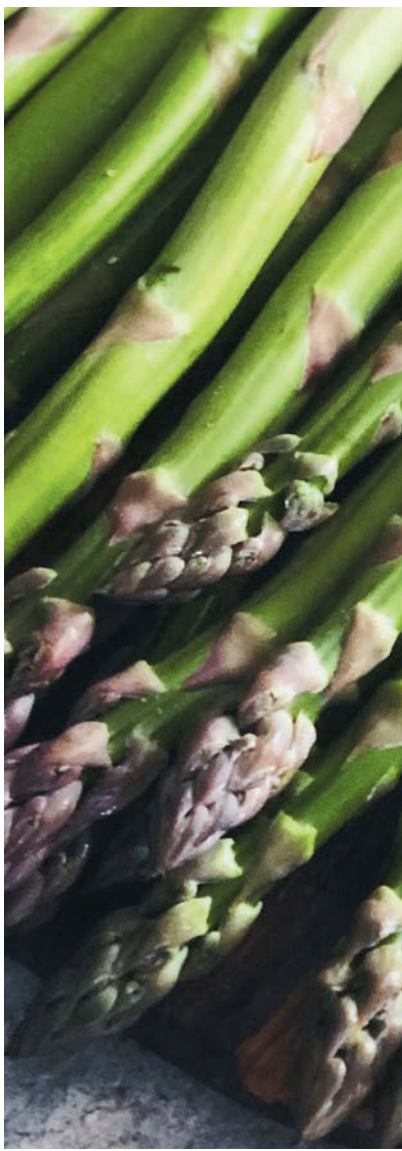


THE EPOCH TIMES

MIND &

BODY

ALL PHOTOS BY UNSPLASH



▲ A diet with foods rich in vitamin B3 (niacin)—including mushrooms, chicken, asparagus, and salmon—will help maintain healthy levels of this important vitamin.

Niacin: The Powerhouse Vitamin You're Not Hearing About

Inexpensive doses help this B vitamin take on kidney disease, heart disease, alcoholism, AIDS, diabetes, COVID-19, and more—without side effects

By Huey Freeman

Researchers and physicians have made astonishing claims for decades on the effectiveness of niacin, a relatively unknown vitamin, to prevent and cure a wide array of diseases.

In the recently released second edition of “Niacin: The Real Story,” Dr. Andrew Saul wrote that orthomolecular physicians have found success in preventing cardiovascular disease, reversing arthritis, helping to prevent Alzheimer’s disease, and treating a host of mental

illnesses with this B vitamin. Dr. Saul is one of the principal authors of the book. The late Dr. Abram Hoffer, a psychiatrist who treated thousands of patients with niacin, is listed as the leading author.

COVID-19 and Kidney Disease

In a study published in *Kidney360* in late 2020, niacin, also known as vitamin B3, was found to reduce mortality in COVID-19 patients suffering from acute kidney injury. Patients who were given daily doses of 1,000 milligrams of niacinamide, a form of niacin, had a 25 percent lower death rate. This COVID-

related illness had no known therapy.

Doctors in India observed that niacinamide supplements reduced the recovery time of COVID-19 patients by nearly 30 percent when compared to those receiving only standard care.

Dr. Mukul Gharote, an oncologist, wrote in April 2021 that there was a need to boost innate immunity to prevent viral transmission.

“If we see epidemiology of second wave of COVID-19 in India, it has mainly affected state of Maharashtra, which is

Continued on Page 3

USDA Researchers Spark Furor With ‘91 Percent Ultra-Processed Foods’ Diet

Food researchers allege study misleads the public about processed foods in the interest of ultra-processed food makers

By Sheramy Tsai

A government-endorsed study that asserts a diet heavy in ultra-processed foods can remain balanced and nutritious has elicited sharp criticism among nutrition researchers who allege it confuses the public about one of the major health issues of our time: ultra-processed foods.

In a novel stance, scientists at the Agricultural Research Service’s Grand Forks

Human Nutrition Research Center argue that ultra-processed foods can make up to 91 percent of a balanced diet. The preliminary study by the U.S. Department of Agriculture (USDA) agency contends that a diet predominantly comprising ultra-processed foods can score highly on diet quality and meet most macro and micronutrient requirements.

Julie Hess, an ARS research nutritionist and the study’s guiding force, encourages a shift in perspective—prioritizing food’s nutritional content over its processing level. This approach

suggests that ultra-processed foods, which have traditionally been maligned in nutritional debates, can contribute significantly to a balanced diet.

The study is further criticized for its alleged mischaracterization of ultra-processed foods.

In the study, scientists leveraged the widely used NOVA scale, first introduced in 2009, to classify foods by the degree of processing. As the dominant system in nutrition science, the NOVA classification system categorizes food based on the nature, extent, and purpose of its industrial processing.

Continued on Page 8

Ultra-processed foods are linked to obesity, diabetes, dementia, cancer, and more.



STUDIO4/GETTY IMAGES

Debunking THE DOGMA ABOUT FAT

PART 5 'BAD' CHOLESTEROL MAY NOT BE SO BAD

Doctors say there are better alternatives to LDL cholesterol tests

In this series, we break down the actual health effects of vegetable oils and whether they're a better alternative to saturated fats. Follow this series to find out whether what you're using to cook with is really the best option.



Previous Parts:
TheEpochTimes.com

By Marina Zhang

For decades, low-density lipoprotein (LDL) cholesterol was one of the most critical indicators that doctors measured for heart disease. Now, doctors and researchers are challenging whether LDL cholesterol, also known as "bad cholesterol," is really as bad as we once feared. Research shows that measuring LDL cholesterol doesn't always effectively assess a person's cardiovascular risk and that other tests may be more useful.

Low-Density Lipoproteins Versus LDL Cholesterol

Many people with normal LDL cholesterol levels may experience heart attacks, cardiovascular research scientist James DiNicolantonio told The Epoch Times via email. The number of LDL particles, rather than LDL cholesterol, may be a more relevant risk factor.

Studies have shown that LDL cholesterol levels predict higher cardiovascular risk 40 percent of the time, while apolipoprotein B (apoB) concentration, the summation of all LDL particles and their precursors, is associated with elevated risk 70 percent of the time.

Other studies comparing LDL cholesterol levels against cholesterol levels in LDL and its precursors, apoB number, and LDL particle number, also found that the latter two tend to be stronger predictors of risk, while LDL cholesterol is the weakest.

So what's the difference between LDL particles and LDL cholesterol?

An LDL particle is a type of lipoprotein made by the liver. Its primary function is to deliver triglycerides from the liver to other cells in the body. Transporting cholesterol is more akin to an LDL's side hustle. The cholesterol that an LDL transports is called LDL cholesterol.

High-density lipoprotein (HDL) and LDL cholesterol contain the same cholesterol; their carriers are what differ. LDL cholesterol can also leak into blood vessels, causing atherosclerosis, thereby earning its "bad" reputation.

On the other hand, HDL particles can venture into atherosclerotic plaques to absorb the cholesterol trapped inside, preventing further plaque formation and helping to prevent heart disease. Hence, HDL cholesterol is considered "good."

Therefore, nutritionist Jonny Bowden says labeling HDL and LDL cholesterol as good and bad cholesterol is wrong.

Mr. Bowden, who co-authored the bestselling book "The Great Cholesterol Myth," compared measuring the number of LDL particles to counting the number of passengers traveling in cars on a road. We know that more cars mean more congestion and traffic accidents, but more passengers doesn't necessarily indicate this. Conversely, traffic could still be congested even if passenger numbers are low or average.

"My LDL [cholesterol] was like 100, maybe 110 mg/dL; very, very close to ideal," Mr. Bowden said. "Then I got the particle tests, and they showed an entirely different picture."

The test showed that he carried

many small, dense LDL particles in his blood and was at high risk for cardiovascular events.

2 Types of LDL, 1 Is More Harmful

There are two types of LDL particles: large and buoyant, and small and dense.

The small and dense LDLs are much more atherogenic (contributive to atherosclerosis), whereas the large, buoyant LDLs are less so. These two types of LDLs can be measured through advanced lipid testing.

About 80 percent of total LDL cholesterol level comprises the more harmless large, buoyant LDLs, with atherogenic small, dense LDL making up the rest.

Interestingly, fats increase large, buoyant LDLs and decrease small, dense LDLs, whereas refined carbohydrates increase small, dense LDLs. Professor Erik Froyen from California State Polytechnic University, who has a doctorate in nutritional biology and whose research investigates mechanisms by which fatty acids impact cancer and cardiovascular disease risk factors, has also demonstrated this in his work.

An LDL particle is a type of lipoprotein made by the liver.

Some research suggests that intake of refined carbohydrates is more relevant than saturated fat in causing coronary heart disease.

Mr. Bowden compares large, buoyant LDLs with large volleyballs that float along in the water, moving with the tide, while small, dense LDLs are like small golf balls that get stuck between rocks, where they start oxidizing and accumulating to form atherosclerotic plaques.

Individuals with more large, buoyant LDLs are said to exhibit a pattern A type of cholesterol profile, and these people are at low risk of atherosclerosis.

On the other hand, those with more small, dense LDLs exhibit a pattern B cholesterol profile and are at risk of atherosclerosis. Their markers for metabolic disease risks may also be elevated.

Small, dense LDLs carry less cholesterol than large, buoyant LDLs, so a person can have a normal LDL cholesterol level but a pattern B cholesterol profile.

However, lipidologist professor Carol Kirkpatrick, head of the Wellness Center at Idaho State University, highlighted that for most people, overall

LDL particle number is more relevant than LDL size.

"What we know now is that, yes, [small dense LDLs] may be important, but it really ends up being a red flag for people who have metabolic dysfunction," Ms. Kirkpatrick, who is also a registered dietitian nutritionist, told The Epoch Times.

Some studies have found that large LDLs have a neutral effect on atherosclerosis, though other scientists disagree.

"We know that statins, for instance, lower cardiovascular risk, and statins preferentially reduce larger LDL particles," said professor Kevin Maki of Indiana University, whose interest is in preventing and managing cardiovascular disease.

However, the statin and LDL link has also been challenged.

"It's really unclear if the benefit of statins is because it lowers LDL," cardiologist Dr. Robert Dubroff told The Epoch Times. "There are other drugs that can lower LDL, and many of them have been tested in well-conducted randomized trials and shown no benefit."

Dr. Dubroff indicated that there are interventions that lower cardiovascular risk without lowering LDL.

Coronary Heart Disease: A Multifactorial Disease

Cardiovascular disease can be caused by various factors unrelated to LDL particles and LDL cholesterol.

Age is the most significant risk factor for cardiovascular disease, Mr. Maki said. The same is the case for one's blood vessels and the blood vessels' inner linings as he or she ages. Damage to the lining can result in inflammation, which raises LDL particle levels and may precipitate atherosclerosis.

Inflammation is also recognized as a risk factor, encouraging plaque formation and elevating LDLs in the bloodstream.

Insulin resistance is also increasingly recognized as a major contributor. It strongly correlates with Type 2 diabetes, which doubles the risk of death from heart disease or stroke.

Professor Benjamin Bikman from Brigham Young University told The Epoch Times that he sees two sides to insulin resistance:

hyperinsulinemia, meaning high blood insulin, and actual insulin resistance, where the body no longer sufficiently responds to insulin.

Hyperinsulinemia encourages the formation of small, dense LDLs rather than large, buoyant ones. Insulin also increases blood pressure and encourages endothelial growth inside blood vessels, both related to atherosclerosis.

Dr. Dubroff said a patient who suffered multiple cardiovascular events was transferred to him a few years ago. The patient underwent coronary artery bypass three times and had been treated aggressively with statin medi-

cations, but his cardiovascular events continued.

Dr. Dubroff noticed that his patient's blood sugar was borderline prediabetic and that he was overweight and had high blood triglycerides and low HDL. However, none of these risk factors were addressed by previous doctors.

He told his patient that the correct way forward was to improve his diet, lose weight, and exercise more.

Dr. Dubroff followed this patient for an additional 10 years.

"He never had any additional problems, even though his cholesterol level did not change," Dr. Dubroff said.

Regarding tracing the source of one's heart disease, Mr. Maki said: "I would say it's not this or that, it's this and that. LDL cholesterol is a factor; particle concentration is a factor; insulin resistance is a factor."



Overall improvements in diet and lifestyle may be more effective in treating heart disease than focusing solely on cholesterol levels.

Addressing all risk factors instead of one will enable us to be the "most successful at reducing cardiovascular risks," he said.

Better or Add-Value Tests

The advanced lipid test can better identify high-risk people with normal LDL cholesterol profiles. The test usually looks at LDL particle numbers or apoB numbers, which provide the total number of a person's non-HDL lipoprotein particles.

Non-HDL particles include VLDL, IDL, and LDL particles. VLDL and IDL are precursors to LDL particles, so a high non-HDL particle number suggests high LDL particles.

However, advanced lipid testing usually isn't covered by insurance. Therefore, health professionals sometimes offer alternative markers for examination.

Mr. Maki said that if he could only pick one thing to examine, he would choose non-HDL cholesterol, colloquially known as the "poor man's apoB."

This test is covered by insurance and looks at all the cholesterol carried in the non-HDL lipoproteins.

While it provides a weaker predictive value than apoB, it can give a general indication of whether more particles are traveling in the bloodstream.

Mr. Bowden and Mr. Bikan suggested the triglyceride-to-HDL ratio to calculate insulin resistance.

When a person's insulin levels are

The advanced lipid test can better identify high-risk people with normal LDL cholesterol profiles.

high, it encourages the destruction of HDL particles while encouraging blood triglyceride production. This leads to more LDL particles, especially small, dense, atherogenic LDL particles in the blood.

Markers for inflammation may also be suggestive of atherosclerosis. Inflammation can cause C-reactive protein (CRP) levels to become elevated. CRP can enter blood vessels and create an atherogenic environment.

This concludes this series.



Continued from Page 1

contributing almost 50% of the active case load of whole India. Main staple food of Maharashtra is Jowar (sorghum). Jowar has excess leucine3, which inhibits conversion of tryptophan to niacin leading to niacin deficiency, known to cause pellagra," Dr. Gharote wrote.

He recommended niacinamide as a supportive treatment for COVID-19 and to help prevent transmission.

Dr. Todd Penberthy, author of the chapter on COVID-19 in the niacin book, said he has been obsessed with niacin and its healing properties for 23 years.

"There is research that shows that niacin reverses chronic kidney disease," Dr. Penberthy, who has his doctorate in biochemistry, told The Epoch Times. "This doesn't usually happen with other current approaches."

