and a good cup of tea.



In recent years, the popularity of milk thistle has increased, perhaps due to the public's desire for more natural approaches to chronic diseases and the popularity of liver detoxing.



Brewing a tea from milk thistle seeds is one of many ways to extract the herb's health benefits.

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Stories of Life-Threatening Heart Conditions

3 stories can teach us some important lessons about how to deal with urgent cases of heart disease

JOE D. HAINES JR

Everyone in the United States has likely experienced heart disease, either personally or through a friend or family member. Approximately 659,000 individuals per year die from heart disease, and more than 800,000 suffer heart attacks, according to the Centers for Disease Control and Prevention. It's a disease that requires constant diligence because of its prevalence.

After 40 years as an emergency room, urgent care, and family doctor, I know that diagnosing heart disease is fraught with danger. If you write off cardiac pain as chest wall pain, for example, you might cost a patient his life. Complacency is the greatest enemy for a practicing physician.

As a young doctor, I enjoyed moonlighting in emergency rooms, usually at night after I had worked in my office during the day. The ER was great training, and I believe it made me a much better family doctor. It was exciting, stimulating, and even fun to face the many challenges.

One of the best ways to teach the fundamentals of heart disease is through anecdotes. Anecdotes won't usually get someone published in a medical journal, but they serve a useful purpose. I've selected three cases representative of heart disease. While all three happen to be male, heart disease is also the No. 1 cause of death for females. It can be much more difficult to diagnose cardiac disease in women because of an absence of the "classic" symptoms of heart disease.

The three patients I've chosen include Bob, a 54-year-old aircraft mechanic; Mr. Graham, a 70-year-old cowboy; and Ray, a 57-year-old man whose case wound up in a malpractice trial.

Bob

Occasionally, my private practice and the ER would intersect. One evening when I was working the ER, Bob showed up with a worried look on his face as he clutched his chest. I immediately grabbed his chart and began questioning him and his wife. He had been in good health, with only a mild elevation of his blood pressure that was well-controlled with medication. I inquired if he had been doing anything unusual that might have brought on his chest discomfort.

"Yeah, Doc," he said. "I was helping my neighbor push a car when this tearing sensation started in my chest. Oh, and we were pushing the car uphill."

Seasoned physicians all agree that it's the history provided by the patient that's the most important part of the encounter. I needed to go no further with an exam, lab, or x-ray. The diagnosis was readily apparent. Bob described his chest pain as radiating to his upper back. His vital signs were normal; however, his skin was pale and clammy. I ordered a stat CT scan of the chest and anxiously awaited the results.

When the CT results finally appeared, I was stunned with the "NORMAL EXAM" written across the form. It couldn't be possible. I returned to the bedside where Bob looked the same; still unable to find a comfortable position and in obvious distress. Refusing to accept the radiologist's report, I pondered my next move.

I just happened to see a cardiovascular surgeon friend of mine passing through the ER. I presented Bob's case to him, and he agreed that Bob's story and the CT results didn't match. He suggested a transthoracic echocardiogram. Another colleague, a cardiologist, also just happened to be in the ER, and he agreed to do the test immediately. And there it was; Bob had an enormous

dissecting aneurysm of the aorta, the largest artery in the human body.

Cardiovascular surgery whisked him off to the operating room, where the aneurysm was successfully repaired. Bob was one of the lucky 50 percent to survive this risky surgery.

I went to the radiology department to question the radiologist who misread Bob's CT scan. He said all he could figure was that the aneurysm was so big that he couldn't see it.

I'm not throwing stones; radiologists have saved my butt numerous times. Bob's chest discomfort was dramatic, with an inciting event that was significant (pushing a car uphill). But as I alluded to earlier, in women, symptoms often aren't described as "an elephant sitting on my chest." A female may experience only vague chest discomfort and little to none of the associated symptoms. Most women won't give you a history of tearing chest pain after pushing a car uphill. Thus, the index of suspicion for heart disease must always be greater in females.

Mr. Graham

Our second patient was Mr. Graham, an old rancher in his mid to late 70s who had been drinking coffee and smoking a cigarette at the Top Rail Café, conveniently located across the highway from my clinic. Mr. Graham didn't bother much with medical care; his philosophy was if it ain't broke, don't fix it.

While working on his second cup of coffee, Mr. Graham noticed that his "indigestion" was worse than normal. He walked across the highway to my office and asked if we had anything for indigestion. My nurse observed that he appeared pale, diaphoretic (sweaty), and a bit unsteady on his feet. She whisked him back to the treatment area where a quick set of vital signs looked worrisome. His blood pressure was low, and his heart rate was very rapid; not a good combination. His exam was largely normal, except for his abdomen, which revealed a large pulsating mass.

I was sure that Mr. Graham had a large "Triple A," which stands for abdominal aortic aneurysm.

An aneurysm is an abnormal ballooning of the aorta that often ruptures as it enlarges. With his abnormal vital signs, the aneurysm was likely leaking, which made his condition a true emergency. I called for a helicopter, and

Mr. Graham was transported to the hospital in a matter of minutes.

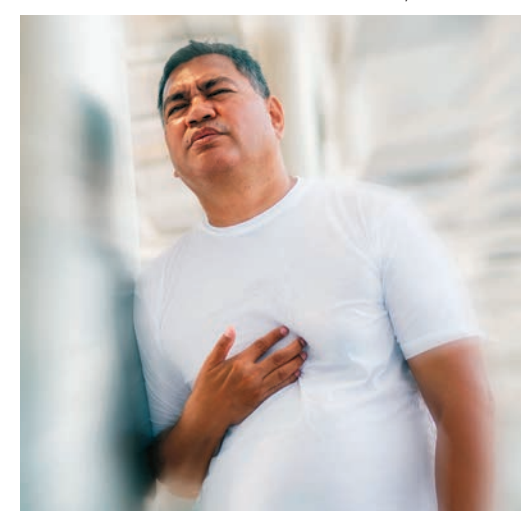
At departure, he still had blood pressure and pulse. He had needed surgery at least a couple of hours prior, so I knew his chances weren't good. He was transported to the operating room minutes after arrival, but died on the operating table.

A routine screening test, an ultrasound of the aorta, could have saved Mr. Graham's life. Guidelines recommend that male smokers between ages 65 and 75 have this test performed at least once. If a small aneurysm is detected, then it's monitored until it's greater than 5.5 centimeters. Once the aneurysm begins leaking or it ruptures, the outcome is very poor.

Complacency is the greatest enemy for the practicing physician.

Ray

In my part-time career as a medical expert witness over the past 25 years, I've reviewed dozens of cases of missed heart attacks. Nearly every case was straight forward with nothing tricky involved in the diagnosis. A recent case that I reviewed involved Ray, a 58-year-old man who had developed some



Heart disease is the biggest killer in America and when it gets serious, urgent action is essential if you are going to survive.

pain in his upper chest and neck associated with exertion for approximately two weeks.

Since he had an appointment for a recheck with his primary doctor already set up, he decided to wait and discuss his symptoms with his doctor. He told his doctor that for two weeks he had chest pain with exertion that was relieved with rest. He claimed to have no previous cardiac history. Unfortunately, Ray was sent home with presumed musculoskeletal pain. He died two days later of a massive heart attack.

When he was later questioned in a deposition, Ray's doctor focused on the fact that Ray's appointment was for a routine recheck, not chest pain or any other new problem. He also made a point of emphasizing that Ray's pain was really more in the neck than the chest. It was a simple matter for me to defeat the doctor's ridiculous attempted defense of his negligence. It didn't matter that Ray had an appointment for a routine recheck; the chest pain complaint trumped everything else. All routine maintenance care should have immediately been put on the back burner, while coronary artery disease was placed front and center.

Ray's doctor also attempted to blame the chest pain on hypertension, which is largely asymptomatic. Chest wall pain (musculoskeletal) should be diagnosed only after cardiac pain has been ruled out. The fact that heart disease remains the No. 1 killer tells us that we've got much work ahead.

Preventing Heart Disease

What can one do to prevent heart disease? The old standbys of a good diet and regular exercise are a good start. When it comes to exercise, there's no need to train as though you're going to run a marathon. The latest recommendation is 7,000 steps per day.

Regarding diet, Americans have one of the worst on the planet. It's woefully deficient in essential nutrients and loaded with unhealthy processed foods. Three of my grandparents lived to be nearly 100, and their diet was far superior to mine. They ate out of their gardens most of the year and canned vegetables for use during the winter months. Pesticides and GMOs were never used or didn't exist.

Big Pharma got into the heart disease prevention business when they discovered that a drug can lower cholesterol. The public was

convinced that their cholesterol and other lipid levels had to be tightly managed. It even reached the point that terminally ill patients were taking statins, the most common cholesterol-lowering agents.

A common complaint with statins is muscle pain and fatigue, which can be significant in the elderly. There are also reports that statins increase the risk of diabetes.

So in our three case studies of men with cardiovascular disease, what have we learned. In Bob's case ("normal" chest CT), we learned to not give up despite tests that don't agree with our better judgment. Also, don't push cars uphill.

In Mr. Graham's case, a screening ultrasound of the abdominal aorta between ages 65 and 75 could have been a lifesaver. He was at especially high risk as a male smoker.

And finally, in Ray's case, he had an incompetent doctor whose mistake cost him his life. Sometimes a second opinion is the best consult you can get.

Never ignore the urgent classic signs and symptoms of heart disease (even if your doctor does), including the following:

1. Chest pain or discomfort, often described as pressure-like or heaviness
2. Radiation of chest pain to the neck, jaw, arms, and back
3. Nausea or vomiting
4. Diaphoresis (sweaty)
5. Dyspnea
6. Fatigue
7. Dizziness
8. Rapid heart rate

Take yourself to a reputable emergency room for an evaluation if you have any combination of the above.

Dr. Joe D. Haines Jr. is a board-certified family practitioner. In addition to family medicine, he also completed an aerospace medicine residency and received a Master of Public Health degree while serving in the U.S. Navy. Haines has practiced medicine for 40 years and remains active with medical expert witness work and writing. He's a veteran of the Afghanistan War, serving as the wing surgeon for the Marine Corps in 2011. He has more than 200 publications in a wide variety of journals.

AVOIDING THE TOXIC EFFECTS OF ALUMINUM

The metal accumulates in the body and brain with dangerous consequences, but there are things you can do

One of the most abundant metals on earth, aluminum has become an essential part of our lives, and unfortunately has found its way into our bodies at toxic concentrations.



Continued from Page 1

And while individuals involved in aluminum processing often experience increased exposure to aluminum, particularly if they make aluminum powder, the metal has found its way far beyond industrial uses. It's now found in everything from cosmetics to food.

Aluminum in Food

For most individuals, food is a main source of aluminum exposure and may contribute to as much as 95 percent of aluminum concentration in the body, according to a research review article published in the French journal *Médecine et Maladies Infectieuses*.

Many fruits and vegetables naturally contain small amounts of aluminum. Of bigger concern are processed foods that include aluminum as an approved food additive.

Salim Saiyed and Robert Yokel of the University of Kentucky used spectrometry to quantify the amount of aluminum in some commonly eaten processed foods. They found that the aluminum content in the foods they tested ranged from 1 to 27,000 milligrams of aluminum per kilogram of food.

Their study, "Aluminium Content of Some Foods and Food Products in the USA, With Aluminium Food Additives," was published in the journal *Food Additives & Contaminants* in 2005. Aluminium is the British spelling of aluminum.

In the study, cheese tested from frozen pizzas had as much as 14 mg of aluminum per serving. The aluminum came from sodium aluminum phosphate, an FDA-approved food additive. The same amount of cheese in a restaurant pizza had less than 1 mg of aluminum.

Saiyed and Yokel found that sodium aluminum phosphate was present in many food products. Baking powder, ready-to-eat pancakes, and several pancake and waffle mixes had the most aluminum out of all the foods tested. Some of these foods had up to 180 mg of aluminum per serving.

The researchers note that in many other countries, aluminum intake through dietary consumption does not typically exceed 12 mg per day. Americans who are consuming processed foods are likely ingesting much more aluminum than this.



Zeolites are naturally occurring and synthetic chelators. They are porous with numerous cavities and molecular channels. These qualities let zeolites absorb aluminum and heavy metals and draw them out of the body.



Eating plenty of leafy greens is one way to help detox the body of heavy metals and aluminum.

Aluminum in Water

Aluminum is not just in processed food; it can leach from soil and rock into water sources. In fact, aluminum's prevalence in the Earth's crust means it's found in all natural waters.

But beyond naturally occurring sources, aluminum sulfate is often used in water treatment plants as a coagulant. If the coagulation process doesn't proceed properly, aluminum concentrations in tap water may be elevated, notes a 2020 research article on residual aluminum in drinking water and its effects, published in the journal *Molecules*.

Low molecular weight polyaluminum species left over in the water are chemically reactive and may be more easily absorbed into the human body. Treating water with aluminum sulfate is known to increase the amount of these low molecular weight species, notes a 2019 research review published in *Chemosphere*.