Niacin is converted into nicotinamide adenine dinucleotide (NAD) in the body. NAD is a coenzyme found in every living cell, which works with enzymes to enable chemical reactions to help produce energy.

Viral infectious diseases such as COVID-19 stimulate an immune response that depletes NAD in infected cells and is linked to severe cases of infection.

"You can boost your NAD with high doses of niacin," Dr. Penberthy said. "The cell will die in 30 seconds without NAD. There are distinct pathways that deplete your NAD, and then the cells die. NAD is required for over 400 gene functions."

Diabetes and Heart Disease

NAD is required for more than 400 gene functions, according to Dr. Penberthy. The vitamin's effects can change the course of some of today's most prevalent diseases. For people concerned about diabetes or heart disease, it could be an important supplement, he suggested.

"It increases their insulin sensitivity and decreases their risk of cardiovascular disease, which is the No. 1 cause of death for diabetics. Niacin has an incredible safety record. I have no concern about adverse events," he said.

Niacin has been studied for more than 50 years, according to Dr. Penberthy, and many clinical trials have focused

on cardiovascular disease, the most common cause of death.

"Niacin is unparalleled in its ability to safely reduce cardiovascular disease risk," he said.

Major Side Effect Is Longer Life

Mary MacIsaac, a resident of Saskatchewan, Canada, died in 2006 at the age of 112. The second oldest Canadian resident at the time, she skied cross-country and rode horses until she was 110 and played the piano up until her death.

Ms. MacIsaac, who had a clear mind until she died, gave credit for her longevity to niacin, which she took for her final 40 years. Dr. Hoffer wrote that he told all his patients—including Ms. MacIsaac—that they would feel better and live longer if they took niacin.

It's largely believed that proper nutrition and vitamins promote health, but the role of niacin in promoting longevity isn't widely known or accepted. Niacin inhibits the depositing of plaque in the arteries, protecting the heart and brain. Niacin proponents say the vitamin has the best record of lowering cholesterol levels, triglycerides, and lipoprotein (a), as well as elevating the levels of high-density lipoprotein (HDL), the preferred cholesterol. Only niacin increases HDL significantly, according to Dr. Saul.

Niacin contains anti-aging properties that work on the cellular level. Various studies link cell death to the depletion of NAD, which is produced by niacin. Because many deaths are the result of damage to neurons and blood vessels, the preventative of these events could be classified as an anti-aging substance.

Alcoholism

There are few conditions known to shorten life spans as much as alcoholism. Alcoholics Anonymous (AA) co-founder Bill Wilson met Dr. Hoffer and was one of the first alcoholics to be treated with niacin.

Mr. Wilson promoted the philosophy that alcoholics could recover with treatment that was spiritual, mental, and medical. Dr. Hoffer, who had been treating mental patients with niacin, met Mr. Wilson when he was suffering from depression and anxiety after taking his last drink. According to Dr. Hoffer, Mr. Wilson began taking niacin three times per day and "was normal in two weeks."

Mr. Wilson then persuaded 30 of his AA friends to try niacin. Twenty of them became well within a couple of months. Those results were shared with AA doctors, who agreed that niacin was an effective treatment. There was opposition to the therapeutic use of the vitamin by the AA international headquarters, but Mr. Wilson distributed literature to AA physicians nonetheless, including a booklet titled "The Vitamin B-3 Therapy," published in February 1968. Mr. Wilson died three years later at the age of 75.

Dr. Hoffer, widely recognized as the greatest authority on the effectiveness of niacin, wrote that the therapeutic use of niacin would be much further advanced if Mr. Wilson hadn't died so soon after he began spreading the word about the vitamin.

Drs. Hoffer and Saul wrote a book, published in 2008, titled "The Vitamin Cure for Alcoholism," which included his relationship with the pioneer of 12-step programs.

In "Niacin: The Real Story," Drs. Saul and Hoffer noted that Mr. Wilson realized that "niacin helps addicts recover from the anxiety, fatigue, depression, and other discomforts they usually suffer."

"This, in our opinion, is the basis for their use of alcohol or drugs," they wrote.

Dr. Hoffer died in 2009 at the age of 91.

Leaky Gut

Dr. Hoffer was known as a supporter of the 12-step program concept for addicts. He wrote that his orthomolecular, nutrition-based program works best alongside the steps of AA. Many alcoholics suffer from gastrointestinal permeability, commonly known as leaky gut. Dr. Hoffer prescribed 100 milligrams daily of niacin, along with abstinence from alcohol and a healthy diet, to heal the gastrointestinal system.

Researchers at the University of São Paulo in Brazil set out in the 2000s to determine the effect of niacin supplementation on intesti-

nal permeability and oxidative stress on patients with alcoholic pellagra, a disease stemming from a lack of niacin in the diet.

Ten patients with pellagra were studied before and after treatment with niacin. After 27 days of treatment, patients showed a significant decrease in permeability. The researchers concluded that pellagra patients could recover to normal gastrointestinal values by treatment with niacin, as well as alcohol abstinence and a balanced diet.

Mental and Physical Health

An epidemic of pellagra—a disease characterized by dementia, diarrhea, dermatitis, and death—ravaged the United States in the 1930s and early '40s. It was discovered that the root cause of the disease was B3 deficiency. There were about 3 million cases, with about 100,000 reported deaths. This disease especially targeted impoverished Southerners, who died at a higher rate than residents of any other region. After the federal government mandated adding niacinamide to flour, the pellagra epidemic ended.

In the early 1950s, Dr. Hoffer identified the psychosis associated with mental illnesses such as schizophrenia as identical to the psychosis diagnosed in pellagra patients. He conducted a series of double-blind, placebo-controlled studies on nonchronic patients. His tests concluded that the administration of niacin doubled the recovery rate of patients, 75 percent to 35 percent, compared to those who were given placebos. He wrote that once you see schizophrenic patients become normal, "it becomes unforgettable."

HIV and AIDS

The idea that mental patients could be effectively treated by vitamins would come as news to many in the mental health field. Those treating patients infected with viral diseases might also be surprised to learn that B vitamins have been effective in aiding the recovery of patients with HIV and AIDS. Niacin deficiency is a hindrance to recovery from serious viral infection.

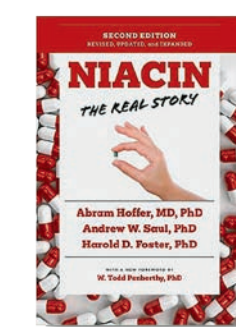
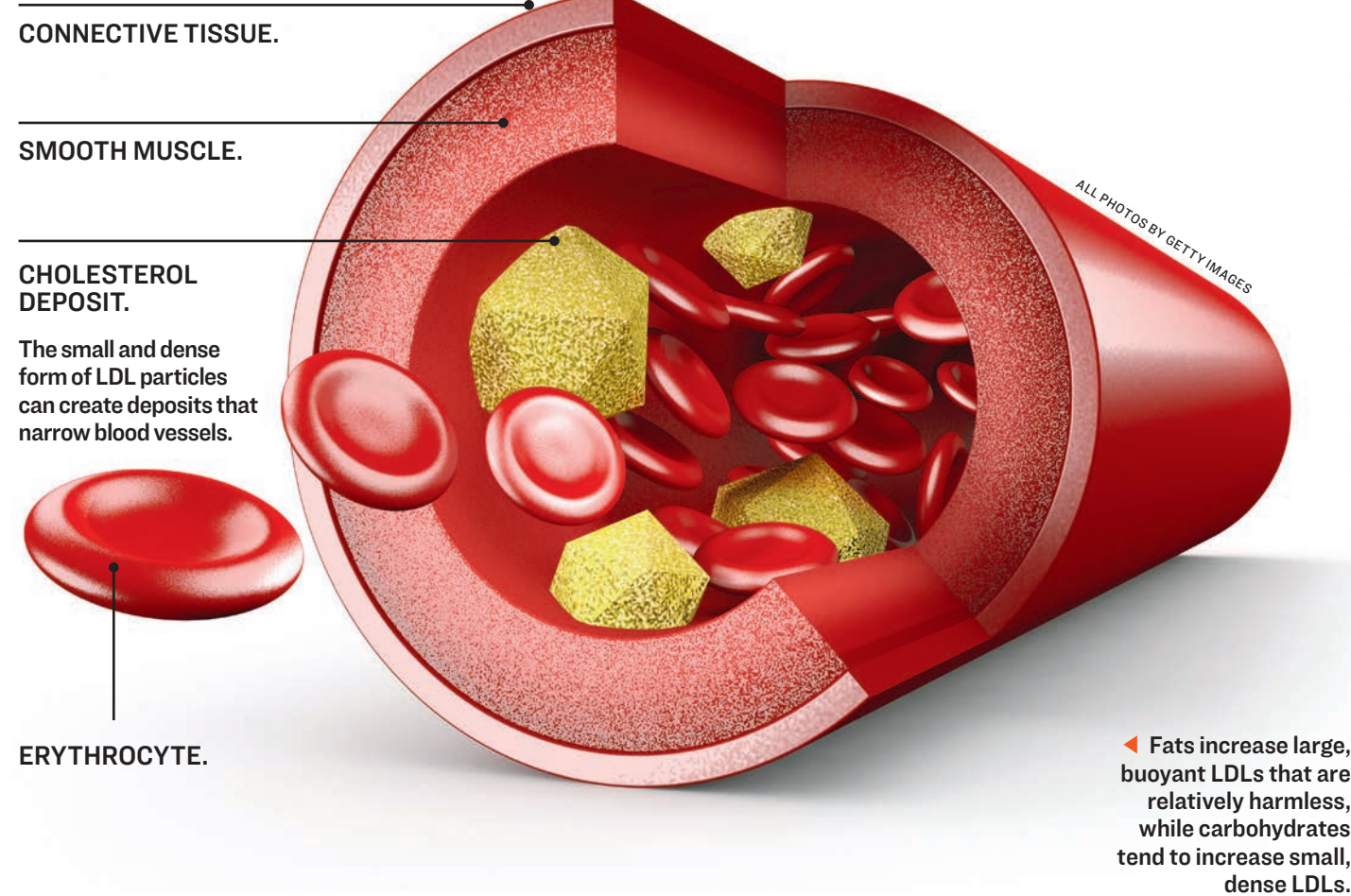
A study of 281 HIV-positive men conducted in 1993 in the Washington area shows that those who took large quantities of multiple vitamins had a relative hazard of their HIV progressing to AIDS of 52 percent compared to those who didn't take supplements.

The Johns Hopkins University researchers reported that niacin was associated with a significantly decreased progression rate to AIDS. In his comments on the study, Dr. Penberthy said this important seven-year study received little publicity. He said that was odd, because a 50 percent reduction in AIDS cases, just from vitamins, should have been front-page news.

Dr. Penberthy, who penned the chapter that included AIDS, would like to see more research on the benefits of niacin.

"Every single clinical trial that has used niacin is yielding positive results for one indication after another," he said. "It is unfortunate it is not being tested for many more conditions, particularly anything with the brain."

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



▲ Niacin: The Real Story (2nd Edition) (2023) by Andrew W. Saul, Abram Hoffer, Harold D. Foster

Over
400
FUNCTIONS

► Niacin is converted into a coenzyme found in every cell that is required for over 400 gene functions.





Easy Exercises to Combat Chronic Pain

PART 8 | RESOLVE CHRONIC FOOT PAIN

Address the 2 common causes of foot pain with 5 easy exercises

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



Previous Parts:
TheEpochTimes.com/Chronic

By Kevin Shelley

Although it's normal for feet to hurt after a long day of standing or walking, it's important to pay attention to chronic pain. Being aware of the source of chronic pain and doing simple exercises can strengthen supporting muscles, often making all the difference.

The Bones of the Foot
The 26 bones of the foot fall into three

groups: the tarsals, metatarsals, and phalanges.

Tarsal Bones
These bones connect the ankle and foot and allow the foot to articulate with the ankle while walking, running, and negotiating uneven terrain. A bone articulation is a joint of two bones. The ankle articulation allows for a variety of movements.

Metatarsal Bones
This group of five tubular bones in the middle of the foot connects the tarsal bones and the phalanges and adds structure and strength to the foot.

Phalanges
These are the small bones in the toes, which are similar to the bones in the fingers. The big toe has two phalanges, while the rest of the toes have three.

Though complex, the design and function of the foot provide exceptional flexibility and balance, Mythili Balasubramaniyan, a doctor of physical therapy and a Parkinson's disease rehabilitation specialist told The Epoch Times.

Common Causes of Chronic Foot Pain
Specific medical conditions, such as diabetes, are closely associated with foot pain, but Ms. Balasubramaniyan explained that functional patterns and muscle weakness are the primary causes of foot pain in healthy feet.

Functional Patterns
Our feet can experience considerable compressive and twisting forces during movement, and overuse can provoke pain. Walking on uneven surfaces with weak foot muscles and tendons can be another cause. The feet must constantly adapt to the environment, which is harder

The design and function of the foot provide exceptional flexibility and balance.

to do when weakness exists. Footwear that doesn't properly support the feet can also lead to pain, especially when one has to stand for a long time.

Muscle weakness
Foot pain can also originate from muscle weakness. A sedentary lifestyle will allow foot muscles and tendons to weaken, potentially leading to painful foot issues. For example, weak plantar flexor muscles can lose their ability to support the ankles and feet during walking and running, leading to painful alignment imbalances.

Thankfully, safe and effective foot exercises that are easy to perform can strengthen foot muscles and tendons, which will prevent pain.

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

NEXT WEEK Move well and often to prevent shoulder pain.

THE MUSCLES OF THE FOOT

Strong foot muscles are essential for mobility and good balance. The muscles that coordinate foot movements fall into two major groups, known as the extrinsic and intrinsic muscles.

The Intrinsic Muscles

These muscles are located inside the foot itself and are responsible for more fine motor movements such as stabilization of the foot and flexion and extension of the toes, and they provide strength to the foot arches.

The Extrinsic Muscles

The extrinsic muscles originate in the lower leg and allow for gross motor movements of the foot, such as walking, by stabilizing the ankle during movement. The extrinsic muscles include the plantar flexors and dorsiflexors.

Dorsiflexors

Foot dorsiflexors allow the foot to flex foot in the "dorsal," or upward, direction—bringing the foot back toward the shin.



Full ankle dorsiflexion is essential for maintaining good posture and for movements such as walking, running, jumping, and squatting.

Tight ankles can force the body to compensate and develop undesirable issues such as plantar fasciitis, inside knee pain, and other painful conditions.