Other Sources of Aluminum

It's well-known that antiperspirants contain aluminum. The metal is also found in cosmetic, hygiene, and hair products. Sunscreen frequently contains aluminum, as it prevents titanium dioxide particles from clumping.

Certain antacids, such as Maalox, contain aluminum hydroxide. Long-term use of these contributes to an increased aluminum load in the body.

Aluminum hydroxide is also used as a dye in the coating of some buffered aspirins. The dye FD&C yellow #6 aluminum lake is one example.

In the medical industry, injectable preparations may contain aluminum. Parenteral nutrition solutions are used to provide nutrition to patients who cannot efficiently absorb nutrients through their small intestine.

FDA regulation 201.323 limits the amount of aluminum allowed in these products, stating that it may not exceed 25 micrograms of aluminum per liter.

The regulation requires that a warning be inserted in all these products that includes the following: "Research indicates that patients with impaired kidney function, including premature neonates, who receive parenteral levels of aluminum at greater than 4 to 5 [micro]g/kg/day accumulate aluminum at levels associated with central

nervous system and bone toxicity. Tissue loading may occur at even lower rates of administration."

This means that for a premature baby, a toxic dose of aluminum would be approximately 8 to 28 mcg.

The Recombivax HB (hepatitis B vaccine), given to newborns, contains 250 mcg of aluminum adjuvant, according to the National Institutes of Health.

If a premature baby cannot tolerate more than 28 mcg of aluminum at most, can we assume all full-term newborn babies will be able to handle a 250 mcg aluminum load without adverse effects?

In addition to the hepatitis B vaccine, other vaccines that contain aluminum include the DTaP (diphtheria, tetanus, and acellular pertussis) vaccine, some influenza vaccines, pneumococcal conjugate vaccine, Tdap (tetanus, diphtheria, and pertussis) vaccine, hepatitis A vaccine, and Gardasil's HPV (human papillomavirus) vaccine.

Where Does Absorbed Aluminum Go?

After it's absorbed, aluminum is distributed widely to various tissues. Some of the aluminum is excreted in the urine, so long as the individual doesn't have kidney disease. The aluminum that isn't excreted accumulates in the bones, liver, lungs, and brain, according to the *Médecine et Maladies Infectieuses* review.

Accumulation of Aluminum in Bones

Most of the aluminum that gets absorbed binds to the transport protein transferrin, notes a case report published in the *Journal of Pediatric Gastroenterology and Nutrition*.

Transferrin is created by the body to bind iron and carry it throughout the body. Iron is particularly important in bone homeostasis.

While the transferrin would typically transfer iron to bone, the presence of absorbed aluminum causes the protein to transfer aluminum instead. It's well-documented that aluminum accumulates in the bone tissue of those with chronic kidney disease and in patients receiving long-term parenteral nutrition due to intestinal issues.

Your bones are constantly breaking down old bone material and creating new bone material. The specialized cells that build new bone are called osteoblasts. These cells create collagen and other proteins, then mineralize the surrounding matrix to form new bone.

In bone growth, the area being constructed has a face called the mineralization

Common Sources of Aluminum Intake in the body

MEDICATIONS

Many vaccines and medications such as antacids contain aluminum hydroxide.



PROCESSED FOODS

Sodium aluminum phosphate, an FDA-approved food additive, is found in many processed foods and baked goods.

WATER SUPPLY

Aluminum sulfate is often used in water treatment plants as a coagulant. If the coagulation process doesn't proceed properly, aluminum concentrations in tap water may be elevated.



COSMETICS

Alumina and aluminum hydroxide are added to many cosmetics and function as pigments and thickening agents.

front. At this front, osteoblasts lay down new collagen fibers and calcium is accumulated there.

In aluminum-based bone pathogenesis, aluminum preferentially binds to the unmineralized collagen. The result is impaired bone mineralization and a condition of weakened bone tissue, called osteomalacia.

Another way aluminum toxicity affects bone health is by decreasing the activity of 5-hydroxyvitamin D-1 alpha hydroxylase, a finding dating back to at least 1985. This enzyme is produced by the kidneys and converts 25-hydroxyvitamin D into a more potent metabolite called 1,25-dihydroxyvitamin D (calcitriol), which we know as vitamin D.

Vitamin D facilitates the absorption of calcium from the intestine into the bloodstream. More pronounced vitamin D deficiency can result in hypocalcemia. The result may be a loss of bone density, leading to osteoporosis. Bones may become weak and brittle enough that they break easily.

Accumulation of Aluminum in the Brain

While aluminum accumulation in the bones is concerning, what is more alarming is aluminum accumulation in the brain. Post-mortem studies have found the presence of aluminum in the brains of deceased individuals.

When aluminum-bound transferrin reaches the blood-brain barrier, it binds to transferrin receptors. These aluminum-transferrin receptor complexes are then brought into cells associated with the blood-brain barrier.

Once in the brain, clearance is minimal without chelation therapy, the *Médecine et*

Maladies Infectieuses study notes.

There's no known biological role for aluminum in the brain. It's not part of normal brain biochemistry. Instead, aluminum is highly disruptive to a large number of metabolic pathways in the brain. Decades of research reveal that aluminum is neurotoxic. What is unclear is how much aluminum is too much. For example, is the concentration of aluminum in the brains of individuals with Alzheimer's disease, multiple sclerosis, or autism spectrum disorder higher than in individuals who don't have any of these conditions?

Researchers Christopher Exley at Keele University in the UK and Elizabeth Clarkston at Wichita State University in Kansas sought to answer this question in their study "Aluminium in Human Brain Tissue From Donors Without Neurodegenerative Disease," published in the *Journal of Scientific Reports* in 2020.

The analysis included 191 tissue samples from 20 control brains. The control donors had no diagnosis of neurodegenerative disease.

Exley and Clarkston compared the control data to samples of brain tissue from donors who had a diagnosis of Alzheimer's disease (12 patients), multiple sclerosis (14 patients), and autism spectrum disorder (five patients).

Notably, all three disease groups had significantly higher brain content of aluminum. This held true for any statistical analysis that was applied.

Further, all the studied disease groups had the "characteristics of significant focal deposits of aluminium throughout all main lobes of the brain and associated neuropathology and neurodegeneration," the researchers wrote.

Interestingly, increased aluminum content was not associated with increased age. These data suggest that perhaps aluminum accumulation in the brain is not an inevitable part of aging.

While the study doesn't give the mechanism of toxicity, it implicates aluminum in these particular neurodegenerative diseases.

In vitro cell studies reveal the mechanisms by which aluminum disrupts the delicate metabolic pathways in the human body. Researchers are also able to reproduce several neuropathologies of human neurodegenerative disease in animal models by exposing them to aluminum.

All of these studies give us a bigger picture of the role aluminum plays in brain pathology. The current data on the molecular dysregulation of healthy cells by aluminum toxicity are vast.

To summarize numerous research studies, aluminum exerts its toxic effects through mitochondrial dysfunction, and inflammatory, prooxidant, and proapoptotic pathways. These pathways have been reported in a number of tissues and cell lines.

One recent study by scientists at the Zhejiang Provincial Center for Disease Control and Prevention demonstrates a significant association between exposure to aluminum and lower cognitive function.

Protecting Yourself From Aluminum Toxicity

Exposure to aluminum is unavoidable, but there are ways to protect yourself from the toxic effects.

First, certain trace elements are protective. Studies published in the *Journal of Alzheimer's Disease* (2013) and the *Journal of Trace Elements in Medicine and Biology* (2014) demonstrate that the adverse neurological effects of aluminum may be prevented by consuming more silicon. Silicon forms aluminosilicate in the body, thus decreasing the amount of free aluminum available to damage cells.

Silicon occurs naturally in the form of silica, which is a transparent compound found in many rocks and in water. Certain water sources have higher amounts of silica than others. For instance, water obtained from artesian wells in Fiji (bottled by Fiji Water) has a significant amount of silica. Unfortunately, many other kinds of bottled drinking water, such as Aquafina, are produced using reverse osmosis, which removes naturally occurring silica.

Selenium, another trace element that helps to protect against aluminum neurotoxicity, is a component of glutathione

peroxidase, one of the most important antioxidants produced by the body.

Glutathione is biologically effective when it's in its reduced form. The enzyme glutathione reductase is essential for replenishing the reduced form of glutathione in cells.

In one study, rats treated with aluminum chloride showed a decrease in glutathione reductase activity and a decrease in reduced glutathione levels. Treatment with selenium markedly reversed these biochemical changes and improved brain morphology. The researchers involved in the study, published in *Biological Trace Element Research* in 2015, stated that their findings bolster the hypothesis that selenium is useful in combating the oxidative stress caused by aluminum in the brain.

In another study, researchers exposed mice to aluminum, then fed a cohort of them yeast with a high selenium content. The mice were then assessed for inflammatory biomarkers and pathology. The data, published in *BioMetals* in 2018, demonstrate that high selenium ingestion decreases aluminum-induced cerebral inflammation.

A third trace element shown to ameliorate the negative effects of aluminum in the brain is zinc. In a study using rats published in *BioMetals* in 2015, zinc supplementation was found to increase reduced glutathione levels and reverse aluminum-induced neurodegeneration.

These same researchers found that zinc has an antiapoptotic effect (prevents cell death) in aluminum-exposed animals.

In addition to these trace elements, eating a diet high in polyphenols helps to protect you against the toxic effects of aluminum. Polyphenols are antioxidants that can be found in fruits, vegetables, and whole grains.

Finally, chelation therapy, which uses special supplements and drugs to bind metals in your body and remove them through excretion, can help to protect you.

Ethylenediamine tetraacetic acid (EDTA), a synthetic solution used in chelation therapy, has been shown to be effective in decreasing aluminum neurotoxicity, according to a study published in the *Journal of Inorganic Biochemistry* in 2015.

Zeolites, also used as chelators, are porous minerals with numerous cavities and molecular channels. In nature, these cavities are filled with positively charged ions, such as sodium, magnesium, and calcium.

Zeolites are known for their excellent ion exchange properties—the zeolite can release the sodium, magnesium, and calcium, and take in metal cations (positively charged ions or a group of ions) such as aluminum. The metals settle in the zeolite cavities, and the zeolites pass easily through the kidneys, allowing the metals to be excreted out of the body.

The main zeolite used for medicinal purposes is a natural zeolite called clinoptilolite.

Natural and synthetic zeolites do a good job of removing heavy metals in vitro, and clinoptilolite supplementation is associated with a decreased concentration of aluminum in blood plasma, bones, and liver in animals exposed to aluminum, according to research published in *Microporous and Mesoporous Materials* in 2017.

While we can't completely avoid aluminum, eating foods that are not highly processed is one powerful way to protect yourself from aluminum overload. Another way to protect yourself is to eat a diet high in fruits and vegetables. Supplement with selenium and zinc, and drink some Fiji water each week. Read the labels on your lotions, sunscreens, and other personal care products. Avoid antiperspirants with aluminum. Finally, consider working with your doctor to find a quality EDTA or clinoptilolite product and complete a chelation regimen.

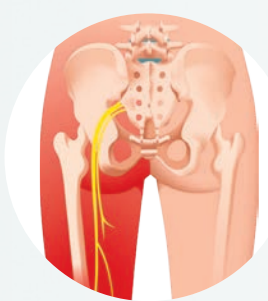
Jacquelyn Waters writes about health, science, and medicine. She has particular interest in all things neuroscience—from molecular neuroscience to psychology. She has 8 years of experience teaching college biology and received her master's degree in biomedical sciences with a specialization in neuroscience from Vanderbilt University.



Clearing the body of aluminum can help prevent or lessen the effects of neurological disorders such as Alzheimer's.

How I Healed My Sciatica

Sciatica is often caused by lifestyle and can be treated in the same way



The sciatic nerve may become pinched, compressed, or inflamed.

SANDRA CESCA

We are a sedentary society, especially as we age. The older we get, the more challenging it can be to keep from sitting too much. Our bodies may ache, our legs may be unsteady, our energy is less, and we don't exercise as often.

The pandemic even exacerbated this trend with having to stay isolated and mostly indoors watching TV, working on the computer, reading, reclining on the couch eating foods not supportive of our health.

According to the American Chiropractic Association, back pain is the third most common reason people visit their health care provider. And the Cleveland Clinic reports that about 40 percent of people in the United States experience sciatica sometime during their lifetime.

Although sciatica can be due to sudden injury, a herniated disc, or arthritis, the most common causes are improper sitting, lack of exercise, or unbalanced movements. Knowing the risks and self-care treatments available can go a long way to keeping you free of this painful condition.

What Is Sciatica

If you suffer from sciatica, you know how incapacitating it can be. If you haven't experienced this, read on and you may learn how to avoid developing this common condition.

Sciatica arises when a part of the sciatic nerve is pinched, inflamed, or compressed. This nerve comprises the L4 through S2 nerve roots of the spine, which join at the pelvis to form the sciatic nerve. It is the thickest and longest nerve in the body.

You might feel the discomfort almost anywhere along the nerve pathway, but it more often travels from your low back to your buttock, to the back of your thigh, and calf. The pain can vary widely from a mild ache to a sharp, burning sensation, or excruciating discomfort. Sometimes, it can feel like a jolt or electric shock. It can worsen when you cough or sneeze, and prolonged sitting can aggravate symptoms. Some people also have numbness, tingling, or muscle weakness in the affected leg or foot. Usually, only one side of your body is affected, although both sides can be involved.

There are four types of sciatica. The most common is acute, with a recent onset of symptoms lasting four to eight weeks. Chronic sciatica lasts for more than eight weeks and usually doesn't subside with self-management. Alternating sciatica moves from one side to the other, and bilateral sciatica occurs in both legs simultaneously.

40
PERCENT

▶ Sciatica is a painful condition that up to 40 percent of Americans will develop at some point in their lives. Fortunately, it can be prevented and cured naturally.

A Life Coach's Personal Playbook

Life coach Kristen Glosserman shares the key lessons that help her keep going onward and upward

TARA MACISAAC

Ignore your oppressive to-do list, life coach Kristen Glosserman says. Replace it with a shorter, more powerful and encouraging "do list" each day. Make one of the items on it your "commit": If you accomplish nothing else, at the end of the day you'll have completed this commitment. Make it something you've been avoiding, and the weight off your mind will be the reward.

"When you commit and actually follow through, you learn how to keep a promise to yourself," she wrote in her book, "If It's Not Right, Go Left" (2021).

The long road toward big goals is walked with small steps. Glosserman stays focused on her destination, especially when encountering obstacles along the way.

She has coached executives from Wall Street, Ralph Lauren, American Express, and Saks Fifth Avenue. She has paid close attention to how she overcomes obstacles in her own life and distilled in her book 11 life lessons.

"I wrote this book for me. I rely on these lessons. It's my self-help playbook that I'm sharing," Glosserman told *The Epoch Times*. Each challenge in her life represents a

type of challenge many people experience. For example, trauma. When Glosserman was 13, her little brother died in a skiing accident while they were on a family vacation.

She has experienced addiction in the form of smoking and successfully quit. She has made major career changes. She has been married for 15 years, has four children, and is a certified parent educator. She and her husband own a restaurant chain, and the pandemic has been as tough a time as any for their business.

Positivity is important for overcoming all of life's challenges, according to Glosserman.

"When we approach life as a series of challenges, as obstacles we're excited to overcome, we experience a shift toward possibility and positive change," she said.

Overcoming Trauma

Glosserman's parents were the picture-perfect couple in many ways. Their names were Barbie and Ken. Barbie was a cheerleader, Ken was a football player, and they were high school sweethearts.

"They had this sort of fairytale partnership," Glosserman said. "At the same time, they were incredibly real. There was a lot of fighting and passion and fun and love. It

“Traditions give us purpose, connection. They're our framework. [You have] those things to look forward to, as challenging as your week is.”

Kristen Glosserman, life coach and author



"If It's Not Right, Go Left: Practical and Inspirational Lessons to Move You in a Positive Direction" (2021)

was a really lively Italian household.

"When we lost my brother, it changed everything. It was such a heavy and sad time. As difficult as it was, I think that was the first time that I recognized the benefit of asking for help."

She coped by joining friends' families for their happy times—their Friday movie nights or holiday celebrations. She learned the importance of community and traditions.

"Your community is going to get you through the tough times," Glosserman said. "It wasn't sitting in my room alone, it was being with people who loved me that was going to help."

Now, with her husband and children, she has established family traditions—including Sunday family day—that help them get through the hard times.

"Traditions give us purpose, connection," Glosserman said. "They're our framework. [You have] those things to look forward to, as challenging as your week is."

One of her 11 lesson chapters is "Traditions: Honor Them, Create Them, Keep Them."

"Tradition for me is a reminder of why life is worth celebrating," Glosserman said. The importance of family became clear to her when she was a teenager finding solace in the happy homes of her friends. That's when she knew finding the right husband and having a big family would be a major goal in her life.

"I had this clear vision of what I wanted ahead," Glosserman said.

Keeping that goal in mind made it easier for her to overcome obstacles along the way.

Love Is a Choice

Glosserman quit smoking while dating her

Diagnosis

At the onset of your pain, get a clinical diagnosis. A thorough history and physical examination are necessary for a complete evaluation. Medical practitioners in chiropractic, sports medicine, and physical fitness all know the signs and causes of sciatica. Their experiences and training can diagnose your situation and offer options for relief.

Imaging is initially of little value unless your pain has persisted for six to eight weeks and doesn't respond to self-management. In this case, an MRI is the best technique. An MRI will usually be able to diagnose the cause of sciatic nerve pain, including disc herniations, osteoarthritis, lumbar spinal stenosis, or other types of injury.

I first experienced what was later diagnosed as sciatica when working at a desk job years ago. Little did I know that sitting could be the beginning of physical discomfort and eventually pain and injury. Over the ensuing years, I developed the following program that has healed my sciatica and kept it from recurring.

Chiropractic

Chiropractic visits have helped keep me sciatica-free for over 15 years. When flare-ups occurred, I would go to my chiropractor for stretching, adjustments, heat therapy, and sometimes electronic stimulation (ESWT) of the back to help release muscle spasms. Now that I am healed, I visit the chiropractor once a month for maintenance.

Physical Therapy

Programmed exercise has been one of the most critical long-term procedures to keep my back strong. Once I was evaluated by a physical therapist, I was given exercise movements that decreased my sciatica by reducing pressure on the nerve. An exercise program should include stretching exercises to improve muscle flexibility and, when you are feeling better, exercises to strengthen your core muscles.

Yoga

I started doing yoga postures long ago and then quit due to a back injury which aggravated the pain. I eventually returned to doing gentle yoga positions in my home that

include stretching the lumbar spine and hamstrings, seated spinal twists, cat-cow, down dog, and legs up the wall. If the pain returns, I stop for a few days. It's essential to listen to your body.

Daily Walking

Walking is a surprisingly effective approach to relieving sciatic pain. Regular walking promotes the release of pain-fighting endorphins and reduces inflammation. Use proper posture while walking, as poor posture may aggravate your sciatica symptoms.

Eating an anti-inflammatory diet with foods that help you maintain good nutrition is important.

A study published in October 2017 in the *Annals of Rehabilitation Medicine* looked at the walking habits of 5,982 people aged 50 and older, 26 percent of whom reported experiencing lower back pain. Investigators found that the people who walked the most were the least likely to experience back pain.

Daily Swimming

I live near a pool and find the water's buoyancy helps keep my back and legs flexible during laps and water exercises.

Pain Management

Alternating heat and ice therapy can provide immediate relief of sciatic nerve pain. Ice helps reduce inflammation, while heat encourages blood flow to the painful area and speeds healing. Heat and ice may also help ease painful muscle spasms that often accompany sciatica.

Although I occasionally use ibuprofen, I avoid strong pain killers and other drugs. These are only temporary solutions. It would be best to work on your physicality and sitting environment to heal your sciatica over the long haul.

Preventing Sciatica

The key to sciatica prevention is understanding what causes it and practicing habits that can keep it from developing.

Walk daily if possible while maintaining good posture.

Follow a regular exercise regimen to keep your back strong. Pay special attention to the core muscles in your

abdomen and lower back essential for proper posture, support, and alignment.

Avoid activities that irritate your back, especially prolonged sitting and standing.

Maintain proper posture. Choose a seat with good lower back support, armrests, and a swivel base. Keep your knees and hips level. Consider placing a pillow or rolled towel in the small of your back to maintain its standard curve.

Use good body mechanics, especially when lifting, turning, and bending.

Lose weight if you need to. According to the Spine Institute of Southeast Texas, excess weight is one of the most common causes of sciatic pain. Carrying extra weight, particularly around your middle, strains your back and abdominal muscles, especially if you have not strengthened your core muscles through proper exercises. Even a little

bit of weight loss can reduce inflammation and stress on your sciatic nerve.

Eat a well-balanced diet of fresh whole foods that support good health and a strong back.

Regular exercise can prevent sciatica.



Ergonomic Workspace

Ergonomics is the science of arranging your workspace or the things you use in daily life to fit your needs and body, thus reducing discomfort and increasing efficiency. Correct sitting posture is essential in reducing the strain on your back. Any recurring back pain disappeared once I changed my desk and chair to fit ergonomic principles.

Diet

Although most clinicians do not mention the relationship of food to sciatica, it's wise to evaluate at least what you are eating. Inflammation plays a large part in the irritation of the sciatic nerve. Eating an anti-inflammatory diet with foods that help you maintain good nutrition is important. Focus on a healthy mixture of mainly plant-based foods.

Diets rich in magnesium promote sciatic nerve regeneration and reduce inflammation. Foods high in magnesium include dark leafy greens such as baby spinach, collard greens, kale, or Swiss chard. Also include dark chocolate, dried pumpkin seeds, black beans, avocado, dried figs, yogurt, bananas, dairy, and apricots.

In addition, nutritionist Akanksha Mishra recommends adding green tea, turmeric, ginger, and omega-3 fatty acids found in oily fish, walnuts, and olive oil. The B vitamins are important for nerve health and the healing of sciatica damage. Choose salmon, eggs, and mushrooms as your best sources.

Avoid saturated fats known to increase inflammation. This category includes high-fat dairy products, fatty red meats, and processed or fast foods containing partially hydrogenated oil, such as fried foods, white bread, pasta, chips, crackers, and snacks.

It took me several years of trying various modalities before I found the right combination of activities and treatments for managing and healing my sciatica, but these are what helped.

Sandra Cesca is a freelance writer and photographer focusing on holistic health, wellness, organic foods, healthy lifestyle choices, and whole-person medical care. Her background includes allopathic medicine, naturopathy, homeopathy, organic and biodynamic farming, and yoga practices.

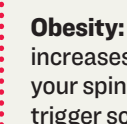


Risk Factors

Both the Cleveland Clinic in Ohio and the Mayo Clinic in Minnesota have listed the following risk factors they have found that contribute to the development of sciatica.



Age: Herniated disks and bone spurs from aging are the most common causes of sciatica.



Obesity: Extra weight increases the stress on your spine, which can trigger sciatica.



Occupation: Jobs that require twisting, lifting heavy loads, driving a vehicle for long hours, or sitting in front of a computer might cause sciatica.



Sitting: Prolonged sitting or a sedentary lifestyle are more likely to lead to sciatica.



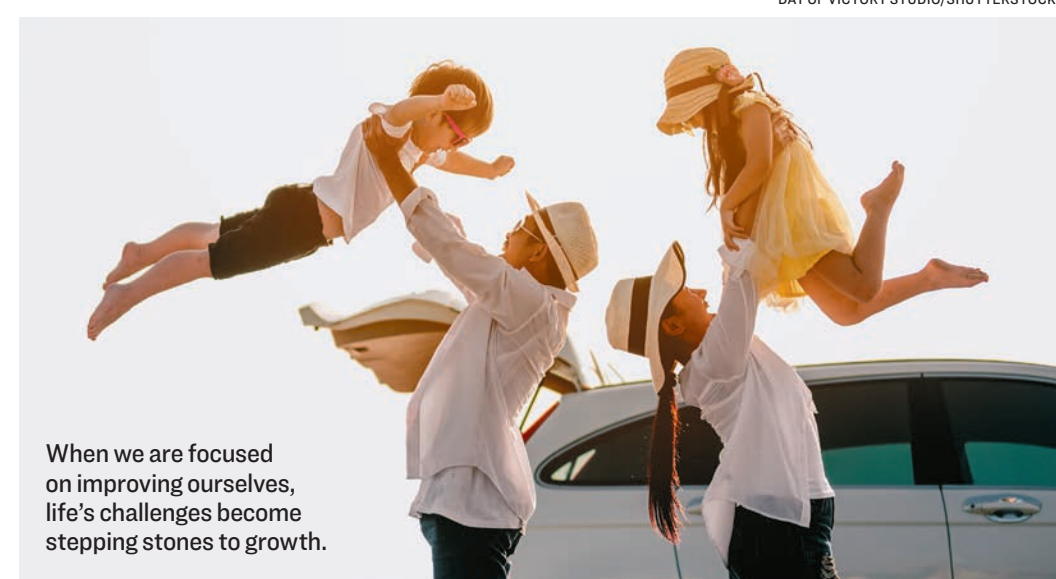
Diabetes: May affect how your body uses blood sugar, thus increasing your risk of nerve damage.



Arthritis: Can cause damage to your spine and put nerves at risk of injury.



Smoking: Nicotine in tobacco can damage spinal tissue, weaken bones, and speed the wearing down of vertebral disks.



When we are focused on improving ourselves, life's challenges become stepping stones to growth.

now-husband, Marc. He was strongly opposed to smoking.