Plantar Flexors

Plantar flexion is the bending of the ankle to point the foot down, such as when:

- Standing on your toes to reach for something high.
- Pressing down on the gas pedal while driving.
- Going "en pointe" while ballet dancing.

The plantar flexor muscles work in conjunction with the hamstring muscles of the upper leg during walking and running.

EXERCISES FOR CHRONIC FOOT PAIN

Ms. Balasubramaniyan highly recommends bodyweight exercises for strengthening since they are safe, effective, and easy to perform, allowing for a great workout without any equipment. The ankle and foot should be considered together because of how they work functionally, and the exercises below are great for strengthening the foot and will also strengthen the entire ankle-foot complex, she said.

1 SITTING ALPHABET

The sitting alphabet exercise is a fantastic way to engage the tendons, ligaments, and muscles of the foot and ankle.

The ankle alphabet provides a great warmup before other exercises.

Step 1: Sit in a chair. Alternately, you can perform this movement while standing and holding on to something for stability.

Step 2: Extend one foot out until your knee is straight, your foot is off the ground, and your toes are pointed.

Step 3: Begin writing the alphabet in the air with your big toe, making the letters about a foot tall.

Complete the alphabet once per set and try two sets. For fun, you can do uppercase and lowercase letters, and can also try writing in cursive for an extra challenge.

Resist trying to use your leg to do all of the movements; instead, try using only your foot for as much of the movement as possible. Don't bounce or rush the movements; take approximately three seconds to write each letter. Try to be accurate with the letters and point your toes during the exercise.

Ms. Balasubramaniyan recommends performing this exercise with careful, exacting movements.



2 STANDING CALF RAISE

The standing calf raise focuses on the plantar flexors on the back of the calf, especially on the gastrocnemius and soleus muscles, which are critical for pushing through the end of leg travel during walking and running.

Step 1: Stand on a flat surface. You can hold on to a chair, table, or counter for stability.

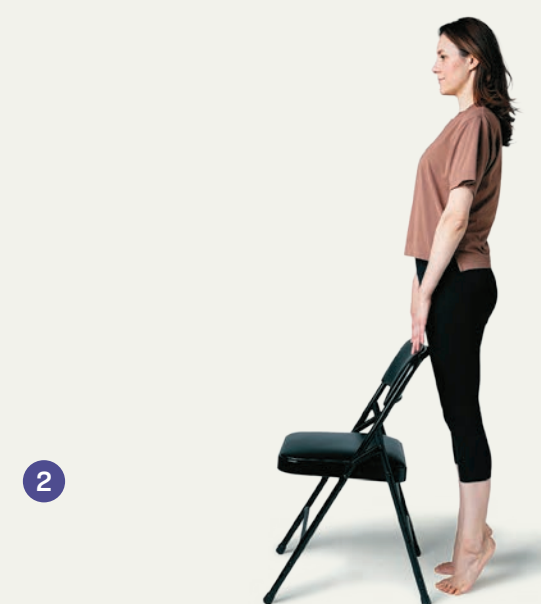
Step 2: Place your feet side-by-side.

Step 3: Slowly move up on your toes as far as you can. Hold for one second and then lower back down.

Complete 10 to 30 repetitions per set, and try doing two sets.

Be sure not to bounce or rush the movements. Pay attention to your body, and don't push into pain or discomfort. Keep your stomach and other core muscles tight during this exercise, and stand as upright as possible.

Move slowly, and concentrate on keeping all of your muscles tight during exercise.



3 SEATED TOE RAISES

Seated toe raises focus on the often neglected dorsiflexor muscles in the front of the leg, especially the tibialis anterior muscles, which allow you to raise your foot during walking and running.

Step 1: Sit in a chair with your back straight.

Step 2: Place your feet side-by-side on the floor.

Step 3: Keeping your heels on the floor, first lift your toes as high as they can go, bringing your feet back as far as possible toward your calves.

Step 4: Lower your feet back to the starting position.

Complete 10 to 30 repetitions per set, and try to do two sets.

Don't bounce or rush the movements. Take one second to move in either direction, and be sure you lift your toes all the way up to get the best workout.

You can make this exercise more challenging by resting the heel of one foot on the toes of the foot being exercised.

This exercise is a great way to enhance muscle balance and maintain strong muscles in the front of the lower leg, according to Ms. Balasubramaniyan.



4 SINGLE-LEG TOWEL STANCE

Instead of targeting a specific muscle, this advanced exercise very effectively targets every structure in the ankle-foot complex, including the toes.

Step 1: Fold a large towel several times—it must accommodate your entire foot—and place it on the floor.

Step 2: Stand in front of a support surface, such as a chair back or counter, and grasp it with both hands.

Step 3: Step onto the towel with one foot, and lift your other foot off the floor.

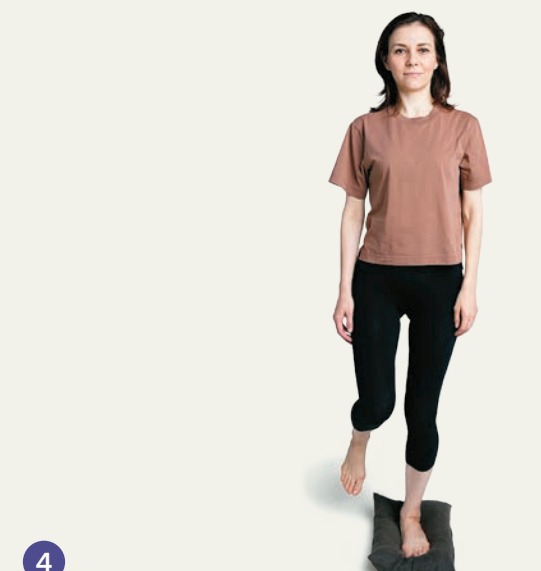
Step 4: Try lifting your hands a few inches off the counter while maintaining your balance.

Step 5: Try standing for 30 seconds, then repeat the exercise with your other foot.

Perform three times with each leg.

Keep your hands close to the stabilizing surface at all times for safety.

This exercise can be quite challenging at first, but it can be mastered with time.



5 TOWEL SLIDES

This exercise focuses heavily on the small foot muscles but also works the ankle muscles.

Step 1: Lay a large towel flat on the floor.

Step 2: Sit in a chair in front of the towel.

Step 3: Put the toes of one of your feet on one end of the towel with your heel on the floor.

Step 4: Keep your heel in one spot on the floor and slide the towel to the left or right with your toes while rotating your foot. Lift your toes and pivot your foot to its starting position and push the towel farther, holding your upper leg as still as you can.

Step 5: Reset the towel once you reach the end, and slide it the other way. The towel will bunch up as you go, but this is expected.

This exercise can be performed on either carpets or floors, but keep in mind that performing the exercise on a carpeted surface will make the exercise harder to perform.

If you do these exercises at least three times a week, your feet will thank you. Strengthening your foot and ankle muscles and tendons can go a long way in helping to ease existing pain while protecting you from future problems.



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

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Bend Don't Break: The Power of Stretching

Research reveals that the humble stretch offers a pathway to physical freedom and mental clarity

By Sheramy Tsai

Stretching, the key to increased flexibility, could be the difference in our senior years between an active life and an inability to tie our own shoes. A growing wellness movement focused on flexibility offers more than physical ability, however; it offers mental agility as well.

Unraveling the Anatomy of a Stretch

An overhead reach into the cupboard, bending to pick up keys, a twist to look at a noise behind you—these seemingly simple movements are underpinned by intricate cooperation among nerves, muscles, and connective tissues such as tendons and ligaments.

Dr. Andrew Huberman, a neuroscientist at Stanford, unpacked the scientific intricacies of stretching on his popular podcast, explaining the nuanced interplay of neural signals and muscle adaptations.

"In stretching, you're not just elongating muscles. You're also extending your nerves, sending key signals to your brain about body movement," Dr. Huberman said.

The process of stretching isn't simple. Specific nerve cells called motor neurons initiate muscle contractions. Sensors

within our muscles measure a stretch's extent. This information is relayed to the spinal cord, triggering an instant response to bring our limbs back within a safe range of motion.

As we stretch, safety mechanisms activate. Sensors connected to the muscle called golgi tendon organs (GTOs) monitor muscle load or strain. Should this strain risk injury, the GTOs stop the motor neurons from triggering further muscle contraction.

That complex system allows the use of the body to its limit safely, and by stretching, we maintain limits that allow us to do what we need to get through each day.

"There are now dozens if not hundreds of studies that show that a dedicated stretching practice can improve limb range of motion," Dr. Huberman said.

Last month, an exhaustive study in the *Journal of Sports and Health Science* analyzed findings from 77 studies to conclude that specific stretch training methods can enhance our range of motion. This evidence strengthens the case for incorporating regular stretching into our daily routines to optimize movement and safeguard our bodies against harm.

The Health Benefits of Stretching

Stretching's positive effects ripple through the entire body, enhancing

cardiovascular health and even potentially playing a role in cancer prevention and treatment.

Research in 2020 found that a 12-week passive stretching routine increased blood flow and overall cardiovascular health, suggesting it could lower the risk of serious heart conditions. A subsequent review in 2021 bolstered this claim, illustrating that consistent passive stretching could reduce heart rate and improve the flexibility of arteries—key markers of heart health.

The study's authors wrote, "Passive stretching has been shown to be an effective means to improve vascular function, with practical implications for its use as a novel non-pharmacological treatment for improving vascular health, reducing the overall cardiovascular risk."

Emerging evidence suggests that a routine of gentle stretches could also help lower inflammation and fibrosis in connective tissue, elements that may affect tumor development. A study published in *Scientific Reports* in 2018 revealed that mice subjected to daily stretching—by being lifted by their tails as they held onto a bar with their front paws—had significantly smaller tumors, indicating a potential role for stretching in cancer prevention and therapy.

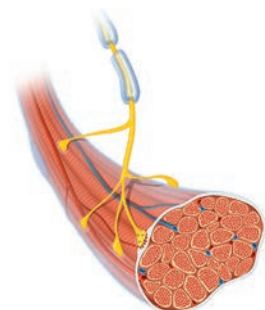
"Our results demonstrate a 52 percent reduction of mammary tumor growth over one month in mice undergoing stretching for 10 minutes once a day without any other form of therapy," the study authors wrote.

Stretch Your Body, Ease Your Mind

The power of stretching extends beyond physical adaptability. It affects emotions, fostering mental serenity and agility.

When we stretch our muscles, the parasympathetic nervous system—the division dedicated to returning the body to a relaxed state—springs into action.

Rather than embarking on a workout with tight, unprepared muscles, it's advisable to incorporate dynamic stretching into your pre-workout routine.



Specific nerve cells called motor neurons initiate muscle contractions.

As people age, their bodies' ability to cool declines, and the elderly often take medication that further impairs this ability.

(often to more than 104 degrees F) because high environmental temperature (typically above 90 degrees F) and humidity (above 70 percent relative humidity) prevent the body from cooling through its normal means of sweating and breathing. As heatstroke develops, the heart beats quickly, the lungs breathe quickly, one feels dizzy and nauseated, the muscles cramp, and one becomes confused, eventually losing consciousness entirely.

Without medical intervention, heatstroke is often fatal. The U.S. Centers for Disease Control and Prevention (CDC) notes that on average, about 658 Americans die each year from heatstroke.

Victims of heat stroke can be of any age, but more often, it's the elderly, particularly those above the age of 70,

A study published in the *Journal of Sports Science & Medicine* in 2020 found that slow, sustained stretches seemed to signal the brain to transition from the usually dominant sympathetic ("fight-or-flight") system to the tranquilizing parasympathetic ("rest-and-digest") system.

This transition comes with benefits, including the release of endorphins such as dopamine and serotonin. These "feel-good" hormones are vital to stabilizing mood and reducing stress.

Other studies confirm the psychological boons of stretching. A randomized controlled trial involving workers at a Spanish logistics company found significant improvements after they incorporated 10-minute post-work stretching sessions over three months.

"The implementation of a short program of stretching exercises in the workplace was effective for reducing levels of anxiety, bodily pain, and exhaustion, and for raising levels of vitality, mental health, general health, and flexibility," the researchers reported in the *Journal of Attention Primaria*.

Another study examined physically inactive young adults, studying the effects of a brief whole-body stretching session on their cognitive function and mood.

After only 10 minutes of stretching, participants experienced reduced tension, anxiety, depression, anger, hostility, fatigue, and confusion. Their energy levels rose, further highlighting the connection between stretching and enhanced mental well-being.

"Acute stretching improved mood states and cognitive performance in physically inactive people," the authors stated in *Perceptual and Motor Skills* in 2019.

These and other studies show that in addition to improving flexibility, stretching helps us bend and flex around life's challenges with greater mental ease and resilience.

The Role of Stretching in Preserving Vitality

While the pursuit of diverse exercise regimens has grown in the United States, the focus on stretching has dimmed, leaving muscles contracted, inflexible, and overworked.

Experts caution that such neglect can make us feel older than we are. "If you look en masse, you look at all of those studies, and you basically find that we start to experience a decrease in flexibility from about age 20 until about age 49 that's pretty dramatic. And then, of course, it will continue after age 49, but basically, it's a 10 percent decrease every 10 years," Dr. Huberman said on his podcast.

The natural elasticity of youth gradually diminishes if not maintained. Regular stretching could, therefore, be a strategy to counter the aging process and pave the way for a longer, more vibrant life.

A testament to this comes from retired Navy Seal and ultra-athlete David Goggins. Having excelled in ultra marathons and triathlons, Goggins is a premier athlete. Yet, despite his access to top-notch training, he credits the simple practice of stretching with transforming his life.

"I'm in the best shape of my life now from stretching out," he told his YouTube audience.

His turnaround is detailed in his book "Can't Hurt Me." In it, Goggins chronicles his journey toward discov-

ering the true value of flexibility.

"Thanks to all that stretching, I'm in better shape at forty-three than I was in my twenties. Back then, I was always sick, wound tight, and stressed out," he recounted.

The Rising Trend of Stretching Gyms and Studios

The familiar sights of yoga studios and CrossFit gyms are being joined by new businesses focused on assisted stretching.

Companies such as Stretch Zone and LYMBYR are redefining stretching from a neglected end-of-workout routine to a headline act. These establishments welcome those seeking an expert touch in their pursuit of flexibility.

These studios hire "stretch therapists" or "flexologists" whose primary role is to assist people in deep stretches that might otherwise be unreachable.

StretchLab, a Californian venture, has grown to more than 300 studios in North America and more than 800 licensed locations globally. StretchLab's success speaks to the burgeoning interest in this fresh fitness category.