"Every day, I would reinforce my goals: I wanted to be healthy and I wanted to be with Marc. This was my mantra," Glosserman said of quitting.

She stays goal-focused to overcome any frictions or would-be problems in her marriage. On that point, one of her lesson chapters is "It's Only a Problem If You Make It a Problem." She reminds herself why she wants to be with her husband, and that makes it easier to reach that greater goal, to look beyond the immediate challenges.

"I'm choosing this. This relationship serves me because he's wonderful and he's kind and he's the father of my children," Glosserman said. "This is something I want to be in. How do I move us in a better direction?"

One of her lessons is "Love Is a Choice."

That applies not only to relationships, but also to jobs.

"We can choose to harbor negativity or what we don't like, or we can really remember why we took this position, why it's serving us, why it's helping us in our careers—putting some more emphasis on why it is we're in the relationship, personally and professionally, that we're in," Glosserman said.

As she knows firsthand, a career path or life choice may turn out to be wrong when evaluated this way. Maybe it's not serving you or helping you reach your career and life goals. The title lesson of her book is "If It's Not Right, Go Left."

Glosserman gave an example of a major career change she made. She worked with a motivational speaker and greatly enjoyed it. But she took a job at Xerox, in sales and management, for double the

salary. After some time, she felt stuck and unfulfilled; she realized it was a job and not a calling.

One night, in a bout of depression, she was up watching pre-dawn infomercials. Motivational speaker and life coach Tony Robbins came on the TV and captured her interest. She started an online search using words such as motivation, teaching, and coaching.

"I set a small, achievable goal to get started and move me in that direction," Glosserman wrote in her book. "And that was to apply for any job that was closer to my ultimate passion."

She did so and worked at Equinox fitness company for some time. It showed her she could make a change (one of her lesson chapters is Change Is Hard and Change Is Good).

"It really did help me improve that risk-taking muscle," Glosserman said.

The next step was starting her own consultancy.

Not all the changes are as huge as shifting one's career path. Sometimes it's about any little change that will make you feel better about yourself. It could be cutting back on late-night snacking or limiting wine intake (Glosserman has a whole lesson dedicated to setting a two-glass limit).

She wrote about her small decision to get up one hour earlier each day to have some time to herself: "By actually getting up one hour earlier, I proved to myself that I could set a goal and achieve it. I could have complained that I never had enough time for my clients or for me—I could have made this a problem. Instead, I chose not to. I added this small goal to my DO list, found a solution, and made it work for me, and it felt amazing. And, that feeling of accomplishment gave me momentum that I could use to build toward larger goals."

Tara MacIsaac is an editor and reporter who has worked on a variety of topics over the course of her 10 years with *The Epoch Times*, including science, the environment, and local New York news. She is currently working with *The Epoch Times* edition based in Southern California.



Kristen and her husband Marc Glosserman. She says she stays goal-focused to overcome any frictions or would-be problems in her marriage.

MARIDAV/SHUTTERSTOCK



Smart watches or other visual trackers can motivate us to be diligent in healthy habits.

How to Gamify Your Health

Video games have taught us some things about motivation and attaining goals

MIKE DONGHIA

I know people who can spend hours per day playing video games. The activities they do in their virtual world are similar to jobs that exist in the real world. They build cities, solve problems, and hunt for opportunities—all without getting paid or needing external motivation.

I've wondered what it is about games that make them so absorbing. When I'm playing a video game, a board game, or even a competitive sport, it's as if time doesn't exist. I'm focused on the situation at hand and fully engaged in making the best next move.

While I think our relationship with technology has its issues, there's wisdom in learning from what works and keeping the best. That has certainly been the case for me in applying the principles of gaming to my personal health. The results have exceeded my expectations, and I think the principles can be applied broadly.

My First Smart Watch

I bought my first smart watch several months ago. I heard it could track my sleep, daily movement, and heart rate—all things I was interested in knowing. What I didn't expect was that having this information displayed on my wrist would also turn out to be a big motivator.

As a former cross country runner in college, I still consider myself to be a reasonably fit person. But there's no denying that 10 years of working behind a desk hasn't been ideal for my health. I'm 20 pounds heavier and much more sedentary. While I've exercised sporadically over the years, I'm less motivated and consistent than I

was when I had a track team and daily practice to keep me in line.

My biggest health concern has been poor sleep habits, which was a major influence in purchasing the watch. I thought if I could see the broad patterns of my sleep, I could make some positive changes.

Intentional Design

Beyond what people have learned over centuries through lived experience, there's overwhelming scientific evidence that exercise, moving around, and getting enough sleep are vital parts of a healthy lifestyle. The problem isn't that we're unaware of this; it's that we don't have the habits to consistently live it out.

After a month with my new watch, it was clear that something had changed. Not only had I achieved my new health goals, but I was doing so without willpower. What once required discipline was now the very thing I was eager to do.

It would be easy to credit the novelty of the watch for my progress, but the truth is that the watch managed to change my relationship to many of those activities. The watch's designers have tapped into deep psychological truths about human nature. They've taken many of the same elements that make playing games so rewarding and applied them to the user experience of their product. In the tech industry, this is called gamification.

Elements of Gamification

Gamification is the art of applying the elements of game playing to other activities. It's not as complicated as it may sound. Here are a few ways that my watch does this.

Clear Goals

In any game, there are clear goals to achieve. These bring a sense of clarity and simplicity to the gameplay, which helps to keep the players engaged and focused. My watch does this by asking me to input measurable goals across a number of categories. Many people never break down their goals to this level, but rather stick with vague goals, such as getting healthier or having more energy.

While I think our relationship with technology has its issues, there's wisdom in learning from what works and keeping the best.

Short Feedback Loops

With some goals, there's a long gap between starting and realizing if we're on the right track. This leaves us with a degree of uncertainty, which can be demotivating. However, a good game provides a lot of feedback, checkpoints, and milestones to keep you motivated. My watch provides real-time feedback on my wrist, and I can see by mid-afternoon if I need to pick up the pace to reach my goal.

Sense of Progress

A great game keeps the play moving and builds a sense of forward progress. In

sports, the clock keeps ticking; in board games, the card pile gets smaller; and in video games, you see your score climbing. Unfortunately, most of us don't have this constant reminder of our progress as we journey toward our goals. My watch makes this simple by showing my progress over time, including best days and longest streaks—all of which motivate me to keep going.

Technology Not Required

While my watch has been the catalyst for gamifying my health, the technology itself isn't even necessary. There are many creative ways to apply the elements mentioned above to your own life right now. For example, my wife loves to create beautiful charts to hang on our refrigerator to track family chores. Our kids might earn a sticker for completing a chore and a reward for doing so consistently over time.

Whether you use an app or a sheet of paper, the real power of gamifying your life is that it forces you to think intentionally about how you structure and track your goals. The responsibility will always be on us to make positive changes in our lives, but I believe that we can take the best of what game designers have learned about human nature to support ourselves in those efforts.

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.

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Resentment Is an Age-Accelerating Toxin

Researchers are discovering the links between character and disease

HEALTH 1+1

Everyone experiences negative emotions, such as resentment and dissatisfaction. These emotions will usually pass after a while. However, if you often feel resentment, you should beware of this emotion's ability to make you grow wrinkles early and age faster.

Why is that? Have you ever noticed that when you're in a resentful or angry mood, your facial muscles become stiff, so you have to deliberately lift the corners of your mouth to squeeze out a smile and that the muscles in the eyebrow area will also tighten up?

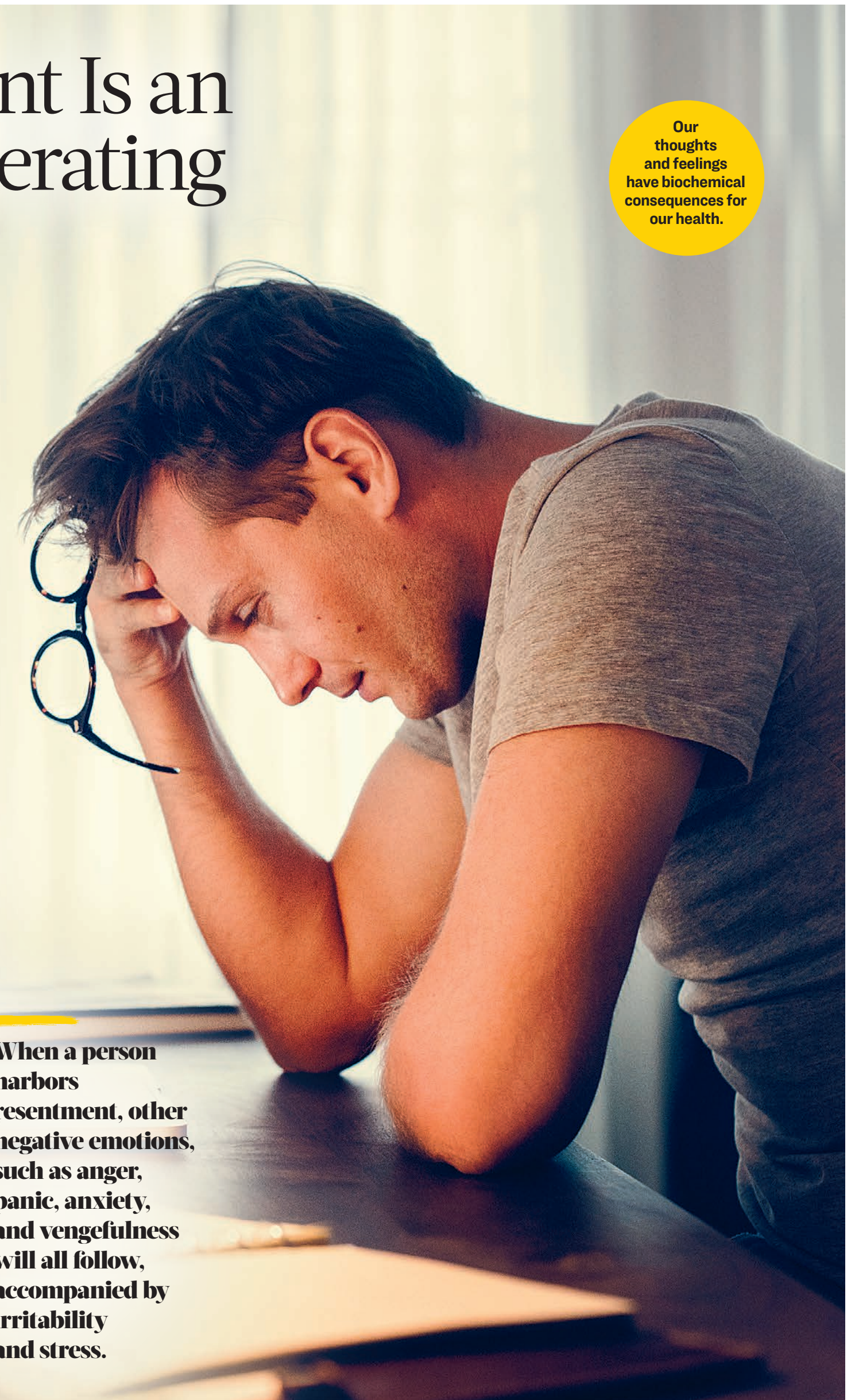
Such facial expressions tend to make people look older. However, if you're often in such a mood, you're no longer "looking" old, but actually getting old.

Dr. Gyaltzen Lobsang, a preventive medicine expert and director of the Lobsang Preventive Medicare Clinic, pointed out that among his patients, those who have a lot of grievances usually look older than other people of the same age. Especially after the age of 60, between people who often smile and those who don't, and the people who are often resentful and those who aren't, the differences in the aging of their faces, as well as the differences in the number of their facial wrinkles, are quite obvious.

When a person harbors resentment, other negative emotions, such as anger, panic, anxiety, and vengefulness will all follow, accompanied by irritability and stress. According to Dr. Lobsang, when negative emotions have accumulated for a long time, it will cause a gradual dysregulation of the autonomic nervous system, thus producing many physical problems.

The autonomic nerves include sympathetic and parasympathetic nerves, which are widely distributed in various tissues and organs of the body. Once the autonomic nervous system is dysregulated, insomnia, gastrointestinal problems, metabolic problems, and many other problems will knock on your door.

Continued on Page 10



Our thoughts and feelings have biochemical consequences for our health.

When a person harbors resentment, other negative emotions, such as anger, panic, anxiety, and vengefulness will all follow, accompanied by irritability and stress.

The Critical Importance of Deep Knee Bending

Conventional fitness wisdom about bending knees or toes doesn't hold up in research or practice

AMY DENNEY

Being able to sit down on the floor and stand up from that position without using one's hands can indicate a person's potential longevity, according to a 2012 study published in the European Journal of Cardiology.

If a person can stand up from the floor with the help of one hand or one knee, the study found, they wouldn't live quite as long as those who can stand up without using their hands or knees, but they would live longer than someone who needed both hands or both knees to stand.

There are about 500,000 knee replacements and 175,000 hip replacements annually.

When I read about this study, I immediately incorporated standing without the use of hands into the yoga classes of all ages that I teach.

In all variations of this movement, at least one knee must bend beyond the toes to make the transition possible. Conventional wisdom in athletic training has condemned exercising with knees over toes, despite the fact that it's necessary for sitting on the floor, not to mention climbing stairs.

"Contrary to popular belief, evidence only exists showing that the more ability you have with your knees over your toes, the less chance you have of knee pain and surgery," writes Ben Patrick on his Medium page. Patrick is a knee-strength coach who's extensively researched knee injuries, having had three surgeries by age 18 and suffered multiple torn ligaments.

He points to a 2016 study published in Medicine & Science in Sports & Exercise that followed people after anterior cruciate ligament (ACL) reconstruction and found that step-down and quadricep training improved performance six months after surgery.

But the training world has been fixated on the dangers of allowing the knees to extend beyond the toes ever since a 1978 Duke University study claimed that more pressure is put on the knees when they go over the toes.

Continued on Page 11



Many people stop their squats at 90 degrees, but deeper bends have benefits.

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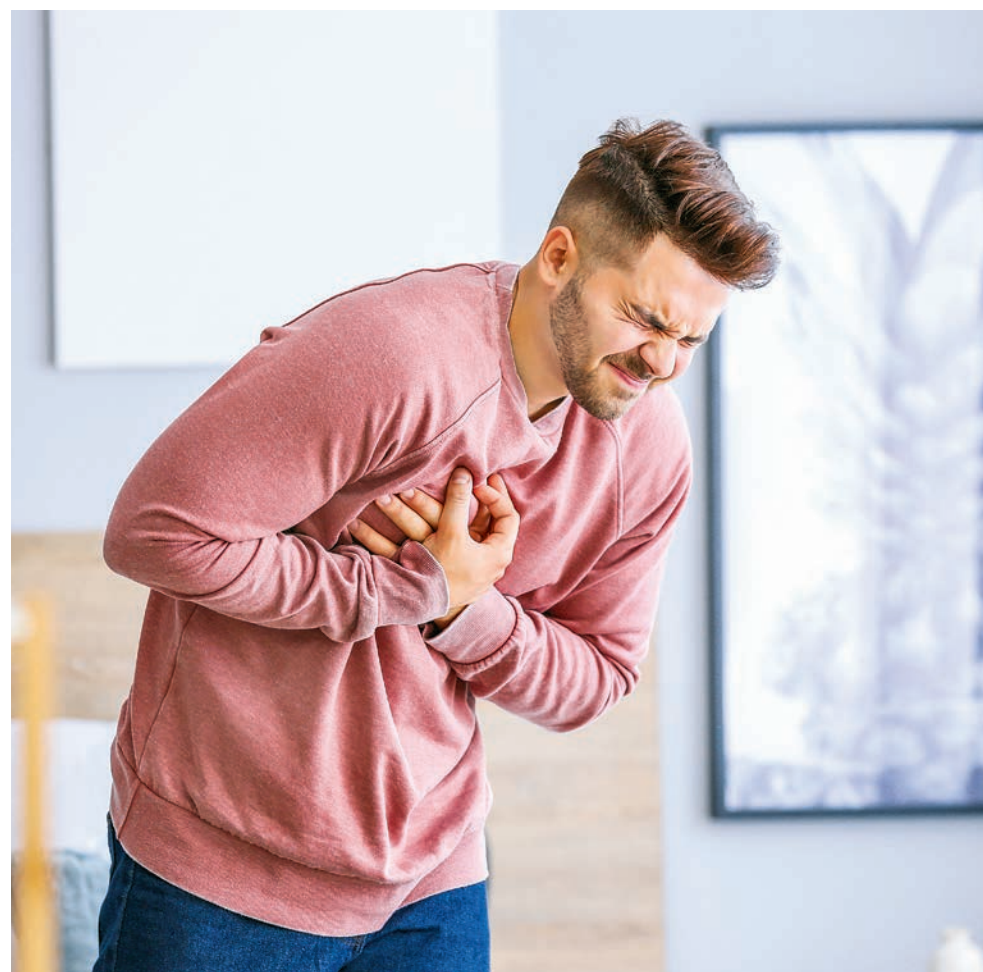
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A 2017 study found that cynical, distrustful men were at much higher risk of cardiovascular diseases.

Resentment Is an Age-Accelerating Toxin

Conventional fitness wisdom about bending knees or toes doesn't hold up in research or practice

Continued from Page 9

When a person has poor sleep quality, poor digestion and absorption, and poor metabolism, the body's ability to repair itself will also decline, resulting in muscle loss, poor collagen regeneration, and dull skin. This will make people prone to wrinkles and eye bags. Their skin elasticity and moisture retention will also decline, making their appearance look older.

In addition, resentment, anger, and other negative emotions will also prompt the sympathetic nerves to make the adrenal glands release more of the stress hormone cortisol.

When there's too much cortisol in the body, it won't only inhibit hair growth and result in less hair, but it will also destroy collagen and inhibit the secretion of the sex hormone precursor DHEA in the body. A DHEA secretion deficiency over a long period of time will accelerate aging.

The effect of different emotions on people's appearance "can be quite visible in as little as 10 years," Lobsang said. Negative emotions are reflected in the appearance of wrinkles and people's susceptibility to skin diseases.

The skin is the largest organ of the human body and includes hair, nails, the epidermis, and the dermis. The skin is also an organ closely related to emotions. For instance, anger, stress, fear, and other negative emotions will make the skin red, pale, sweaty, or itchy.

A 2020 Italian scientific research review found that people affected by skin diseases often have corresponding psychological problems. For example, emotions such as hatred or disgust are highly associated with psoriasis. Anger is frequently associated with psoriasis and atopic dermatitis, followed by urticaria, erythema, chronic idiopathic urticaria, acne, and vitiligo.

Resentment Can Also Shorten Your Life Span

"In preventive medicine, the mind governs, and psychological toxins are the most toxic," Lobsang said.

Resentment is a very poisonous toxin. He has seen that patients with high levels of resentment not only age, but are also prone to cancer.

Modern science has also discovered that resentment shortens people's life spans.

In preventive medicine, the mind governs, and psychological toxins are the most toxic.

Dr. Gyaltzen Lobsang, director, Lobsang Preventive Medicare Clinic

There's a key structure at the ends of linear chromosomes, the telomeres, which are the "protective caps" of the DNA. Every time a cell divides, the telomeres shrink a little, and when they're too short to shrink, the cell dies. Thus, behaviors that damage telomeres can cause premature aging.

A 2012 study published in Biological Psychiatry found that people who were highly cynical and hostile had significantly shorter telomere lengths than others. The relationship between hostility and disease was more pronounced in men than it was in women.

Another study in 2017 found that cynical, distrustful men were at much higher risk of cardiovascular diseases, including heart disease and stroke, and had higher mortality rates than average.

According to Lobsang, the only way to be optimistic and happy is to change one's mindset, so that one's autonomic nervous system will be balanced and able to maintain normal physiological functions. People who often have a happy smile on their face have more developed facial muscles and firmer skin.

Lobsang advised everyone to stop holding grudges, if that's the case, so that they'll look younger than before, both in physical age and in appearance.

Health 1+1 is the most authoritative Chinese medical and health information platform overseas. Every Tuesday to Saturday from 9:00 am to 10:00 am EST on TV and online, the program covers the latest on the coronavirus, prevention, treatment, scientific research and policy, as well as cancer, chronic illness, emotional and spiritual health, immunity, health insurance, and other aspects to provide people with reliable and considerate care and help. Online: EpochTimes.com/Health TV: NTDTV.com/live



A 2012 study found cynical, hostile people had shorter telomeres, the caps at the end of chromosomes that protect our DNA.



A 2020 research review found emotions such as hatred or disgust were highly associated with psoriasis.

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The Critical Importance of Deep Knee Bending

Conventional fitness wisdom about bending knees or toes doesn't hold up in research or practice

Continued from Page 9

Meanwhile, knee and hip replacements continue to rise. There are about 500,000 knee replacements and 175,000 hip replacements annually in the United States. Hip replacements are expected to increase 174 percent, while knee replacements are expected to go up 673 percent, according to the American Academy of Orthopaedic Surgeons 2006 data.

Patrick and other trainers are attempting to shift the narrative in line with what they are experiencing in real time—that people can strengthen their joints by challenging their range of motion at the ankles and gaining a deeper squat. Not only is this possible, but anyone can do it, taking into consideration past injuries and other limitations.

A review published in Sports Medicine in 2013 looked at 164 relevant studies over a two-year period and found deep squats don't contribute to an increased risk of injury and, in fact, a deep squat done with the right form can prevent degenerative changes in the joints.

Bending our knees past our toes can help us maintain flexibility, mobility, and strength.

Knees Over Toes for Seniors

Older adults who desire to maintain their flexibility, mobility, and strength for decades are jumping on the bandwagon.

Patrick's mother, Celia, had a chance to personally test the notion that intentionally exercising with the knees past the toes could allow her to bend over and squat down without pain or assistance.

Despite being active her whole life, she woke up one morning with persistent pain and stiffness in her hips. She was very concerned when it became difficult to pick things up from the floor, so she reached out to her son, who scaled his exercises for her.

Now age 68, Celia can lower to her knees in "hero" pose, sit in "easy" pose, and hold a low squat with ease and no pain. She demonstrated all three a year ago in a video for Patrick's YouTube channel.

In the video, in seconds, she transitions through sitting postures that are more commonly seen on a blanket of toddlers at a park playdate.

"Kids do this all the time," Celia says as she squats, her buttocks resting on her heels. "I'm going to be doing this in my 90s. Watch." She also highlights Patrick's signature exercise—split squats—which she credits with strengthening and building flexibility in her ligaments, tendons, muscles in and around her feet, ankles, knees, hips, and lower back.

"This one in particular is going to allow me to ride into my 70s, 80s, and 90s pain-free and mobile," Celia says in the video, demonstrating three different levels used to ease into the exercise.

"The hip pain and stiffness went away entirely never to return—ever."

Patrick's program is highly rated by many people in their golden years who are seeking functional exercises to help them either to avoid surgery or to improve their quality of life. But he's hardly the only one.

Cindy Ward, a CrossFit Level 1 and American Council on Exercise (ACE)-certified personal trainer, reminds her clients constantly that if their goal is to stay out of the nursing home, then

it's important that they can get on and off the toilet without assistance. That means strengthening the knee at the 90-degree mark, which means building flexibility at every angle above and below that.

"Your body is meant to move. Your knee isn't a 90-degree only joint," Ward said.

Nine out of 10 of her clients tend to naturally stop any attempt to squat at that point, which actually puts even more pressure on the joint and can make it more prone to injury. Ward coaches all ages and body shapes from the standpoint of functional fitness.

The Origin Series, an organization that certifies fitness coaches, is debunking the knees-over-toes myth and encouraging teachers to follow studies like one from 2003 in The Journal of Strength and Conditioning Research that found limiting the natural deep bend of the knees could actually put more stress on the hips and lower back.

The ACE says that "don't let your knees go beyond your toes" could be good advice in a group exercise class when erring on the side of caution, but it's a disservice in one-on-one training.

It points out research from 1994 that Olympic weightlifting has a lower incidence of injury than many other competitive sports, and those athletes' knees always extend beyond their toes. Training for flexibility in the joints, as weightlifters do, can strengthen the body and prevent harm.

Why Knees Over Toes Matters

I recognized many of the movements that Patrick recommends from my husband's work hardening, an intense rehabilitation program he was required to complete in order to return to his physically demanding job. He needed reconstructive surgery for his ACL and medial collateral ligament in 2019 after a workplace accident. In his therapy, he did a lot of backward movement and deeper squats in

Contrary to popular belief, evidence only exists showing that the more ability you have with your knees over your toes, the less chance you have of knee pain and surgery.

Ben Patrick, knee strength coach

four-hour daily workouts.

His recovery was stellar, something his physician and nurse commented about, and there's no doubt the deep flexion and functional rehabilitation made all the difference. Flexion is the act of bending a joint or limb by using flexor muscles.

Naturally, rehabilitation after surgery doesn't start with this kind of activity. My husband was non-weight-bearing for six weeks and then entered several weeks of physical therapy, much of it to reverse muscle wasting. Before taking it to the point of knees over toes, he needed to strengthen his quadricep muscle and the surrounding tendons. It required consistent hard work.

Patrick's program begins with exercises to build up the range of motion of the ankle joint as a foundational requirement to deepen the squat and support the load. When the patella and femur are at 90 degrees of flexion, the knee carries an estimated force of 6 1/2 times the body weight.

Form is critical always but especially after injury or surgery to any lower body joint. Squats, for instance, must involve the hips lowering straight down, not back, and with an even distribution of weight between the hips and the knees.

What motivates Patrick isn't much different from what motivates Celia—living a pain-free life doing the things he loves. For him, it's playing basketball and being able to dunk from a stationary position. For his mom, it's getting on the ground pain-free to play with her grandson.