However, while many studios train staff members, they might not have the same educational backgrounds as physical therapists, which could affect stretch execution. Customers are advised to verify staff qualifications at these studios.

Crafting an Effective Stretching Routine

Though all types of stretching can increase range of motion, static stretching stands out for its post-workout benefits, according to Dr. Huberman. "If you're aiming to boost your limb range of motion, static stretching seems most effective," he said.

Experts recommend at least five minutes of stretching per week, split over five days, for noticeable improvements in flexibility. Practically, Dr. Huberman suggests three 30-second sets of static stretches, targeting areas such as the hamstrings, five times a week. This balanced weekly routine maximizes the benefits of stretching.

Research favors "micro stretching," defined as 30-40 percent intensity, as more beneficial than merely increasing the stretch intensity. "In your stretching routine, you don't need to push to pain. Regular, gentle stretching leads to long-term flexibility improvements," Dr. Huberman said.

A warm-up before stretching helps prevent injuries and boosts efficacy. Moreover, incorporating various stretching forms, such as PNF and resistance training, allows a tailored protocol that fits individual needs and goals.

At the intersection of science and wellness, the simple act of stretching emerges as an unsung hero. As we delve deeper into its surprising health benefits, it becomes clear: Stretching isn't just about touching our toes—it's about reaching for a higher quality of life.

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

While the pursuit of diverse exercise regimens has grown in the United States, the focus on stretching has dimmed, leaving muscles contracted, inflexible, and overworked.

Static stretches are commonly used for post-workout recovery and have a notable role in alleviating pain and enhancing flexibility.

MASTERING THE ART OF THE STRETCH FOR EVERYDAY FLEXIBILITY

Navigating stretches can be as tricky as deciphering diet trends. With myriad stretching types, it can be hard to know which to use and when. It's wise to begin with an understanding of the various types of stretching.

DYNAMIC STRETCHING

The American Sports and Fitness Association defines dynamic stretching as "stretching by controlled, coordinated movement with a defined range of motion." Rather than embarking on a workout with tight, unprepared muscles, it's advisable to incorporate dynamic stretching into your pre-workout routine.

Common dynamic stretches include arm circles, lunges with a twist, walking heel to toe, and high stepping. These stretches warm the body and prime it for the exercise to follow.



STATIC STRETCHING

In contrast to motion-oriented dynamic stretches, static stretches are all about extending and holding. They aim to lengthen muscles to the limit of their ranges of motion for a set duration. Static stretches are commonly used for post-workout recovery and have a notable role in alleviating pain and enhancing flexibility.

Static stretches include hamstring and Achilles stretches during which the positions are sustained, granting muscles the time and space to relax fully.



PASSIVE STRETCHING

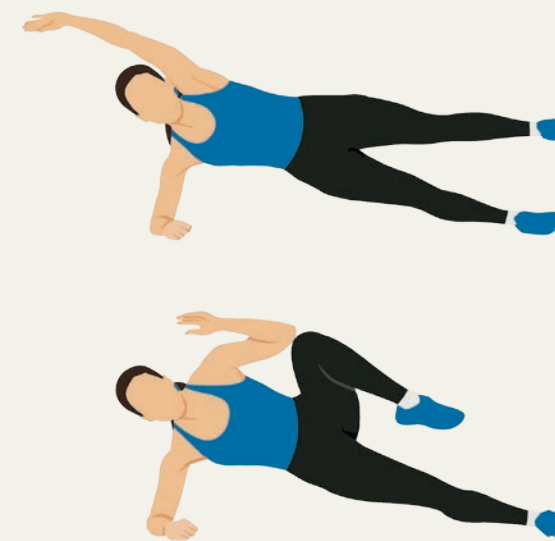
Also known as relaxed stretching, passive stretching can be a key tool for improving balance. Passive stretching involves using another person or a prop, such as a towel, to help with the stretch. An example of a passive stretch is a towel-hamstring stretch.



BALLISTIC STRETCHING

Ballistic stretching leverages the momentum of a moving body or limb to venture beyond its usual range of motion. Think of it as an active warm-up, bouncing into or out of a stretched position, with the stretched muscles acting as a spring that recoils you from the extended state—like repetitively bouncing down to touch your toes.

Ballistic stretching calls for caution, as the risk of injury is ever-present. As a general rule, ballistic stretching is most suitable for those well-versed in high-velocity activities and should be performed under the vigilant eye of an expert.



PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION (PNF) STRETCHING

PNF stretching is a technique that blends passive stretching and isometric contractions to maximize static flexibility. It's useful for gaining flexibility, strength, and improved joint stability. PNF stretching usually requires a partner and should be done when no further physical activity is planned for the day because it manipulates reflexes.



Avoiding Heatstroke

A doctor offers tips on how to stay safe as temperatures soar

By Gabriel Neal

I remember laughing at Wile E. Coyote trying to catch the Road Runner while watching Saturday morning cartoons as a child. I can still see Coyote walking slowly through the sweltering desert—the sun high in the sky—sweating, tongue hanging out, and about to collapse from heat, hunger, and thirst. Then, "Beep! Beep!" The Road Runner would fly past, and the chase was on with a perfectly revived Coyote.

If only fixing heatstroke was that quick and easy.

As a primary care physician who treats patients with heat-related illnesses, I know that heatstroke is certainly no laughing matter. Each summer, a heat wave (or 10) rolls over the United States, precipitating a rash of death and hospitalizations related to what is, in doctor-speak, "severe non-exertional hyperthermia."

Let's stick to calling it heatstroke, and here are some tips on how to prevent this potentially deadly condition.

Heatstroke happens when a person's core body temperature rises too high

As people age, their bodies' ability to cool declines, and the elderly often take medication that further impairs this ability.

(often to more than 104 degrees F) because high environmental temperature (typically above 90 degrees F) and humidity (above 70 percent relative humidity) prevent the body from cooling through its normal means of sweating and breathing. As heatstroke develops, the heart beats quickly, the lungs breathe quickly, one feels dizzy and nauseated, the muscles cramp, and one becomes confused, eventually losing consciousness entirely.

Without medical intervention, heatstroke is often fatal. The U.S. Centers for Disease Control and Prevention (CDC) notes that on average, about 658 Americans die each year from heatstroke.

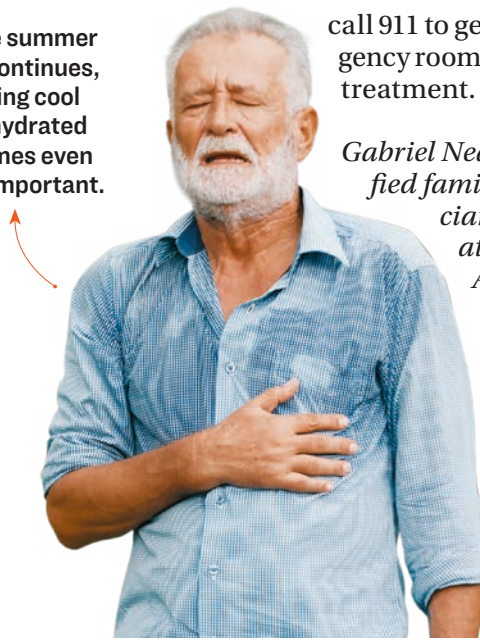
Victims of heat stroke can be of any age, but more often, it's the elderly, particularly those above the age of 70,

who suffer. As people age, their bodies' ability to cool declines, and the elderly often take medication that further impairs this ability. In addition, older people may not be aware of when a dangerous heat wave arrives and may not have working air conditioning in their homes or anyone to check on them. As a physician, I know from experience how the heat of summer and the cold of winter test the lives of the very old.

Other factors that increase the risk of heatstroke are obesity, diabetes, and heart disease.

Heatstroke is preventable—just stay cool and hydrated. Simple, right? But during a heat wave, that's easier said than done, particularly for the poor and elderly. If you encounter someone with the symptoms of heatstroke,

As the summer heat continues, staying cool and hydrated becomes even more important.



call 911 to get them to an emergency room for evaluation and treatment.

Gabriel Neal is a board-certified family medicine physician and a fellow at the American Academy of Family Physicians. He is a clinical associate professor at Texas A&M University. This article is republished from The Conversation under a Creative Commons license.

TIPS TO PREVENT HEATSTROKE

Hydration, rest, and finding a place to cool down are the keys to preventing heatstroke. If you don't have an air-conditioned home or car, steps to take include:

- Wearing light, breathable clothing
- Avoiding time in direct sunlight
- Not exercising during the hot hours of the day

- Spraying yourself with water and sitting in front of a fan
- Taking a cool bath or shower
- Placing a cold pack on your neck or armpit

In a heat wave, please take time to check in with your older neighbors, family, and friends to make sure they have the means to stay cool.

Fans help, not by lowering the air temperature, but by causing air movement over the skin, causing evaporation of sweat, which lowers the body temperature. So fans are useful when there's no air conditioning, but having an air-conditioned space is best.

PREPARING FOR A GOOD END

PART 1 HOW TO AVOID SPIRITUAL ANGUISH IN OUR DYING DAYS

Dying well must include an active effort to find meaning, lest we be left with only fear and distress

In this series, we'll examine ways of making meaning in the face of death, offering tools founded in traditional wisdom and scientific evidence to help our readers find hope in death and life. The art of dying well is really about living well to our final moments.

By Sharleen Lucas

According to palliative care experts, preparing for death can be a profoundly healing journey.

There's a problem with death—it causes despair and suffering. In our modern culture devoid of traditions, death has been dehumanized. We've lost the art of dying well, knowledge passed down from family to family just a few generations ago.

Today, 80 percent of Americans die in medical institutions, such as hospitals or nursing homes, when most hoped to spend their final days at home. When our loved ones die, we leave their bodies in the hands of professionals—nurses, morticians, and coroners—unlike our ancestors, who considered death care to be a sacred honor. Modern medicine has lengthened our lifespan, but some experts say the side effects have been spiritually deadly. We fear death, ignore it, choose overtreatment for incurable illnesses, and find ourselves surprised and unprepared when death comes knocking.

No wonder more people want to rediscover meaning at the end of life.

"We find ourselves in an era of frequent and normalized overtreatment of the very old and very ill. This overtreatment contributes to frailty and debility, which leads to the institutionalization of those unfortunates to lay and wait for death to come," palliative care expert Rebecca Gagne-Henderson wrote in her forthright blog, *The Palliative Provocateur*.

Ms. Gagne-Henderson and many other palliative care experts argue that preparing for one's inevitable death—rather than simply waiting for it—helps clarify what brings meaning to your life now and to your death later. It enables you to face fears and regrets, guiding you to uncover ignored hopes and forgotten dreams. It even opens hope of reconciliation with loved ones before you die.

Preparing for death—even when young—helps you live and die well.

What Is Dying Well?

A good death—a common oxymoron among palliative care teams—is more about living well during your final days than merely addressing physical pain.

"The spiritual side of dying is much more important than the physical side," Ms. Gagne-Henderson told *The Epoch Times*.

After serving dying patients for 27 years, she's well acquainted with death. Ms. Gagne-Henderson is a provocative voice among palliative care experts and is the executive director of the Connecticut Hospice and Palliative Care Organization. "Making meaning by addressing spiritual distress will bring more peace than morphine. You can live with pain if you have meaning," she said, arguing that unresolved spiritual distress at the end of life is vastly more painful than physical anguish.

The term "spiritual" doesn't have to relate to a religion or faith. Spiritual distress includes turmoil such as broken relationships, the fear of death, and leaving behind a loved one or unfinished life work.

Victor Frankl made a similar argument in his classic book, "Man's Search for Meaning." In Nazi prisoner camps, Mr. Frankl developed profound theories from observing which prisoners were determined to survive and which lost their will to live.

He wrote: "A man who becomes conscious of the responsibility he bears toward a human being who affectionately waits for him, or to an unfinished work, will never be able to throw away his life. He knows the 'why' for his existence, and will be able to bear almost any 'how.'"

In terms of end-of-life patients, Ms. Gagne-Henderson calls this a sense of coherence, a concept first coined by Israeli American sociologist Aaron Antonovsky. According to Antonovsky's theory, a sense of coherence is a state of inner peace when one feels his or her life is "comprehensible, manageable, and meaningful." As Ms. Gagne-Henderson explained in her doctoral thesis, without these three components, an end-of-life patient experiences a "devolving sense of coherence," causing suffering to feel only senseless, overwhelming, and hopeless.

"In my opinion, that devolving sense

of coherence is what leads to existential suffering, terminal agitation, delirium, and 'bad deaths.' If we could each face our existential issues and accept our physical mortality—which I call a sweet surrender—that's how you die well. And, if you don't do those things, I can almost guarantee that you're not going to die well," she said.

Finding Meaning: An Individual Journey

Dr. Dan Morhaim, an emergency and internal medicine physician with more than 40 years of front-line clinical experience, said he believes that people can make meaning and build coherence in their dying days.

In his book "Preparing for a Better End," he wrote: "We are different from all other generations that preceded us in one important respect: we can influence how that destiny unfolds. That gives us new responsibility and also new power."

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80
PERCENT
of Americans
die in medical
institutions, such
as hospitals or
nursing homes.

USDA Researchers Spark Furor With '91 Percent Ultra-Processed Foods' Diet

Key expert says study ignores the chemical additives and other unhealthy ingredients used in ultra-processed foods

Continued from Page 1

It includes four broad categories: unprocessed or minimally processed foods (fruit, whole-wheat flour); processed culinary ingredients (sugar, oil); processed foods (fresh bread, cheese); and ultra-processed foods (mass-produced bread with various additives, commercial salad dressings).

Ms. Hess voiced concerns over difficulties with the NOVA system because of potential ambiguities.

"There is not a consistent or easy-to-apply definition of what an 'ultra-processed' food is," she told *The Epoch Times*.

Her claim has set off a tide of criticism from nutrition scientists. They maintain that the study overlooks abundant evidence connecting ultra-processed food intake to an elevated risk of various diseases, regardless of the food's nutrient profile.

Carlos Monteiro, a key contributor to the development of the NOVA food classification system, disputes the study's methodology and the authors' application of the NOVA system.

"It is a desperate attempt to prevent the Dietary Guidelines for Americans (DGA) from mentioning ultra-processed foods since a recommendation against these foods would be beneficial for public health but detrimental to the profits of major corporations," he told *The Epoch Times*.