Celia said: "I want to be able to swim and climb and ride bikes and roller skate and skateboard. ... If he's chasing me, I'm going to be able to run. See ya! You can't catch me!"

Amy Denney is an award-winning journalist, certified Holy Yoga instructor, and light therapy specialist. She works with clients looking for natural, side-effect-free solutions to pain and stress



Basic Exercises

It's always best to work with a trained expert and be certain of correct form, especially when you are coming off an injury. When it comes to knee health, here are some of the exercises commonly found in Patrick's and other certified trainers' content:



Tibialis Raise

Lean with your back against a wall and take a step out.

With both feet together and without bending your knees, flex your feet and lift your toes up.

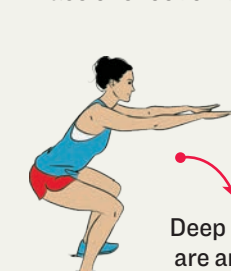
If it's too challenging, step in or take off your shoes.

To make it more challenging, take another step out.

Split Squat

Start at a beginner level without weights using a sturdy bench or surface about 2 to 3 feet tall.

Place one foot on the bench with



Deep squats are another great exercise.

the back leg extended behind you in a lunge. Bend the front knee so it extends over the toes.

Straighten and re-bend the front knee to a comfortable depth in repetitions of 10.

Find a surface about a foot tall for the next level.

Elevate the back heel on a weight plate or door stop as you let the hips sink lower as tolerated.

Sled Pulling

Five days a week, Patrick recommends 200 meters of pulling a sled, or a Tank sled, backward.

Alternatives are 400 meters of backward walking on an incline or five minutes backward walking on a treadmill that's turned off (or broken).



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THE EPOCH TIMES

How to Cut Your Risk of 13 Cancers

Tried and true practices can help you drop weight and avoid the specter of cancer

HEALTH 1+1

Studies have found that many cancers are related to obesity. Nowadays, more and more people are becoming obese. However, doing two things can easily achieve the effect of cancer prevention and weight loss.

According to the Centers for Disease Control and Prevention (CDC), obesity will increase the risk of 13 types of cancer, and these cancers account for 40 percent of all cancers diagnosed in the United States each year, including breast cancer, colon cancer, stomach cancer, liver cancer, esophageal cancer (esophageal adenocarcinoma), pancreatic cancer, kidney cancer, ovarian cancer, uterine cancer, gallbladder cancer, thyroid cancer, meningioma (a type of brain cancer), and multiple myeloma (a type of blood cancer).

Increased Risk

Compared to those with normal weight, the risk for several cancers increases substantially for those who are obese or overweight:

- Endometrial cancer: The risk is seven times higher for those with severe obesity, and two to four times higher for those who are obese or overweight.
- Esophageal cancer (esophageal adenocarcinoma): The risk is 4.8 times higher for severely obese people and 1.5 to three times higher for obese or overweight people.
- Stomach cancer (gastric cancer): The risk is twice as high for obese people.
- Liver cancer: The risk is twice as high for obese or overweight people.
- Kidney cancer: The risk is twice as high for obese or overweight people.
- Pancreatic cancer: The risk is 1.5 times greater for obese or overweight people.
- Colorectal cancer: The risk is 1.3 times greater for obese or overweight people.
- Gallbladder cancer: The risk is 1.6 times greater for obese people and 1.2 times greater for overweight people.

40% of all cancers diagnosed in the United States each year can be prevented by combatting obesity.

- Meningioma: The risk is 1.5 times greater for obese people and 1.2 times greater for overweight people.
- Breast cancer (after menopause): The risk is 1.2 to 1.4 times greater for obese or overweight people.
- Thyroid cancer: The risk is 1.2 to 1.3 times greater for obese or overweight people.
- Multiple myeloma: The risk is 1.1 to 1.2 times greater for obese or overweight people.
- Ovarian cancer: The risk increases 1.1 times for every five-point increase in body mass index (BMI).

From 2005 to 2014, among Americans with new cancers, the cancers unrelated to obesity decreased by 13 percent. However, the incidence of obesity-related cancers increased by 7 percent, with the exception of colorectal cancer, which can be detected and prevented in advance with screening.

The most common type of cancer in obese men is colorectal cancer. In women, it's breast cancer after menopause.

Among the above 13 types of cancer, more than 90 percent of new cancer cases occur in people aged 50 years or older. The longer a person stays obese or overweight, the greater the risk of cancer.

Obesity and Cancer: Shared Causes

Dr. Chih Ying Liao, director of Radiation Therapy and Integrative Oncology Department at MOHW Taichung Hospital in Taiwan, pointed out that obesity is only one of the "manifestations" of these problems. Obesity is related to poor dietary habits, lifestyle, and metabolic factors, which

themselves have the risk of promoting cancer.

For instance, frequently consuming fried foods, desserts, barbecued meats, and other unhealthy foods and not doing enough exercise are contributors to obesity, as well as cancer. After being fried, pan-fried, or grilled, meat will produce carcinogenic substances, such as heterocyclic amines and polycyclic aromatic hydrocarbons.

In particular, after being roasted or prepared through other high-temperature cooking methods, red meat tends to produce advanced glycation end products (AGEs), resulting in chronic inflammation and increasing the chance of cancer. If too many desserts are consumed, the sugar in them can bind to the protein molecules in the body and, after a series of reactions, can also form glycation end products.

Long-term chronic inflammation and metabolic syndrome related to obesity, as well as higher than normal levels of insulin and insulin-like growth factors, will cause cancer cells to grow.

There are usually cancer cells circulating in the body. When the body is in good shape, the immune cells can kill the cancer cells. However, when the metabolic system and the immune system become weakened, it will be very difficult to kill cancer cells. Obesity allows cancer cells to multiply more easily and continuously.

In addition, a study conducted in Taiwan in 2017 confirmed the relationship between obesity, adipocytes (fat cells), and cancer. Researchers found that an MCT2 protein on the membrane of breast cancer cells acts as a gateway, sending metabolites that are spit out by adipocytes to breast cancer cells as nutrients, thus helping breast cancer cells grow.

Losing Weight can Reduce the Risk of Cancer

The definition of obesity is different for everyone because of factors

such as height, muscle mass, body shape, and so on. Body mass index (BMI) can be used as one basis for determining whether someone is obese, but it has limitations as well, since it doesn't account for muscle mass or waist circumference.

Long-term exercise can produce a cancer-inhibiting environment in the body.



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The Ins and Outs of Supplements

Understanding the proper use and varying qualities of supplements can help you use them properly—or not at all

ZRINKA PETERS

Supplements have become a massive industry with plenty of enthusiastic promoters. But for all the research telling us how certain vitamins and nutrients affect our bodies, taking supplements can't always deliver the results we may hope and expect.

"In my clinical experience, benefit from supplements is most successful when tailored to the unique nutritional needs of an individual," said Dr. Tamara Darragh, a naturopathic physician licensed by the Minnesota Board of Medical Practice.

Darragh says given the range of benefits and needs, getting expert advice from a knowledgeable provider can be important in any supplement regimen.

Such an expert can take a wide variety of factors into consideration, including age, sex, genetics, family history, illness, lifestyle factors, and more. It may also be prudent to test for any nutrient deficiencies.

Value for Dollar

With so many different types of supplements available, and with new ones coming to market daily, beyond expert advice, how can you be sure that you're choosing a safe and high-quality product that could actually provide some benefit?

One way to verify product quality is to

look for products that have been tested by an independent third party, such as ConsumerLab, NSF, or Banned Substances Control Group (BSCG). Third-party testing isn't required by law but some manufacturers still choose to have their products third-party tested as a sign of their commitment to quality and transparency.

These independent groups test for illegal substances, validate that the ingredients listed on the label are actually what's in the bottle, test for product potency, and provide a certificate of analysis (COA) listing the results. Some manufacturers, such as NutriGold, make the COA for their products available for consumers to easily access on their website or via a QR code on the product label.

Unlike prescription drugs, the Food and Drug Administration (FDA) doesn't regulate the safety or quality of dietary supplements before they go to market. Instead, it's the responsibility of each manufacturer to ensure that safety standards are met and that the supplement actually contains the ingredients and potency listed on the label.

Unfortunately, this isn't always the case. According to the National Center for Complimentary and Integrative Health, a 2012 government study found that 20 percent of supplements marketed for weight loss or immune system sup-

port made illegal claims on the label. The FDA has also found prescription drugs in thousands of products being sold as dietary supplements.

The FDA does play some roles. It may inspect supplement manufacturing facilities, and it monitors reports of adverse events that are submitted by the companies themselves, health care professionals, or consumers. The agency also prohibits supplement manufacturers from making false claims or exaggerating the efficacy of their products.

Supplements are intended to 'supplement'—not replace—nutrients supplied through diet.

But because the human body is so complex and people are so different from one another, sometimes the science itself is uncertain.

Study results on the safety and effectiveness of many supplements are mixed and often conflicting, and certain nutrients can carry serious health risks or be toxic in large doses. That's why it's important to consult with a trusted

health care provider about your individual nutritional needs and to purchase supplements from a trusted manufacturer. Take any hyped-up health claims with a healthy dose of skepticism, and don't assume that words such as "natural," "standardized," "clean," or "verified" are a guarantee of quality.

Strictly Supplemental

According to Darragh, the quality of a supplement depends on a variety of factors, including the quality and purity of the raw materials, the formulations used, the inclusion or exclusion of unnecessary fillers and dyes, and quality control during the manufacturing process.

An important point to keep in mind is that dietary supplements, by definition, are intended to "supplement"—not replace—nutrients supplied through diet. Many health experts believe that, for most healthy individuals, it should be possible to get all the nutrients needed for good health through a varied, nutrient-dense diet.

According to the FDA, a supplement is a product that is taken orally and contains one or more "dietary ingredients." It's technically neither a food nor a medicine, but could include vitamins, minerals, amino acids, botanicals (plant derivatives), or live microbials (like probiotics). Supplements can also contain some combination of these ingredients.

Dietary supplements can be a powerful tool for health and wellness for those who may need to fill nutritional gaps. And when chosen and used carefully, they can play an important role in pro-

For most people, however, BMI is a good indicator of healthy bodyweight, since it's based on weight and height.

According to Liao, if someone has a BMI higher than 25, he or she is overweight; higher than 27 is mild obesity; and higher than 30 is moderate obesity. The higher the BMI, the stronger the cancer-causing factor of obesity, so attention should be paid to those with a BMI of higher than 27.

The CDC divides obesity into classes. People with a BMI from 30 to 35 are class 1, 35 to 40 are class 2, and 40 or higher are class 3, sometimes categorized as "severe" obesity.

Another simple way to determine obesity is to measure the waist circumference. This can also correlate with cancer risk. Women with a waist circumference of 32 inches or more and men with a waist circumference of 35 inches or more have a higher risk of developing cancer. Liao said the longer the waist circumference, the more serious the abdominal obesity and the higher the visceral fat content, meaning that the body is in a state of chronic inflammation with abnormal metabolic problems.

Therefore, obese people need to lose weight to reduce the risk of cancer. However, how much weight should they lose to be safe?

"Obese people who lose 5 percent of their current body weight will have reduced the risk of cancer," Liao said.

In other words, a 150-pound person who loses 7.5 pounds will have a statistically relevant drop in their risk of cancer. He pointed out that although the ideal state is to reduce the weight to a BMI value of 25 or less, for many obese people, that would be difficult, and they might give up halfway.

Another method is to keep the waist circumference less than 31.5 inches in women and 35.5 inches in men, in order to reduce visceral fat.

Anti-Cancer Weight Loss Methods

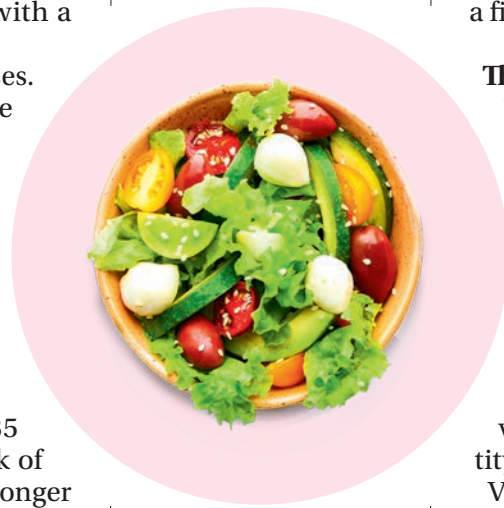
There are various ways to lose weight. However, using the wrong way or unsuitable ways to lose weight will make the body even more unhealthy.

According to Liao, exercise, a balanced diet, and consuming a lot of fruits and vegetables are ways that everyone can use to lose weight. In terms of diet, he recommended the Mediterranean diet, as well as eating fewer carbohydrates. People tend to eat too many carbohydrates, especially the over-processed carbs found in processed foods.

The Mediterranean diet is composed of vegetable-based meals, with high-quality proteins, whole grains, and healthy oils.

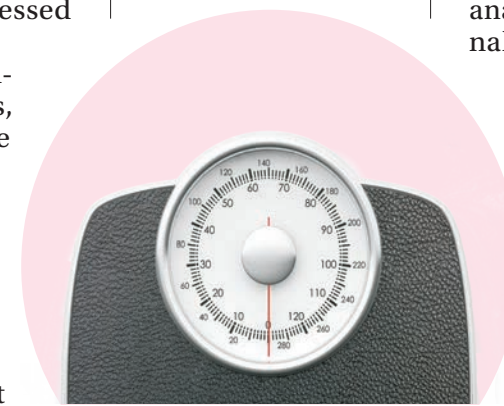
The word "fats" may make dieters feel uneasy, but the Mediterranean diet doesn't avoid fats while having the same weight-loss effect. A study published in the American Journal of Medicine found that the Mediterranean diet

Fiber-rich foods can also balance and reduce the intake and absorption of fats and cholesterol, so that the body is less likely to accumulate visceral fat or produce excessive cholesterol.



In 2021, a study found that muscle hormones can inhibit tumor growth and even help actively fight cancer cells.

Obesity is related to poor dietary habits, lifestyle, and metabolic factors, which themselves have the risk of promoting cancer.



is more effective than a low-fat diet. People who adopt the Mediterranean diet can lose up to 22 pounds of body weight in one year.

Another study of more than 32,000 participants, which was conducted in Italy, shows that long-term adherence to the Mediterranean diet was associated with a reduced risk of abdominal obesity over a five-year period.

The Mediterranean Diet

The Mediterranean Diet is already linked to healthy longevity, meaning researchers have found that people who follow this diet live longer and with fewer illnesses. The following are the key components of the Mediterranean diet.

Vegetables and Fruits

This diet is based on eating lots of vegetables with an appropriate quantity of fruits.

Vegetables and fruits are rich in dietary fiber, which can absorb toxins in the intestines and slow down the rise of blood sugar and the rate of blood glucose absorption. When the absorption of blood sugar becomes slower, the secretion of insulin and insulin-like growth factors will be reduced.

Fiber-rich foods can also balance and reduce the intake and absorption of fats and cholesterol, so that the body is less likely to accumulate visceral fat or produce excessive cholesterol. The more dietary fiber you consume, the easier it is to feel satiated. Fiber also promotes intestinal motility and helps with bowel movements.

A 2018 review study in Nutrients shows that eating more vegetables was associated with lower body weight and reduced waist circumference.

Eating multicolored fruits and vegetables also provides access to a wide range of nutrients, including phytochemicals, which help the body resist oxidation and improve chronic inflammation.

We should consume more vegetables than fruits because of the higher sugar content in fruit, which can interfere with blood sugar control and cause weight gain.

High-Quality Proteins
This diet includes eating plenty of legumes, seafood, eggs, white meat, and dairy products, such as Greek yogurt.

Eating soybeans, black beans, chickpeas, and other legumes, as well as bean products, can help you lose weight. An analysis published in the American Journal of Clinical Nutrition compiled data from 21 clinical trials and concluded that adding legumes to the diet may be a beneficial weight loss strategy—even if there's no intention to restrict calories—and can result in a moderate weight loss.

Adopting the Mediterranean diet can also reduce the intake of red meat. However, when cooking seafood and white meat, we should also avoid pan-frying, grilling, fry-

ing, and other high-temperature cooking methods.

Whole Grains

Brown rice, black rice, quinoa, and oats are examples of healthy whole grains people eat on this diet.

According to Liao, people who want to lose weight should reduce their intake of foods high in refined starches, such as pastries, white bread, and over-processed pasta. Replace these kinds of staple food with whole grains.

Fish and Plant-Based Fats

Fish, olive oil, avocados, nuts, and seeds are the main sources of fats on the Mediterranean diet.

Fatty fish, such as salmon, are high in omega 3 fatty acids, which are linked to several health benefits. And all of these plant-based fats have been shown to have cancer-preventive effects. When cooking with good oils, such as olive oil, you can also add some herbs or spices to enhance flavor and reduce the amount of salt used.

Train Muscles to Secrete Cancer-Fighting Hormones

In addition to adjusting our diet, exercise is also important. Liao said both aerobic exercise and muscle training should be taken into account.

In particular, weight training to strengthen muscles can reduce insulin resistance, increase basal metabolic rate, and improve fat metabolism. This is because muscles can secrete more than 3,000 types of muscle hormones. Muscle hormones can promote lipolysis, which is the process by which fats are broken down so that their stored energy can be used by the body. In particular, exercise can promote lipolysis of visceral fat, and several muscle hormones have potential anti-cancer effects.

In 2021, a study found that muscle hormones can inhibit tumor growth and even help actively fight cancer cells. Long-term exercise can produce a cancer-inhibiting environment in the body.

Finally, during aerobic exercise, the heart rate should reach at least 130 beats per minute, which means that the person will be panting. You'll know you've reached the appropriate level of exertion if you can still talk, but singing is impossible.

This is the only way to effectively burn calories and improve metabolic problems.

Health 1+1 is the most authoritative Chinese medical and health information platform overseas. Every Tuesday to Saturday from 9:00 am to 10:00 am EST on TV and online, the program covers the latest on the coronavirus, prevention, treatment, scientific research and policy, as well as cancer, chronic illness, emotional and spiritual health, immunity, health insurance, and other aspects to provide people with reliable and considerate care and help. Online: EpochTimes.com/Health TV: NTDTV.com/live



Cancer is the out-of-control growth of cells. In a way, cancer is a lot like weight gain, which also results from an unhealthy growth of unwanted cells.



Plant-based fats have been shown to have cancer-preventive effects.

moting health and wellness for many. But they aren't the panacea some promoters, marketers, and so-called experts promote them to be.

There are conditions when getting extra nutritional support through supplementation may be needed. Those with nutritional deficiencies, or medical conditions that result in poor nutrient absorption, might need supplementation to meet all their nutritional needs.

Vegans may benefit from supplementation, especially with vitamin B12, which is found mainly in animal products. Also, pregnant or breastfeeding women, who have increased nutritional needs, and those with limited access to healthy foods may benefit.

The Backstory

It's important to note that, even though dietary supplements may be "natural" in the sense that they are taken either from leaves, roots, or another substance found in nature, that doesn't mean they are risk free. The same is true of those that are synthesized in more industrial processes.

And while herbs and other botanicals have been used medicinally for thousands of years around the world, it's only in the past century that the dietary supplement as we know it today has risen to prominence.

It wasn't until 1912 that scientists began to discover that the world of nutrients contained more than just the macronutrients of proteins, carbohydrates, and fats. Sub-



Expert advice from a knowledgeable health care or nutrition provider can be important in any supplement regimen.

sequent decades led to the gradual discovery of increasing numbers of vitamins, minerals, and other nutrients, which were gradually isolated, extracted, and shortly after synthesized in labs. In the years since, they have been commercialized.

The progression through the decades has taken the dietary supplement industry from obscurity to ubiquity. The Council for Responsible Nutrition, which conducts an annual Consumer Survey on Dietary Supplements, reported that its latest results, from 2021, showed a new high in supplement use, with 4 out of 5 Americans using some kind of dietary supplement.

And that shift isn't without some risk.

Issues and Problems

Because supplements are concentrated forms of specific compounds, it's possible to overdose by taking too much either in a short amount of time or over the long term.

For example, a study published on Dec. 22, 2016, in Advanced Pharmaceutical Bulletin showed that excessive amounts of vitamin A damages bone health, increasing the risk of fractures and osteoporosis.

And beyond the tremendous variance in quality of supplements, the simple fact is that sometimes the body can't use certain vitamins or minerals effectively in supplement form. They may need to be taken with other nutrients, dietary fiber, or when certain biological conditions are met. That means you can spend a lot of money on supplements and get little to no results.

Multiple other studies found that taking various supplements including folic acid, retinol, and multivitamins had either no

effect on disease prevention or actually had harmful effects. And, according to the FDA, some supplements can negatively interfere with prescription medications; others can interfere with lab tests and have dangerous effects during surgery.

One of the most popular forms of supplements is the multivitamin. And while taking a daily multivitamin may not do any harm, there's not much evidence that it does any good, either. As the National Institutes of Health's National Center for Complementary and Integrative Health states on their website, "Most research shows that taking multivitamins doesn't result in living longer, slowing cognitive decline, or lowering the chance of getting cancer, heart disease, or diabetes."

"I wish there was a magic supplement 'insurance policy' but the reality is health is much too complex," said Darragh.

"Nutritional supplements can be part of this quest for preventing illness and health challenges, but I believe too much importance is placed on them. They work best when taken as part of a holistic plan consisting of daily habits that include, but are not limited to, a nutrient-dense diet, movement, sleep, stress resilience, balance, joy, and community."

Zrinka Peters has been writing professionally for more than a decade. She holds a degree in English Literature from Simon Fraser University in Canada and has been published in a wide variety of print and online publications, including Health Digest, Parent.com, Today's Catholic Teacher, and Education.com

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How You Can Take a Digital Detox this Summer

Push back against the tyranny of technology that steals your time, motivation, and will power

JOSHUA BECKER

Derrick, 17, rolls out of bed and wanders into the kitchen. His dad is making coffee and asks if Derrick wants some breakfast—maybe toast and an omelet? Derrick grunts, grabs his phone, and curls up in the corner of the couch, ignoring food and father.

Twenty minutes later, Dad walks by and mentions that the first bell at school is in 10 minutes. Derrick unfolds from the couch, throws on sweats, and rushes out the door, calling a hasty goodbye over his shoulder.

Technology can become a distraction from living life to the fullest and an obstacle that often needs to be reevaluated if we're to focus on things that matter. It has a habit of getting inside us and changing our minds, hearts, and wills.

It's pervasive enough and influential enough that we can't afford to assume the distraction is something we can handle. We've got to decide who's going to be the master in our lives—we or tech.

When Monica scrolls through her feed, she feels triumphant—her parents think she's looking for new décor ideas for her bedroom. They're updating her room, and at age 13 she loves finding the latest trends online.

But what they don't know is that from the image-sharing website she can also view videos from the social media app they haven't yet approved for her to use. Before she knows it, an hour has passed and she hasn't even begun to look at any room décor. Besides that, she's starting to feel dissatisfied with the choices she's made so far in her room—maybe she doesn't like that new rug after all.

We're losing control of our lives and our passions due to the seductive nature of technology. Technology is stealing our time. Even worse, it's making us feel bad about ourselves. Unfocused and isolated, we only turn to technology more and more.

Devon's lunch hour is too short to go home, but the camaraderie in the employee lounge is always a refreshing break. When everyone worked from home during the pandemic, the lounge stayed empty for almost a year. Now that most employees are back in person, the room hums again

with conversation.

But in the isolation of the pandemic, Devon grew accustomed to playing a game on his phone during lunch. It's a great one—he only needs five minutes to play a round, and he's pretty good at it. It gives him a nice break from the drudgery of his work, and he still has time to eat and check his personal email. He's not staying in the lounge for lunch anymore, though. He'd rather grab his food and head back to his cubicle where he can play in peace while he eats.

How do we recognize these large—yet subtle—distractions in our lives? How do we regularly assess the path of our lives to ensure that we're seeking and investing in the most significant things?

Perhaps it's not as hard as we imagine. Maybe it requires only a little intentionality and effort. And, often, realizing what's going on is the first step.

Kinsley looks down at her nursing baby to find him staring at her, waiting for her eyes to lock on his. But she hadn't noticed because of the phone in her hand, the feed on her screen. "When my baby looked at my face, I wanted him to see my eyes looking back at him," she said. It was the beginning of the end of social media for this mother of four.

I give you these examples because our tech use is so pervasive we hardly even notice its impact anymore. Who do you envision when you read these stories? Do you see your child, your friend, or yourself? I'd like to flip the narrative. Let's check in before we check out. Let's create before we consume. Let's use tech as a tool rather than a toy.

The key is not to throw out all tech, but it would be wise for all of us to take a step back, reboot, and put tech in its rightful place in our lives.

The leaders of technology aren't going to stop warring for our focus, our time, and our money. We must learn to fight back in a responsible way if we're going to live lives that matter. Let's take responsibility for our part in submitting to the tyranny of tech.

I challenge you to a tech detox. Summer is here, and with it often comes a change of pace. Take the opportunity to turn off your technological inputs to the barest essentials.

I encourage you, this summer, to take 29 days and detangle from technology

We've got to decide who's going to be the master in our lives or tech.



The key is not to throw out all tech, but it would be wise for all of us to take a step back, reboot, and put tech into its rightful place in our lives.

as much as you conceivably can. It takes some adjustment, but this practice reboots your awareness of your tech use and gives you the opportunity to realign its use around your priorities—not the priorities of the tech creators.

It begins with a decision.

Are you living life to the fullest? Can you take a break from your 24/7 tech use for one month this summer to take back control of your life? Of course you can! Once you've made the decision to take a tech detox, tell someone. We all need accountability.