Mr. Monteiro argues that the study miscategorizes certain foods as ultra-

processed, thereby misrepresenting the NOVA system. He counters the assertion that ultra-processed foods are Americans' primary affordable, nutrient-rich source, instead championing greater access to fresh and minimally processed foods.

Peeling Back Layers of USDA Research
For the study, USDA researchers sought to answer a straightforward question: Can ultra-processed foods be part of a healthy diet?

The researchers selected commonly consumed foods based on national survey data. They explain that they listed the ten most consumed foods in categories such as vegetables, fruits, or dairy and sought the ultra-processed version to assemble a diet.

"My lab wanted to include foods commonly consumed by Americans," Ms. Hess said.

Researchers then called on external experts to evaluate an array of common foods. Their assessments relied on two main frameworks. One was the NOVA system, and the other was the DGA, which sets the standards for a healthy diet. Equipped with expert opinions and these guidelines, the researchers designed a weekly meal plan. Their target was a balanced diet of around 2,000 calories

daily, aligning with the average adult's energy needs.

The plan balanced ultra-processed items such as honey nut oat cereal, whole wheat rolls, and margarine with unprocessed foods such as eggs and broccoli. Despite falling short in vitamin D, vitamin E, and choline for certain age groups, the menu mirrored the Healthy Vegetarian Dietary Pattern's nutrient profile in the DGA.

"Our study found that several nutrient-dense foods like whole wheat bread, non-fat milk, canned fruit, tofu, fruit juice, and canned fish could be considered 'ultra-processed,'" Ms. Hess said.

The diet's quality, as rated by the Healthy Eating Index-2015, was 86 out of 100, considerably higher than the average American score of 58 from HEI-2020. Due to excess sodium and inadequate whole grains, the menu didn't achieve a perfect score.

Despite these findings, the researchers note some limitations in their study, stating, "This study exemplifies a possible healthy diet comprising mainly ultra-processed foods but does not necessarily use the most commonly consumed UPFs."

Ms. Hess underscores the need for a clear definition of "ultra-processed."

"Moving forward, a clear definition

of ultra-processed foods and inclusion of nutrient density is needed before labeling ultra-processed foods as healthful or not."

The authors propose that diets primarily filled with ultra-processed foods, as per the NOVA system, can fulfill nutritional standards and achieve high diet quality scores.

Food Scientists Push Back

The USDA study provoked a flurry of discussion in the nutrition science community and faces scrutiny from several researchers, including Mr. Monteiro. He raises concerns about the study's unconventional approach and potential conflicts of interest.

"The authors are affiliated with soybean producer entities (an ingredient commonly found in ultra-processed foods) and other institutions connected to the food industry," Mr. Monteiro said. "The U.S. is one of the largest consumers of ultra-processed foods in the world, and it is also home to major transnational corporations that profit from the sale of these foods."

His critique extends to the methodological approach, which he refers to as "nutritionism." He argues the study oversimplifies dietary health by focusing solely on individual nutrients, missing the broader picture.

"By simplistically analyzing a diet and considering only nutrients, the authors produce a false conclusion that it is possible to compose a healthy diet with ultra-



76
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IFISTUDIO/SHUTTERSTOCK



Choosing to die at home offers a familiar place where loved ones can gather freely in support of a peaceful and meaningful transition.

The spiritual side of dying is much more important than the physical side.

Rebecca Gagne-Henderson, palliative care expert

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

NEXT WEEK Talk about death to avoid needless suffering.

Dr. Morhaim said we can find a balance between seeking advanced medical treatment and preparing for our death with acceptance. By "making the best of both worlds," as he terms it, we powerfully influence how our destiny unfolds in ways former generations couldn't.

Many end-of-life experts and philosophers agree that we have a unique, even sacred ability to affect how we die. It's possible to find and make meaning in the face of death.

Making Preparations for a Good Death

But how, you ask? What's meaning at the end of life, and how does one find it?

Palliative experts agree that meaning is unique to every dying patient, and it's often discovered in preparing for death, whether one is healthy or on the brink of his or her final days.

According to Mr. Frankl, we find meaning in the practical tasks of suffering rather than in "sweeping statements" about the meaning of life.

"Our answer must consist not in talk and meditation, but in right action and in right conduct. 'Life' does not mean something vague, but something very real and concrete, just as life's tasks are also very real and concrete. They form man's destiny, which is different and unique for each individual," he wrote.

processed foods," he said. "In reality, they have not even been able to prove this hypothesis: the article itself highlights the excessive sodium and insufficient amount of whole grains."

Mr. Monteiro challenges the study's understanding of the NOVA classification, saying the authors cherry-picked "ultra-processed" foods that distort the intention of the NOVA scale, thereby mischaracterizing the term and implications of eating "unprocessed" foods.

"They attempt to do so by making a shallow comparison between nutrients in a non-ultra-processed diet and nutrients in a non-ultra-processed diet, but they fail to consider several crucial points in a study of this kind," he said.

"They do not mention, for example, the impact of chemical additives in ultra-processed foods. They do not mention their addictive potential. They simply ignore the numerous pieces of evidence, including dozens of large, long-duration cohort studies and one randomized controlled trial, that link the consumption of ultra-processed foods with an increased risk of developing various diseases, independent of the dietary nutrient profile.

"It is a highly questionable study, even in terms of its methodology."

He underscores that sporadic ambiguities in food categorization don't undermine the comprehensive application of the NOVA system in worldwide research. Any such uncertainty was recently addressed in a *Nature* article, which offers scientists a guide on how to handle classification dilemmas for certain foods.

Mr. Monteiro insists the key responsibility to identify ultra-processed foods lies not with consumers but with public policies, education initiatives, or regulations. It's a critical task that can't be left to consumer guesswork, he said.

The study is further criticized for its alleged mischaracterization of ultra-processed foods. Monteiro clarifies that adding sugar to yogurt classifies it as processed, but not ultra-processed. It takes

the inclusion of additional additives to reach that level. Similarly, whole-grain bread only ventures into the ultra-processed category when it contains nontraditional ingredients, such as emulsifiers or flavors.

"Accessibility and affordability are common characteristics of ultra-processed foods—and that's exactly where the problem lies," Mr. Monteiro said. "The focus should be on making fresh and minimally processed foods more accessible."

He pointedly asked, "Who benefits from replacing fresh foods with ultra-processed options?"

Nutrition expert Marion Nestle shares Mr. Monteiro's skepticism. In her blog, Ms.

Nestle underscores the USDA study as an effort to "cast doubt on the concept of ultra-processed foods (UPF)" and research demonstrating their association with poor health outcomes.

She asserts, "I think the UPF concept is so solidly backed up by evidence that it is here to stay."

Ms. Nestle further suggests that the USDA's Agricultural Research Service is conflicted, arguing that it functions as a "marketing arm of the food industry." Her criticism of the Healthy Eating Index used in the USDA study aligns with Mr. Monteiro's, noting its focus is purely nutrient-based and not fully equipped to address the issue of ultra-processed foods, which contain additives such as stabilizers, coloring agents, and sweeteners that are linked to disease-causing biological effects.

In addition to the scrutiny from these prominent academics, the USDA study has sparked discussion among the broader scientific community. One voice chiming in is Kevin Hall, a scientist at the National

Institutes of Health, who took to Twitter on July 12 to express his reservations.

"Interesting that @USDA is actively promoting to the public (via press release) a diet very high in ultra-processed foods as being 'healthy' despite its high Na [sodium] content and without the diet actually ever being tested in people," he wrote.

Evidence on Health Risks of Ultra-Processed Foods

Ultra-processed foods, industrial creations transformed into easy-to-consume, appetizing meals with long shelf life, have become a significant part of the American diet. These products now comprise a substantial 60 percent of the average adult's food intake.

There is a widespread lack of understanding about what constitutes ultra-processed foods among the general public. A survey from September 2022 by the International Food Information Council reveals that 76 percent of Americans are in the dark about the classification of ultra-processed foods.

Many consumers are quick to label soda and packaged baked goods as ultra-processed. Yet, some undercover ultra-processed items such as ketchup, certain plant-based milks, and flavored yogurts slip under the consumer's radar.

"There are a lot of foods that may be marketed or thought of as healthy, but have actually been processed quite a bit," said Dr. Neha Sachdev, a family physician and director of health systems at the American Medical Association. "It's important to be aware of the foods you're eating on a regular basis and how processed these foods are."

Science continues to uncover the health risks linked to a diet rich in ultra-pro-

cessed foods. A 2022 study in *BMJ* involving nearly 23,000 people found that those frequently dining on ultra-processed foods faced higher risks of heart disease and death from all causes. Another revealing piece from *BMJ* that same year raised alarm bells, suggesting that ramping up consumption of ultra-processed foods might stoke the fires of colorectal cancer risk.

Our brains aren't fans of these foods either. Studies reveal that a mere 10 percent shift from ultra-processed to less or unprocessed foods could catalyze a significant 19 percent drop in the risk of dementia.

"It is important to highlight that calories are not all created equal," Dr. Sachdev said. "The same calories that you might get from eating an apple, for example, are very different than the calories you might get from eating an apple fruit bar. These might be equivalent in number, but what ultra-processed calories represent and the nutrition that they provide your body is different."

Yet, in spite of the concerns raised, the authors of the USDA study maintain that ultra-processed foods have a role in nutrition, particularly for specific demographics. They suggest that these foods, due to their accessibility and convenience, could provide a nutritional fallback in some cases.

"Some key points often omitted from the ultra-processed food discussion are the potential benefits these foods can offer as nutrient-rich options," Ms. Hess said. "They can be a viable choice for individuals on a tight budget, families, people with limited grocery access, frequent travelers, and others."

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



Grandparents provide an essential multi-generational perspective on life.

KUZNETSOVDMITRY/GETTY IMAGES

Grandparents Host a 'Cousin's Camp'

Another way grandparents can enrich the lives of their grandchildren is by encouraging cousins to form deeper connections by sharing meaningful time together.

Mark and Jill Savage started a cousin's camp for their grandchildren who are 6 and older two years ago. Here are some tips she shared with The Epoch Times:

- **Set a Date**—Choose three days and two nights and give parents the date in advance so they can make plans.
- **Extend an Invitation to the Parents**—Let the parents know the dates and plans and try not to take it personally if they don't all join.
- **Set a Theme and Plan Activities**—A theme, such as the Great United States or the Good Earth, can help guide activities, games, crafts, and meals. Letting the kids plan one of the meals was a big hit, Ms. Savage said.
- **Plan Crafts**—Another popular activity is making tie-dye shirts they can wear the next day.
- **Give Guidelines**—No screens are allowed at cousin's camp, and 30 minutes of daily reading is required. Books can be provided, and it gives everyone a break.
- **Be Flexible**—Adjust as needed and consider a trip when the kids get older and lose interest.



ALL IMAGES BY SHUTTERSTOCK

▲ Cleaning and tidying can be a great form of self-care that we can practice productively daily.

WISE HABITS

Cleaning as Self-Care

Getting our life and home a little more organized can be energizing and uplifting

By Leo Babauta

The other day, I returned home from a short trip, and immediately unpacked and washed my clothes and put everything away. It felt nice.

The next morning, I was feeling a bit unsettled. So I started cleaning. I cleaned in the kitchen and outside in the yard, and I swept the garage. I felt so good.

I've come to realize that cleaning, organizing, and decluttering are a form of self-care for me. These activities help me feel settled and like I'm taking care of my life.

Yes, cleaning and organizing can be overwhelming and are often avoided. But if you take a small corner to tidy up, and let yourself just enjoy the cleaning, you can get lost in it. It feels nice to make things nicer.

Yes, there's always more to do—but that's a disempowering way to think about it. Why does it matter that there will always be more to do? That just means there's more self-care available. Just do a small portion right now, and enjoy it. A good analogy is that there will always be more tea to drink. I focus on only a single cup of tea at a time—and enjoy it fully.

As you clean, you might feel things getting cleaner. As you organize, you might feel like you're making lasting progress toward an improved living space. And as you declutter, you might feel the liberation that comes with shedding excess items.

We can extend this self-care of cleaning and organization into every part of our lives. Today, I worked on organizing my finances. I've been fixing little things around the house. This morning, I deleted a bunch of apps from my phone, and turned off a lot of notifications to simplify my phone experience. I also unsubscribed from a bunch of newsletters and started clearing out my email inbox.

You can think of taking a task from your task list as a form of this self-care—one item at a time, taking care of your life.

It can be overwhelming and dreadful, or it can be nourishing and lovely. It's a choice, and I choose to feel the care that I bring to every sweep of the broom or rake.

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



Getting the laundry basket empty can feel like a new start.



Cleaning can give your home a rewarding aura of freshness.



Getting rid of extra junk can feel liberating.

AGE WELL

Grandparenting Can Be a Strategy for Better Health

Pandemic research validated that grandparents who stay connected have better quality of life

By Amy Denney

Stacy Rizzo has a new outlook on life now that she has become a grandmother.

In early 2022, the California woman added three grandsons to her family, ages 11, 7, and 2. She also got an adult daughter, Stephanie Bernardy, in the deal.

The two women met in Surrogate Grandparents—USA, a private Facebook group that fosters online connections across generations. Ms. Bernardy, who lives in the Midwest, was in the group because her parents died when she was a teen, and she didn't want her boys to miss out on the special love of grandparents.

Ms. Rizzo and her husband, Nick, weren't able to have children. It was painful watching her childhood friends

having babies, but travel and work kept her life full for many years. After the COVID-19 pandemic, Ms. Rizzo had a desire for deeper relationships. When those same friends of hers started having grandchildren, the yearning grew.

"It hit me a second time. I felt like there was always something missing from my life," Ms. Rizzo, 55, told The Epoch Times.

She has daily contact with Ms. Bernardy and the boys through text, Facetime, letters, and cards.

"I'm definitely in a much better mood," Ms. Rizzo said. "It fills your love bucket, having all this extra love."

There's something quite special about grandparenting. It can enhance mental health by bringing a sense of joy and purpose to the later years of life when career obligations are beginning to wane. And while experts will often focus on the

benefits children receive from intergenerational contact, there's no doubt that it's also important for adults.

Natural Antidepressant

Forcing oneself out of isolation to spend time with the younger generation can reverse or reduce depression—a common, but not normal, problem among older adults.

Research published in 2022 looked at nearly 25,000 grandparents in 13 European countries and found that grandchild care has a protective effect against depression symptoms. The study, published in the Journal of Population Sciences, reported that the benefits weren't dependent on income levels.

The only exception appears to be custodial grandparents who were taking on the role of parent and had decreased health outcomes. Grandparents who live with their children and grandchildren also didn't experience the same benefits, with research published in the European Journal of Ageing in 2022 suggesting mixed results.