Then think through what you need from your tech for living and working. Be ruthless in eliminating what you don't need.

Do you use a grocery store app for coupons? See if paper coupons are an option—or try shopping instead at a less expensive store for the month to save money.

Do you need to take pictures of your child's birthday party? Dig out that old digital camera, charge the batteries, and take the memory card to the drugstore to get the pictures printed afterward.

Do you need to check your email on your phone from your bed at 10 p.m.? Save it for the workday when you're at your computer.

Make a specific plan for your 29-day detox. What will you delete from your phone, and what will you use? Will you turn on the family TV, and for what reasons? What curfew will you set on your computer?

Enable screen time limits on your device and let your accountability friend set the passcode; use a free trial of website blocking software so you can focus at work.

Your loved ones will notice the difference in your attention and attentiveness. Within your 29 days, if possible, set aside a week for a family or friend group detox and plan out-of-the-ordinary activities to enjoy together.

We can rebel against the shadowy motivations of tech companies that profit from our attention and information. If we do, we'll be freed to focus on things that matter.

And summer is the perfect season to give it a try.

Joshua Becker is an author, a public speaker, and the founder and editor of [Becoming Minimalist](#), where he inspires others to live more by owning less. Visit [BecomingMinimalist.com](#)

Be with this moment fully with relaxed appreciation.



Finding curiosity and love in each moment can let us find true appreciation for our life.

that cause uncertainty and disorientation. We each have typical responses to these situations. Maybe we react in anger or maybe we start being harsh on ourselves. Some people shut down, hide, or seek distraction.

This scenario can play out even more intensely when we are stressed or frustrated during a particularly chaotic period in our lives.

How to Stay Balanced

The key to resolving this pattern can be summarized in a sentence:

ALL PHOTOS BY SHUTTERSTOCK

Our Essential Need for Novelty

Habits and responsibilities are key to a productive and stable life, but without new experiences, we can lose our appreciation for this human experience.



As adults we can become caught by our responsibilities and slowly lose the zest for life

MOLLIE DONGHIA

Have you ever wondered why "out of the ordinary" days stick with you the most? Maybe it was the day you met a lifelong friend, the moment you set your eyes on a beautiful landscape in a new country, or the birth of a child.

When we enjoy novel experiences such as these, research shows that our brains get a rush of dopamine, which lights up our pleasure center and makes us feel happy.

It's also true that humans thrive on predictable routines. Habit formation is key to maintaining long-term physical and mental health.

Now that I've experienced the highlights of my college years, a decade of marriage, and the joys of having children, I realize that it's habits and not novelty that lay the foundation of a good life.

But a life that's all structure and routine without enough wonder and novelty isn't complete, either. It's by maintaining our childlike passion into adulthood that we can experience the fullest life possible.

So, knowing that both healthy habits and novelty are key elements to a thriving life, how do we balance the two? How do we have maturity and focus, while still allowing for novelty-seeking experiences that add zest to life?

The Struggle of Balancing Maturity and Novelty

Our need for excitement and novelty is at its highest when we're children and ado-

lescents. Researchers found that between the ages of 20 and 60, the desire for novelty drops by about half.

When you reach adulthood, long days of productivity demand most of your time. Hobbies you once enjoyed are seldom done. There's less free time to be creative and explore new ideas.

Our culture praises productivity and effectiveness. We work hard and reap the benefits.

Curiosity and daydreaming about new ideas can also be seen as irresponsible, because they may cause you to veer off the path of immediate productivity.

Personally, I've worked full-time in a public school and now stay home to raise and homeschool my children. Both are jobs that demand focused energy and leave little time for pursuing personal creative outlets.

But when I'm solely focused on productivity and checking everything off my to-do list, I lose sight of what brings the most enjoyment to my days. Allowing time for curiosity and creativity encourages me to stay motivated to do the hard work that the season brings.

I believe the key here is to not let the pendulum swing too far in either direction, but have a healthy balance of focused work and creative exploration.

For me, that means balancing productive, task-driven work with activities that are immediately rewarding, such as allowing more time for adventures with my kids, reading a good book just for fun, or allowing myself to be creative in the kitchen.

When the Balance Is Off

Maturity and novelty both play important roles in our well-being. When life is all about being productive and following routines, we can become robotic and lose the zest in life that motivates and excites us.

Ways to Add Novelty and Passion to Your Life

Many adults, even if they still struggle with it, know the importance of developing habits and adding structure to their days. It's more common for me to come across adults who aren't carving out enough space to add the novelty that came so much more easily in the first two decades of life. If that resonates with you, here are some tips that have been useful to me:

Start by turning off your screens.

Screens can be that hit of dopamine our brains desire, but usually don't

fulfill us long-term.

Explore a new area. One of our favorite things to do for a day trip or vacation is to explore a new area. Familiar sights are comforting and enjoyable, but consider traveling to a new city or city that you've never been to.

Try a new food. Our taste buds become accustomed to the same foods because we eat what we enjoy. Consider branching out and trying a new ethnicity of cuisine. Find a restaurant in your town or explore

recipes online. This is one of my favorite ways to add variety to my diet.

Allow yourself to reminisce. Reminiscing on the past is healthy when we can mentally relive nostalgic experiences. Look back through old photo books, tell your children a story about when you were their age, or allow yourself to daydream back through the decades.

Spend time with your children or grandchildren. Children bring innocent

But when life is all about novelty-seeking experiences, there's often no clear structure or direction.

If we're not careful, we can end up too far on one end of the spectrum, leading to an unbalanced life.

On the one end, a neophilic is someone who craves novelty. A healthy dose of novelty and curiosity is great for our well-being, but too much can lead to dependency. Gambling, social media use, and especially drugs and alcohol are examples of novelty-seeking that can easily become habit-forming.

At the other end, where life is all about structure and routine, our productivity mindset can be hard to break free from. We can become creatures of habit, where life may lose its luster and days become filled with the same old routines—causing a mundane outlook on life.

The good life is when we can combine mature focus with opportunities to pursue novelty.

Finding a Healthy Balance

In order to live a flourishing life filled with passion and focus, you need to find a balance between novelty and maturity. Each person will have to find their own place on the spectrum.

Take some time to think about the season you're in. Do you have a tendency to work too much and be restricted by your daily routine? Do you gravitate toward creative pursuits, but then lack the structure of getting things done?

Whatever this looks like for you, aim to find a balance by allowing time for mature focus as well as enjoyable experiences that add zest to life.

Mollie (and her husband, Mike) 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.



It's by maintaining our childlike passion into adulthood that we can experience the fullest life possible.

fun with them wherever they go. Get down on their level, play a game, splash in a nearby creek, go on a nature walk, and observe everything that intrigues them. A personal favorite of ours is to gather all the pillows and blankets and build a giant fort.

Take a long, slow walk. Exercising and strenuous walking is great, but when we slow down and walk at a more gentele pace, we're more likely to notice our surroundings. Take a leisurely walk in the woods. Listen to the sounds. Smell the air.

WISE HABITS

Finding Balance in the Chaos

Life is full of uncertainty and hardship, but we can train to deal with it

LEO BABAUTA

When we're hit with uncertainty either suddenly or in large amounts, it can throw us off. We can get frustrated, overwhelmed, stressed, and discouraged.

This is normal and there's nothing wrong with it. However, it's my belief that we can train ourselves to stay more balanced when things get chaotic, stay level-headed and calm, which allows us to become an oasis of sanity that others can rely on.

Let's talk about how to train ourselves to stay more in balance when things get chaotic.

What Throws Us Off

When we get thrown off, it's like the rug being

pulled out from under us—it feels disconcerting, disorienting, and uncomfortable.

At the core of this rug-pulling is uncertainty. This uncomfortable, disorienting feeling can arise when:

- Someone criticizes us
- Someone acts in a way that we don't like
- We have a lot to do and we aren't sure if we can do it all
- Things aren't going the way we hoped
- We don't succeed at something
- We're struggling with something
- And so on

Basically, all the things that frustrate, overwhelm, stress, and discourage us are things

Relaxed appreciation is a willingness to be okay with all experiences, no matter how pleasant or unpleasant.

often, and put it on my phone lockscreen, and have a couple reminders pop up.

- No matter what is going on, see if you can find a moment of relaxed appreciation and being with the experience fully.
- When you feel some kind of emotion, be with that fully, and see if you can bring relaxed appreciation.
- When you get thrown off of this practice, be fully with the result of that.
- Do a 2-minute review at the end of each day to see how it went. This will deepen your learning and help you remember to practice the next day.

That's the training. What would it be like for you, to be more balanced when things get uncertain, chaotic, and messy?

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

Can Gardening Make You Happier?

The answer is a blooming 'yes' and there are great reasons why

LYNN JAFFEE

Years ago when we had a big yard, thumbing through gardening catalogs was one way I got through the long Minnesota winters. I dreamed about what I'd plant when the weather warmed up and the ground thawed. I'd look at unusual plants, early bloomers, late bloomers, heirloom tomatoes, and whatever else caught my attention in a given season.

One year, I decided that we needed a raspberry patch in the yard. I couldn't imagine anything better than walking out the back door and picking my own fresh raspberries, still warm from the sun. During the winter, I poured over several gardening catalogs looking for just the right variety of bush that would yield the sweetest berries and grow quickly. After a great deal of deliberation, I placed my order for two bushes that seemed to fit the bill perfectly.

When my "bushes" arrived, they came in the form of two sticks about 18 inches long with a tangle of roots at one end. In my disappointment, I carefully planted them and resigned myself to having to wait a year or two before I'd be picking any raspberries.

I watered and carefully tended these sticks for a few weeks, waiting for the first leaves to bud out. And then one day, I looked out my kitchen window to watch my two sons playing in the yard, running and tumbling like puppy dogs. They were chasing each other and having a sword fight with what I realized were my two soon-to-be raspberry bushes!

We never did get raspberries right off the bush, but my husband and I continue to garden in a community plot shared with another couple. Over the years, our community garden has been the source of all kinds of greens, bushels of tomatoes, bell and hot peppers, eggplant, onions, and even tomatillos. Last year, we added potatoes and leeks to our list.

Gardening is a lot of work, but it's also incredibly satisfying on a number of levels. It's also good for both your physical and mental health. Clearly, growing your own produce can increase your access to nutritious food, but it's also great exercise and helps build

muscle strength. Scientists also report that gardening can decrease your risk for dementia, help you sleep better, and getting outside can increase your body's levels of vitamin D, the sunshine vitamin.

Growing your own food can also boost your emotional health and happiness. In a recent study of 370 home gardeners, Princeton researchers reported that participants who grew their own produce reported higher levels of well-being than those who grew flowers and ornamental plants. Furthermore, the researchers found that out of 15 activities studied, only home gardening was associated with higher emotional benefits for women and people with low incomes compared to men and participants with medium or high incomes.

How is it possible that digging in the dirt, getting sweaty, and taxing your lower back in the garden can make you happier? While the answer may be different for each gardener, there are a number of possibilities.

Gardening removes you from everyday distractions and stressors; it's a kind of getaway.

It puts you in touch with nature. A great deal of research exists on the physical and mental health benefits of walking in wooded areas or parks. A garden is also a kind of green space in which you mark the seasons through plants. From the early lettuces and other greens in the spring to the cucumbers and tomatoes that are ripe mid-summer and to the squash, potatoes, and Brussels sprouts that come late in the season, your garden has its own timetable.

Gardening can be an exercise in mindfulness. It takes a certain amount of focus to plant and weed a garden. I think of weeding as a cross between meditating and cleaning out my closet, in which I need to mindfully sift and sort through what to keep and what to let go.

There's also a sense of responsibility for your plants as you watch them grow. As a gardener, your care can make the difference between your plants thriving and dying—and how much food your garden yields.

And digging in the dirt can actually make you happier. That's because coming into contact with something called the myco-



JACOB LUND/SHUTTERSTOCK

Gardening is life-affirming and brings us in direct contact with the magic of creation. No wonder researchers are discovering it also makes us feel good.

Gardening is a lot of work, but it's also incredibly satisfying on a number of levels.

bacterium in the soil actually increases the circulation of the feel-good neurotransmitter serotonin in your brain. In addition, contact with the soil can help strengthen your immune system.

A huge part of gardening is about the food. There's nothing better than going to the garden, picking the ingredients for dinner, prepping, and sitting down to eat what we've grown. Almost better is to pull out some of last year's pesto from the freezer or open a jar of last summer's heirloom tomatoes in January or February.

The bottom line is that gardening can be hard work, but it's good for your health and can actually make you happier. Whether you grow some herbs or lettuce in pots on your back deck, tuck a couple of tomato plants in among your flowering plants, or turn a chunk of your lawn into a full-blown garden, growing your own food is worth it!

Lynn Jaffee is a licensed acupuncturist and the author of "Simple Steps: The Chinese Way to Better Health." This article was originally published on AcupunctureTwinCities.com



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