A study published in the Journal of Gerontology: Social Sciences, found that nearly 35 percent of grandparents who stopped caring for their grandchildren throughout the first nine months of the pandemic reported high levels of symptoms related to depression, such as feeling sad or having restless sleep, compared with 26 percent of those who continued to look after grandchildren. Those who lost contact also reported lower life satisfaction and a lower quality of life.

The study involved 2,468 grandparents older than 50 with grandchildren younger than 15.

"Looking after grandchildren may provide grandparents with emotional gratification and a sense of usefulness and competence, thereby enhancing life satisfaction," lead author Giorgio Di Gessa, whose doctoral research focused on active aging, said in a University College London statement. "Involvement in such a family activity may also provide them with a sense of value and attachment, thereby strengthening intergenerational relationships and positive emotional exchanges that might benefit their mental health."

Value and Purpose

Kathleen Lyons, a licensed clinical professional counselor, told The Epoch Times that people are hardwired to seek purpose and meaning in their lives. As one moves through different phases of life, it's also normal to redefine oneself, according to Ms. Lyons, who specializes in trauma and life adjustment.

"There's a biological need for people to have a legacy, to create a legacy," Ms. Lyons said. "Aging is tremendously difficult. Children keep us young. Grandparenting gives purpose and meaning."

For one of her clients, grandparenting is her top motivation to keep fighting suicidal ideations and heal.

"She doesn't want to pass her pain on to this little girl," Ms. Lyons said. "So much of her fight for mental health is because she doesn't want to pass along generational trauma."

Spending time with grandchildren can boost essential neurotransmitters such as serotonin, dopamine, and oxytocin. Neurotransmitters are chemical messengers that help the body function by sending messages to target cells in other neurons, muscle cells, or glands.

Low levels of serotonin are associated with depression and can affect sleep, memory, digestion, and the body's stress response. Dopamine helps the brain feel pleasure in the reward center. It can go haywire in addictions, and a low level is associated with Parkinson's disease. Oxytocin is a hormone that's sometimes also classified as a neurotransmitter. Bonding triggers its release, and it's associated with touch, exercise, and a feeling of well-being.

"The only thing grandparents do is give and give and give, but in the giv-

ing, they are receiving," Ms. Lyons said. "Grandparenting is the most selfish self-less thing we can do."

A Risk Worth Taking

Ms. Rizzo was able to visit her new family nearly a year ago, and when she did, she "proposed" to Ms. Bernardy, asking her to become her daughter. Her new grandsons call her Nana, and everyone's lives have been enriched because they took a chance.

It didn't come without challenges, however. Ms. Rizzo said she first met

dozens of women online, most of whom she didn't click with. She also saw that some seemed manipulative and wanted the relationship strictly for financial gain.

With Ms. Bernardy, the relationship came naturally. They were able to easily be vulnerable with one another and determine whether their thoughts, beliefs, and expectations were compatible. It was worth it, Ms. Rizzo said. Now, her grandsons spontaneously call her, she helps Ms. Bernardy work through tough parental issues, and it has been one of the most rewarding experiences she has had.

"You have to stick with it. It does take time," Ms. Rizzo said. "It's up to you to make the effort and keep connecting. You will find out being a grandma makes you feel younger."

Grandparenting gives purpose and meaning.

Kathleen Lyons, licensed clinical professional counselor

Mindful Movement to Manage Pain and Anxiety



OLEK_SLOBODENIUK/GETTY IMAGES

Neuroscience shows the clear benefits of a mindful awareness practice, but you don't need to sit still to still your mind

By Kayla Laine

Do you find it hard to be still? Research shows that mindfulness-based practices can play a promising role alleviating chronic pain and anxiety, but most traditional mindful exercises require participants sit still for extended periods of time, something that can be difficult for people suffering from physical pain or severe anxiety.

The Benefits of Mindfulness

The mindful state is "characterized by changes in neural activity that have

been studied for over two decades in dozens of academic papers," according to Chris Fields, consulting scientist and researcher at Tufts University studying physics, biology, and cognitive science.

"Different regions of the brain are activated when attending to the self, for example, versus the external world," Mr. Fields said. "These differences are well-documented in the neuroscience literature."

Multiple studies have highlighted the positive effects of mindfulness on physical and emotional health. Mindfulness awareness practices have been associated with improved cognitive resilience countering anxiety, depression, and stress, along with enhanced overall cognition. Noted improvements in cognitive control include better emotional regulation and an elevated mood, which also contributes to pain acceptance and pain tolerance.

The Neuroscience Behind Mindful Awareness

Studies comparing fMRI brain scans of individuals engaged in a mindfulness exercise with the brain scans of a control group showed that even a brief state of mindful awareness can significantly reduce perception of physical pain.

One suggested explanation of this mechanism is that the specific neural pathway for attention and mindfulness is shared with the final pathway for pain relief.

An additional study showed that participants who continued to engage in a mindful awareness practice for longer had significantly reduced activation of the amygdala, the brain structure that largely regulates feelings of aggression, anxiety, fear, and stress.

Moving Beyond Sitting Mindfulness Practices

Do you have to sit in a cross-legged po-

sition for hours like in some of these studies to access the calming and analgesic effects of mindful awareness? Mr. Fields said no—there are "many examples of activities that reliably induce focused and 'fully present' states."

One easily accessible mindful movement combination is walking.

Steps to Incorporate a Walking Mindful Awareness Exercise

The purpose of a walking mindful awareness exercise isn't to clear all thoughts, but rather to simply focus on the walk itself.

"During a walking mindful awareness practice, the goal is to be present and to remain connected to your body through observation of your

the feet as they meet the ground," James Kearns, a certified mindful awareness instructor, said. "This is an exercise designed to engage with clarity in the moment and to put space between you and an immediate emotional reaction."

He recommends a three-step routine for a short and simple moving mindful awareness exercise.

1. Set a dedicated amount of time to be fully present, starting with two to five minutes. Find a place where you can remain safe and undistracted. Work with where you are.

2. Begin walking slowly and maintain a steady pace. Breathe normally.

3. Observe your footsteps. Notice a rhythm and bring all of your attention to the physical sensations as your feet contact the ground. This is your anchor. As you walk, consistently return your focus to your footsteps.

What if you lose focus or start thinking about something else? For walking mindful awareness, footsteps are used in place of a breath anchor. When you inevitably get distracted by thoughts, just go back to the footsteps.

You can add this exercise as a daily regimen, or you may choose to use your mindful walk as a tool for pain or anxiety management as needed. The more time you spend in this practice, the more beneficial it will be.

Kayla Laine is a writer and producer with an education in neuroscience and career experience in documentary television, news, and health.



Mindfulness can improve emotional regulation and enhance overall cognition.

MAOYUNPING/SHUTTERSTOCK

TRUTH and TRADITION

In Our Own Words



“I try to create a beautiful, uplifting, or thoughtful experience in order to reconnect us to our spirituality.”

Sharon Kilarski
Arts and Culture Editor

The Best of the Human Experience

Dear Epoch VIP,

If you're at all like me, you know that it can be ugly out there. You read about it in the news, watch it on the screen, and maybe even see it out your window. And it seems worse lately—depressing. That's where The Epoch Times steps in.

Ever since its creation, The Epoch Times has featured an arts and culture section that acknowledges the importance of the truly beautiful—whether beautiful in a physical sense or a moral one, and we continue that mission today.

And as the Arts and Culture editor, the mission is at the center of how I run my section.

In keeping with our motto of Truth and Tradition, we aim to present the best and noblest that human culture has to offer. By exploring the best craftsmanship in the world, we acknowledge that diligence, hard work, and patience produce excellence. In reviewing films, we search for those that are actually good for the soul, or, conversely, we point out where they have failed in this regard. By looking to our heritage for historical, literary, and mythical figures, we seek those with outstanding character and virtues to offer as exemplars to emulate. And by looking to the classics in music, the performing arts, and fine arts, we find themes that emphasize dignity, uprightness, harmony, and purity to inspire us.

In a sense, traditional art, stemming from traditional culture and values, aims at the heart and can speak

to us in surprising ways—as though we are having a conversation with a dear and trusted friend.

And just as conversations with a friend will sometimes touch on pain, the traditional arts not only capture the breath of human experience but its depth as well, allowing us to recognize our sins and frailties, and transforming humanity's inevitable pain to give that pain meaning. It is the beauty of the classics that carry out this alchemy.

Most importantly, I believe that art has traditionally been a link to the sacred, as a way to remind us of purpose on earth. As the late philosopher Roger Scruton wrote, “True art is an appeal to our higher nature, an attempt to affirm that other kingdom in which moral and spiritual order prevails.”

That our society today has forgotten this purpose is all the more reason that each week, as editor of Arts and Culture, I try to create a beautiful, uplifting, or thoughtful experience in order to reconnect us to our spirituality.

I'm continuing to find paintings, stories, and remarkable figures that astonish me and I hope they will affect you, dear reader, too. I hope you will enjoy the Arts and Culture section, and that it can help you step away for a moment from the violent, cynical, demonic, immodest, insulting, and tasteless. I hope our content leaves you refreshed and anticipating the next issue.

In Truth and Tradition,

Sharon Kilarski
The Epoch Times



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The Secret of Okinawa's Centenarians

Aging gracefully without losing mental sharpness or purpose in life

By Amber Yang & JoJo Novaes

For thousands of years, people have been searching for the secret to longevity. In Okinawa, Japan, the number of centenarians is remarkable, with 90 individuals aged 100 or older per 100,000 people—three times higher than the number in the United States among a similar population.

Lobsang Gyaltsen, an expert in cellular immunotherapy, points out that Okinawa's diet and lifestyle not only contribute to longevity but also provide significant benefits for the cognitive well-being of the elderly.

Elements of Okinawan Cuisine
Okinawan cuisine is characterized by its predominant use of plant-based whole foods, with sweet potatoes being a staple. Sweet potatoes are rich in magnesium and calcium, both of which are essential minerals for brain neurotransmission and restful sleep. Addi-

tionally, they contain flavonoids, which possess anti-inflammatory properties that reduce chronic inflammation in the body.

Sweet Potatoes
In contrast to the modern notion of reducing starch consumption for a healthy diet, traditional Okinawan cuisine embraces it. According to Mr. Gyaltsen, sweet potatoes offer a healthier source of starch compared to refined starches. They have a low glycemic index (GI), leading to a gradual increase in blood sugar levels after consumption.

Research has found that consuming sweet potatoes can help control blood sugar levels.

On the contrary, consuming high-GI foods, such as bread, desserts, and other refined sugars, can cause a rapid spike and drop in blood sugar levels. This can lead to increased inflammation, weakened immune function, and accelerated cellular aging due to the production of free radicals. Additionally, significant fluctuations in blood sugar levels can contribute to mood swings.

▲ The Okinawans live an active and engaged life often working into their later years. They eat a primarily whole food diet and they don't overeat.

Continued on Page 18



Birth Control Pill May Increase Stress Load, New Study Finds

New research may offer insight into complex mental and physical ailments linked to oral contraceptives

By Emma Suttie

Even though women have been using the birth control pill for the better part of the past seven decades, researchers are still discovering the complex ways it affects the body and mind—which go far beyond reproduction.

The study has wide-reaching implications, as millions of women worldwide use the birth control pill, many of them beginning at puberty.

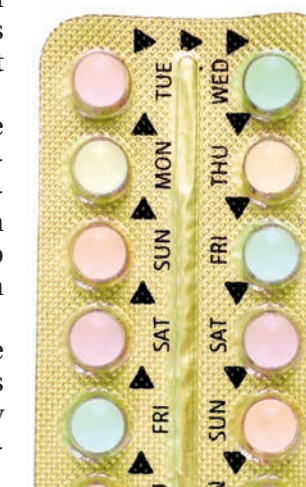
Previous research has shown that women using oral contraceptives have a heightened risk of cardiovascular disease, metabolic conditions, and men-

tal health issues such as suicide and depression, although the mechanisms that cause these adverse effects aren't well understood.

Recent evidence also suggests that the use of oral contraceptives influences behaviors that include reduced cognitive ability, altered emotional memory, changes in partner preference, and lower relationship satisfaction, though again, more research is needed to understand why.

The new research may provide some insight to help answer these questions as it points to an issue that can underlie many other physical and mental ailments—stress.

Women taking the birth control pill have an increased risk of metabolic conditions and mental health problems.



The Study
Researchers at Aarhus University in Denmark and Claremont Graduate University in the United States recently conducted a study to see how birth control pills affect the way women react to and recover from stressful situations.

One hundred and thirty-one young women participated in the study and were an average of 20 1/2 years of age. Researchers studied the women's stress response while they were having their blood drawn. Some women in the group were on the birth control pill, and others weren't. Stress responses were evaluated by measuring levels of the stress hormone ACTH, or adrenocorticotropic hormone in the women's blood.

The study was designed so that the women would have their blood taken, and their ACTH levels would be measured (to determine stress response). The women would then engage in 15 minutes of social activities and have their blood drawn again, to see if and

Continued on Page 16

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EAT WELL

Whole-Fat Dairy Part of Heart Healthy Diet: Study

Global study shows PURE diet guards against heart disease and death, but critics say the evidence is scientifically weak

By Heather Frank

A new study suggests that the PURE diet promotes heart health and a longer life—and that life includes whole-fat dairy.

PURE, which stands for Prospective Urban Rural Epidemiology, focuses on six food categories: fruits, vegetables, nuts, legumes, fish, and whole-fat dairy.

Higher intake of these food types equates to a higher PURE diet score, which ranges from zero to six.

In an observational study across 80 countries including more than 145,000 people, a team of international researchers found that a PURE diet score of five or higher consistently correlated with lower cardiovascular disease (CVD) and mortality rates. Additions of modest amounts of whole grains or unprocessed meats didn't affect health outcomes.

While the PURE diet is similar to existing score-based diets, its global applicability is unique. Some doctors caution, however, that observational dietary studies have limited value.

The Study

The study was published in the European Heart Journal in June.

Some 21 percent of participants were from high-income, 60 percent from middle-income, and 19 percent from low-income countries, which was representative of the global wealth distribution at the midpoint of participant recruitment (2008).

Participants' health outcomes were assessed after a median of 9.3 years. The mean PURE diet score was 2.95, with individuals from wealthier countries tending to score higher.

North America, Europe, the Middle East, and South America achieved higher median scores, while South and Southeast Asia, China, and Africa fared worse.

Comparative analysis showed that the PURE score is slightly better at predicting all measured health outcomes (CVD, myocardial infarction, stroke, and all-cause mortality) than the Mediterranean, 2010 and 2015 Healthy Eating Index, and DASH (dietary approaches to stop hypertension) diet scores, and far superior in predicting these than the EAT-Lancet Commission's planetary health diet.

The study offers new insight into the idea that heart disease risk may depend as much on eating too few high-quality, nutrient-dense foods as eating too many high-calorie, low-quality processed foods known to contribute to heart disease. This is important, given regional differences in diet.

"The current recommendations of what people should eat to prevent cardiovascular disease are largely based on studies initiated in high-income countries, or Western countries, like the United States and Europe, with limited information on what people eat in other parts of the world," lead author Dr. Andrew Mentz told The Epoch Times. "So it's not known whether the conclusions that are derived from diets in Western countries are applicable to low- and middle-income countries."

Dr. Mentz, an epidemiologist at McMaster

University in Ontario, Canada, noted that the study challenges current dietary recommendations to restrict whole-fat dairy. He and his colleagues published a 2018 study in *The Lancet* demonstrating that consuming whole-fat milk, yogurt, and cheese is associated with lowered CVD and mortality.

The risk of developing cardiovascular disease was approximately 30 percent lower overall in the Mediterranean diet groups compared to the control group.

A Cardiologist's Perspective

Dr. Steven Nissen, a cardiologist at Cleveland Clinic, told *The Epoch Times* that the PURE diet study's findings should be handled with caution. He explained that observational dietary studies gathered based on participants' memory of trivial events. He said it's hard for people to remember what they ate for dinner last Wednesday, much less so how much dairy or fish they ate in the past year.

A prospective, randomized clinical trial comparing participants who followed the PURE diet to ones who didn't would strengthen the PURE diet score's credibility, according to Dr. Nissen.

The Mediterranean diet, which is similar to the PURE diet but limits dairy, is backed by one such study.

Conducted in Spain, the PREDIMED study compared cardiovascular health outcomes for participants who followed one of three diets: the Mediterranean diet supplemented with olive oil, the same diet supplemented instead with nuts, and a control (low-fat) diet. The risk of developing cardiovascular disease was approximately 30 percent lower overall in the Mediterranean diet groups compared to the control group.

Achieving a Heart-Healthy Diet

Dr. Mentz said eating a balanced diet is the best way to achieve a heart-healthy diet. He stressed that the PURE diet is balanced, with only 27 percent of total energy coming from fats. Within the PURE diet's food categories, he highlighted eating a variety of fruits and vegetables of differing colors and eating fatty fish.

Dr. Nissen recommends the Mediterranean diet to his patients at Cleveland Clinic.

"It has lots of fruits and vegetables, whole grains, more fish as a source of protein than meat or chicken, and uses olive oil in cooking and in salads," he said.

Red meat is fine in moderation, but it isn't necessary to ensure heart health.

Heather Frank is a science and health reporter, as well as a trained food scientist. She has helped companies develop all-natural products and infrequently blogs about healthy eating in her spare time.

A PURE diet is high in fruits, vegetables, nuts, legumes, fish, and whole-fat dairy.

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PLANT MEDICINE

Moringa: What Can This 'Wonder Plant' Do for You?

One of the most nutrient-dense foods in the world is offering hope for diabetes, malnutrition, and even COVID-19

By Susan C. Olmstead

If you're looking to control your blood sugar, you may have heard about a "new" superfood called moringa, a healthy supplement to take on its own or add to smoothies and soups. Called a "wonder plant" by some, moringa is available in powder form, in capsules and gummies, and as a tea.

Rich in vitamins, proteins, and amino acids, moringa is an ancient plant and a powerful dietary supplement—so much so that researchers are looking into its potential to prevent malnutrition.

In the Western world, moringa (*Moringa oleifera*) is often promoted as a supplement to help patients with Type 2 diabetes.

"It lowers blood sugar and blood pressure as well since it is high in fiber and protein," Dr. Ahmet Ergin, an endocrinologist and founder of Sugarmds.com, told *The Epoch Times*.

He said the plant's naturally occurring vitamins, proteins, and amino acids are the source of its benefits. One of the most nutrient-dense plants in existence, moringa is rich in vitamins A, B, C, D, E, and K, as well as calcium, iron, potassium, magnesium, manganese, and zinc.

For people who are unfamiliar with moringa, the easiest way to use it is in powdered form, added to smoothies, salads, or soups, Dr. Ergin said.

"Food can be medicine if you eat it correctly," he said.

"We use medications, too, but I think using natural sources helps a lot in terms of the number of medications they need. With the right coaching, the right foods, and supplements, they do great."

While moringa may be new to many Westerners, people have relied on its healing properties for centuries in developing and tropical areas. People in Asia and other places where moringa grows often use its bitter leaves in stews, casseroles, soups, and salads.

Some nutrition experts believe moringa has the potential to help ease malnutrition globally and also to be a tremendous boon to the health and wealth of poorer nations.

What Is Moringa?

Native to India, the deciduous moringa tree is also known as the horseradish tree, drumstick tree, and radish tree, among other names. The plant now



▲ Moringa's nutrient density has some nutrition experts hopeful it can help ease malnutrition globally and improve the health and wealth of poorer nations.



People in many areas of the world have relied on moringa's healing properties for centuries.

6

VITAMINS

Moringa is rich in vitamins A, B, C, D, E, and K, as well as calcium, iron, potassium, magnesium, manganese, and zinc.

also thrives in tropical areas of West Africa, Asia, Australia, South America, and Central America.

According to a review by an international group of researchers looking at a collection of studies on moringa, the plant contains:

- Higher amounts of vitamin C than oranges.
- Higher concentration of vitamin A than carrots.
- Higher calcium content than milk.
- More potassium than bananas.
- Nine times more iron than spinach.
- Four times more fiber than oats.

Its nutrient density is why moringa is called a "living cornucopia" in a book on African crops produced by the National Academies of Science, Engineering, and Medicine (NASEM).

With its high concentration of beta-carotene (four times the amount in carrots, according to NASEM), moringa is ideal for use in programs aiming to end vitamin A deficiency in developing countries, the group said.

Moringa also packs in more amino acids than most other plants. According to the organization Trees for Life, nutritional analyses show that moringa leaves contain all the essential amino acids, which is unusual for a plant source.

Researchers in India labeled moringa a "wonder plant" after reviewing 10 years of research and patents on it. In a 2021 review of research into moringa's nutritional significance and therapeutic potential, they found that the plant could be a tremendous boon to the health and wealth of developing countries.

"The indigenous components of moringa can treat humankind of its diseases and contribute to overall health," they wrote. "It can lead to tremendous economic development if the industries and researchers exploit its potential for highly nutritional super food and therapeutic application by undertaking further research to corroborate earlier studies."

Potential to Nourish the Poor, Fight COVID-19

The organization Trees for Life was founded in the 1980s to assist Indian villagers in planting fruit trees. Its founder and president, Balbir Mathur, learned from an Indian traditional medicine practitioner that moringa leaves can prevent 300 diseases. After looking into this claim, Mr. Mathur concluded, "the more we study, the more it seems that the *Moringa oleifera* tree truly delivers wonders."

Research into moringa as a possible solution to the problem of malnutrition began in earnest in the early 2000s. Writing in the *Trees for Life* journal in 2005, Jed W. Fahey, who has a doctorate in science, even cautioned against viewing moringa as a panacea.

"While recent enthusiasm indeed

appears to be justified, it is critical to separate rigorous scientific evidence from anecdote," he wrote.

Just a year later, authors at NASEM in 2006 asserted that "throughout Africa, moringa could be immediately incorporated into programs tackling the misery of malnutrition."

They also wrote, "It is reported by CWS [Church World Service] that three spoonfuls of moringa leaf powder (about 25 grams) contain 300 percent of a typical toddler's daily vitamin A requirement, along with 42 percent of the protein, 125 percent of the calcium, 71 percent of the iron and 22 percent of the vitamin C."

Mr. Mathur then wrote in 2008 that moringa has "the potential to deliver the nutrition needed to prevent and cure diseases and save populations." Research since that time has shown Mr. Mathur had good reason to be optimistic.

A 2020 review of moringa's nutritional and pharmaceutical applications in conventional and traditional Asian medicine concluded that moringa—in addition to its value in battling malnutrition—"may confer] a supportive effect against COVID-19 disease."

Because it's a bitter herb, traditional Chinese medicine practices support moringa's use "in order to clear heat and detoxify, purging the infection in the early stage, as well as to cool blood and remove blood stasis promptly in the middle and late stages," the researchers wrote.

Although they didn't recommend a specific protocol, the authors wrote that it seemed likely that moringa could be combined with Western medicine to treat COVID-19.

Most recently, a 2023 review looked into the use of moringa in South Africa as a "food fortificant" supplementing children's diets. Noting that childhood malnutrition is on the rise in South Africa, the study in the *Journal of Nutrition* found that while moringa's nutritional value is high and it's readily available, it isn't a popular food in that country. The authors recommend improving the appearance and taste of moringa-fortified foods to improve "consumer acceptability."

"Studies could look at adding more than one food item to mask the [bright green] color and enhance the taste" of moringa, they wrote.

"Home-prepared complementary foods suitable for the incorporation of [moringa leaf powder] should be identified for the target population."

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PROPER SUPPLEMENTATION

Eat (and Supplement) Your Electrolytes for the Summer Heat

Get these critical conductive minerals in foods and healthy supplements, but skip the sports drinks

By Zrinka Peters

Summertime overflows with youth sports, adult pickleball leagues, and leisurely days spent sweating under the summer sun. All that heat and activity makes us thirsty, and it makes us wonder about electrolytes, too—how many we're losing, how many we need, and how to replenish those that we've lost.

Electrolytes began to enter the national consciousness back in 1965 with the invention of Gatorade, and interest has grown steadily since. Today's global sports drink market is valued at more than \$26 billion, and the neon-colored bottles, tablets, and powders are found everywhere. They're even handed out to 5-year-olds after T-ball games. But do we actually need them?

Electrolytes are minerals, such as sodium, magnesium, and potassium, which carry an electric charge when dissolved in fluid, and the human body relies on this conduction of electrical charges for countless functions.

Electrolytes are crucial for maintaining fluid balance throughout the body, as well as for muscle contractions (including in the heart), nerve impulses, and much more. Getting too many or too few electrolytes can result in negative effects that range from muscle cramps and fatigue to potentially life-threatening complications. We consume electrolytes mainly through food and

drink, and lose them when we sweat, as well as through bouts of sickness that can result in fluid loss through vomiting or diarrhea.

The good news is that, for most people who are moderately active and health conscious, it's possible to get a good balance of all of the necessary electrolytes through a wholesome, well-balanced diet.

"For most people who participate in moderate exercise, water and a balanced diet usually provide enough electrolytes. Supplementing with electrolytes isn't usually necessary unless you are engaged in intense, long-duration physical activity or are exercising in extreme heat," Alex Stone, a Washington-based doctor of

HOME-MADE ELECTROLYTE DRINKS

Mix a replenishing drink of fresh squeezed lemons, limes, himalayan salt, honey, water, and unsweetened coconut juice.



Get your electrolytes without the added sugars, artificial colors, and sweeteners.

physical therapy and certified strength and conditioning specialist, told The Epoch Times.

Being aware of electrolyte-rich food sources can help us make smart dietary choices based on our individual needs and activity levels.

Sodium

Sodium is one of the most abundant electrolytes, and it plays a crucial role in regulating extracellular fluid volume. There's some debate among medical professionals over what the optimal recommended amount of sodium—along with its twin electrolyte, chloride—should be, but most agree that overconsumption is more likely than underconsumption for the average American. The American Heart Association recommends that adults who are generally healthy consume no more than 2,300 milligrams of sodium per day, but most of us—about

90 percent—consume far more, mostly through the sodium chloride (table salt) that has been added to processed foods and beverages.

For that reason, while certain groups of people—such as endurance athletes and those with medical or dietary conditions that result in low sodium levels—may benefit from a sodium-heavy electrolyte supplement, most don't.

Potassium

Potassium, on the other hand, is easier to overlook. It's essential for regulating blood pressure, as well as for muscle contractions, kidney function, and the transmission of nerve impulses. The National Academy of Medicine recommends that the adequate intake of potassium (the "amount assumed to be adequate in apparently healthy individuals") for older children

and adults ranges from 2,300 to 3,400 milligrams per day, based on sex and stage of life. Women older than 19 are advised to get 2,600 milligrams of potassium daily, while adult men should strive for 3,400 milligrams. Unlike sodium, which most of us get more than enough of, American adults are generally deficient in potassium, with the average intake falling a few hundred milligrams short of the recommended amounts for both sexes.

Potassium is found in significant amounts in a variety of fruits, vegetables, dairy products, fish, and meats. Leafy greens such as beet tops and spinach are rich sources of potassium (1,300 milligrams and 618 milligrams, respectively, per cup when cooked), as are baked potatoes with the skin on (919 milligrams). Half an avocado contains 485 milligrams of potassium, and, of course, bananas are still a great pick, with about 422 milligrams of potassium per fruit. Other good choices of potassium-rich foods are dried apricots, beans and lentils, squash, kiwi, and yogurt.

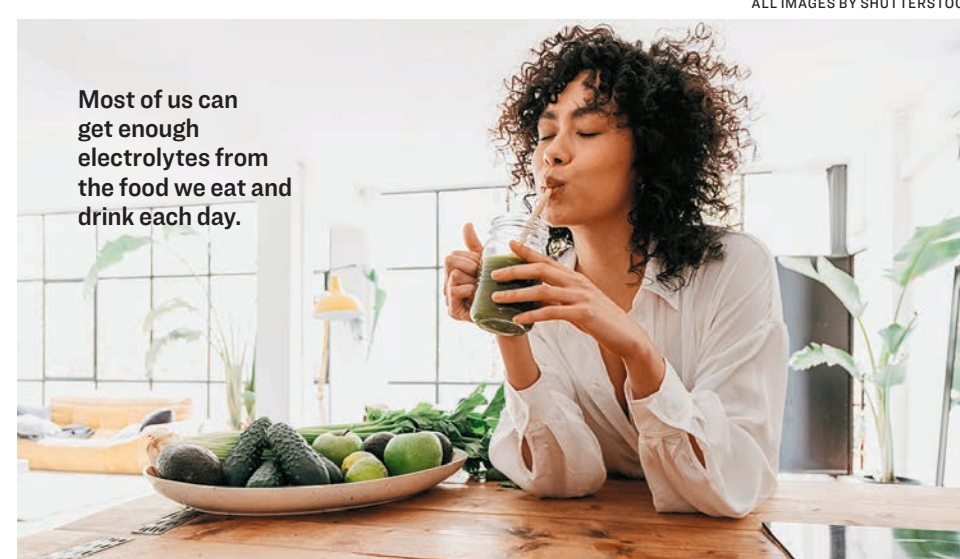
Magnesium

Magnesium is also often deficient in American adults. The recommended dietary allowance (RDA) of magnesium is 310–320 milligrams per day for adult women (350 milligrams during pregnancy or lactation), and 400–420 milligrams per day for adult men. But most of us don't reach those goals.

"Large, cross-sectional, population-based data sets confirm over half the adult population in the United States does not consume adequate amounts of magnesium," according to a June 2018 Nutrition Reviews article titled "Factors influencing magnesium consumption among adults in the United States." Most of us get too little magnesium in our diet because processed foods are typically low in magnesium and soil conditions have reduced the magnesium in foods. We also lose this mineral through sweat and urine.

To complicate the matter, symptoms of magnesium deficiencies can vary widely and mimic many other conditions. Such symptoms include cardiovascular and neuromuscular problems, along with dozens of other potential symptoms that range from tinnitus and migraines to depression.

Unfortunately, there's no simple and reliable test to accurately measure overall magnesium levels because the majority of the body's magnesium is stored in bone and muscle. However, a careful dietary analysis can offer a good idea of how well you are meeting the RDA, and there are several online programs, such as Cronometer, that



Most of us can get enough electrolytes from the food we eat and drink each day.

make this easy. Good dietary sources of magnesium include green leafy vegetables (1/2 cup of cooked spinach contains 78 milligrams), nuts, seeds, legumes, and whole grains. And dark chocolate lovers can continue to indulge—1 ounce contains 50 milligrams of magnesium.

Eat Your Vitamins and Supplement Wisely

Consuming a nutrient-dense, varied diet should cover the bases not only for sodium, potassium, and magnesium, but also for the other major electrolytes (calcium, chloride, phosphate, and bicarbonate).

While most people should be able to meet their electrolyte needs through a varied and nutritious diet, there are times when supplementing may be a good idea. Intense workouts that are more than an hour long, and illnesses or medications that result in dehydration or poor mineral absorption can make supplementing with electrolytes a good idea.

"It's essential to listen to your body; symptoms of electrolyte imbalance may include muscle cramps, fatigue, headache, and nausea," Mr. Stone said.

When facing the aisle of popular sports drinks, there are a few things to keep in mind. Many options do contain some electrolytes, but are also loaded with sugar, preservatives, and artificial colors or sweeteners—additions that can work against your health and fitness goals.

"While popular sports drinks can provide hydration and some electrolytes, they often contain high amounts of sugar or artificial sweeteners," nutritionist and personal trainer Mary Sabat told The Epoch Times.

"Excessive sugar consumption can contribute to health issues such as weight gain, tooth decay, and increased risk of chronic diseases like diabetes. Artificial sweeteners, on the other hand, have their own controversies and potential health concerns," Ms. Sabat said.

One 20-ounce bottle of a popular sports drink, for example, contains 34 grams of sugar—more than 8 teaspoons. This is more than the entire daily allowance of 6 teaspoons (or 25 grams) recommended for women by the American Heart Association. Add controversial food dyes and preservatives to this (not to mention the price), and any suggestion of a net benefit becomes dubious.

There are many healthier, low- or zero-sugar electrolyte drinks and tablets now available, which are likely better options for those who are looking to supplement.

"If you're looking for alternatives to sports drinks, there are several options available. Coconut water is a natural source of electrolytes, including potassium and magnesium. It is lower in sugar compared to many sports drinks and can be a refreshing choice," Ms. Sabat said.

"Another alternative is to look for electrolyte drinks sweetened with natural options like stevia, which is a plant-based, zero-calorie sweetener. These beverages can provide electrolyte replenishment without the high sugar content. It's always a good idea to read labels, compare products, and make informed choices based on your own health goals."

It's also easy to make your own electrolyte-replenishing sports drink at home, for pennies. A quick online search will yield dozens of recipes, and some are as simple as adding a pinch of salt and a squeeze of lemon juice to your water bottle.

Top Food Sources of Electrolytes

If you're looking to eat your vitamins and gain all the synergistic benefits of complex nutrition that come from natural sources, here are some good options for electrolytes, according to the National Institutes of Health's Office of Dietary Supplements.

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Top Sources of Potassium

- Apricots, dried, 1/2 cup (755 mg)
- Lentils, cooked, 1 cup (731 mg)
- Squash, acorn, mashed, 1 cup (644 mg)
- Prunes, dried, 1/2 cup (635 mg)
- Raisins, 1/2 cup (618 mg)
- Potato, baked, flesh only, 1 medium (610 mg)
- Kidney beans, canned, 1 cup (607 mg)
- Orange juice, 1 cup (496 mg)
- Banana, 1 medium (422 mg)
- Milk, 1 percent, 1 cup (366 mg)

Top Sources of Magnesium

- Pumpkin seeds, roasted, 1 ounce (156 mg)
- Chia seeds, 1 ounce (111 mg)
- Almonds, dry roasted, 1 ounce (80 mg)
- Spinach, boiled, 1/2 cup (78 mg)
- Cashews, dry roasted, 1 ounce (74 mg)
- Peanuts, oil roasted, 1/4 cup (63 mg)
- Cereal, shredded wheat, 2 large biscuits (61 mg)
- Soy milk, plain or vanilla, 1 cup (61 mg)
- Black beans, cooked, 1/2 cup (61 mg)
- Edamame, shelled, cooked, 1/2 cup (50 mg)

Top Sources of Calcium

- Yogurt, plain, low fat, 8 ounces (415 mg)
- Orange juice, calcium-fortified, 1 cup (349 mg)
- Mozzarella, part skim, 1 1/2 ounces (333 mg)
- Sardines, canned in oil, with bones, 3 ounces (325 mg)
- Milk, nonfat, 1 cup (299 mg)
- Soy milk, calcium-fortified, 1 cup (299 mg)
- Milk, whole (3 1/4 percent milk fat), 1 cup (276 mg)
- Tofu, firm, made with calcium sulfate, 1/2 cup (253 mg)
- Salmon, pink, canned, solids with bones, 3 ounces (181 mg)
- Cottage cheese, 1 percent milk fat, 1 cup (138 mg)

WOMEN'S HEALTH

Birth Control Pill May Increase Stress Load, New Study Finds

Continued from Page 13

how their stress levels had changed.

To reduce unnecessary stress to the participants, the researchers inserted a small intravenous catheter during the initial blood draw so that after the 15 minutes of social activity, the young women could have their blood taken without the need for another needle prick.

After having a blood sample taken, the women engaged in 15 minutes of social activities that could include playing board games, singing songs together, attending a church service, or getting to know each other in a group setting.

According to the study, the 15-minute group activities were designed to encourage interpersonal attachment and help buffer the effects of stress.

After 15 minutes of social interaction—which involved a choice of six different group activities—blood samples were taken to evaluate the effect of socializing on their stress levels.

The study showed that 15 minutes of

social activity lowered stress hormone levels in women not on the birth control pill—or with a natural menstrual cycle. By contrast, women in the group taking birth control pills had no change in their ACTH levels after socializing together.

The study also states that both groups of women—those on birth control and those who weren't—experienced beneficial effects during the group activities, which included increased closeness and improved mood, regardless of their contraceptive use or what phase of their menstrual cycle they were in.

"Being with other people is one of the most effective ways of reducing stress. Our results are really important because they indicate that people who use birth control pills do not experience the same reduced stress hormone

levels in connection with social activities as people who do not use the pill," Michael Winterdahl, a visiting scholar at the Translational Neuropsychiatry Unit at the Department of Clinical Medicine and one of the study's authors, said in an Aarhus University article.

The connection between birth control pills and the stress response in women is well established in the scientific literature; however, using ACTH in connection with social activity is a new approach. The present study differs from previous studies that have primarily focused on cortisol, another stress hormone. Studying ACTH gives researchers an advantage as it changes much more quickly than cortisol does. Using ACTH allowed the researchers to observe and evaluate rapid changes in the women's responses to stress.

ACTH, or adrenocorticotropic hormone, is a hormone produced by the pituitary gland—a small gland that sits at the base of the brain. ACTH controls the production of the hormone cortisol. Cortisol is made by the adrenal glands, two glands located above the kidneys. ACTH and cortisol are both vital to helping the body respond to stress.

Birth control pills are known to affect the hypothalamic-pituitary-adrenal (HPA) axis. As the name suggests, stress signals travel from the hypothalamus in the brain through the pituitary gland, which releases ACTH, which then travels to the adrenal glands to release cortisol.

"By studying ACTH levels, we take another step towards understanding how the brain regulates stress as birth acts as a neurotransmitter from the brain to the adrenal cortex, which produces cortisol. When we analyze ACTH levels, we can gain insight into the quick-response mechanism that controls the body's reaction to stress," Mr. Winterdahl said.

Although the researchers don't have a definitive answer as to why the women using birth control don't experience the same reduction in stress hormone levels in connection with social activities as those who aren't on the pill, there are several theories.

"Our research has pushed us closer to an explanation that centers on the brain and the ACTH dynamics. The biochemistry is complex, but we are working based on the assumption that birth-control pills can suppress the body's own production of progesterone," Mr. Winterdahl explained.

Chronic stress also affects levels of progesterone. Because progesterone is a precursor to cortisol, which is released in stressful situations, when cortisol levels go up, levels of progesterone decrease. Progesterone is also broken down into the hormone allopregnanolone, which is involved in a wide range of calming effects. Progesterone and allopregnanolone are associated with our ability to adapt to stress.

Variations in the Menstrual Cycle

The study also revealed that in the women who weren't taking birth control pills, the stress-lowering effects of social activities depended on where they were in their menstrual cycle.

In the analysis after the social activ-

ities, researchers found that the women not taking birth control had a significant decrease in ACTH levels if they were in the menstrual and secretory phases of their cycle, but ACTH levels were unchanged if they were in the proliferative phase.

The menstrual phase is during the period, and the secretory phase is the last phase of the menstrual cycle and occurs from ovulation until the beginning of the next period.

The proliferative phase occurs just after the period when the body begins producing the hormones needed to initiate ovulation.

The women taking birth control didn't show decreased ACTH levels after the social activities, regardless of where they were in their cycle.

According to Mr. Winterdahl, progesterone levels are very low at this phase of the menstrual cycle, leading to a minimal conversion into the hormone allopregnanolone. He continues by saying, "Since allopregnanolone is important for activating the receptors that regulate the stress response, we don't see a reduction in ACTH levels in women with a natural cycle who have just had their period."

He also notes that women tend to

be more physically active during this phase in their cycles, which could be an adaptation causing stress levels and behavior to synchronize with a woman's cycle. In women taking birth control pills, this stress response is "disconnected" and, therefore, can't adapt to changing situations.

Other Implications for Health

Mr. Winterdahl also notes that not all birth control pills are created equal.

"It's also relevant to point out that birth-control pills aren't just contraceptives. There are different generations of the pill, each with its own chemical structure due to the hormones used, which means the pills have different side-effect profiles. It's therefore crucial that our experiments are reproduced with a larger and more diverse group of test subjects," he said.

The study offers another piece of the complex puzzle involving hormones, stress, and their effect on women's physiology.

"I hope that our research can contribute to improved treatment and prevention of stress-related conditions in women. In addition, the study also contributes to a broader understanding of the interactions between gender and stress hormones," Mr. Winterdahl said.



Birth control pills appeared to negate the stress-reducing effects of social contact, a recent study found.



Okinawan's remain active and engaged throughout their lives.

The Secret of Okinawa's Centenarians

Continued from Page 13

Research has found that consuming sweet potatoes can help control blood sugar levels. A study published in the *Biological and Pharmaceutical Bulletin* in January 2000 demonstrated the remarkable anti-diabetic activity of sweet potatoes. Researchers fed white-skinned sweet potatoes to experimental mice with diabetes

and observed a remarkable improvement in their hyperinsulinemia, with a 60 percent improvement by the sixth week of oral administration.

Fruits and Vegetables

The second characteristic of Okinawan cuisine is the abundance of dark- and yellow-colored vegetables and fruits. These offer a rich source of dietary fiber, which promotes digestive health and nourishes beneficial gut bacteria. In addition to supporting a healthy gut, these foods are particularly nutrient dense and help stabilize emotions, boost the immune system, enhance metabolism, and improve blood circulation, thereby reducing the risks of obesity, diabetes, kidney disease, and neurological disorders.

A study published in *Nutrients* in 2020 found a significant association between consuming fruits and vegetables and mental well-being. Particularly, consuming berries, citrus fruits, and green leafy veg-

Another characteristic of Okinawan culture is the practice of *hara hachi bu*, which means eating only until 80 percent full.

etables may contribute to higher levels of optimism and help prevent depression.

Healthy Fats

The third characteristic of Okinawan cuisine is healthy fats, such as fatty fish, nuts, and legume products, which are abundant in unsaturated fatty acids. Mr. Gyaltsen pointed out that the fats obtained from walnuts, almonds, and cashews provide exceptional brain protection, effectively reducing the risk of dementia and cognitive decline in older adults.

Research has found that the intake of unsaturated fatty acids, DHA and EPA, can contribute to improved memory function in older adults.

Mr. Gyaltsen recommends that older adults incorporate a variety of oils into their diet, including olive, flaxseed, sa-cha inchi, avocado, and walnut. These oils are rich in unsaturated fatty acids such as omega-3, omega-6, and omega-9. They can increase the levels of good cholesterol,

provide anti-inflammatory benefits, and strengthen the immune system. He personally chooses one or two types of oil to consume or use for oil pulling every day, as it not only benefits the brain but also promotes dental health and aids in the lubrication of the digestive system. For individuals with gastrointestinal issues or undergoing chemotherapy, incorporating these oils can enhance their immune recovery capabilities.

Eating in Moderation

Another characteristic of Okinawan culture is the practice of *hara hachi bu*, which means eating only until 80 percent full. This not only helps in managing calorie intake but also contributes to improved sleep quality. Mr. Gyaltsen also emphasized the importance of avoiding food consumption within three hours before bedtime. Whether from the perspective of traditional Chinese medicine, Indian yoga, or Buddhism, overeating

hampers the body's ability to activate its energy reserves.

In fact, intermittent fasting is widely recommended in modern healthy diets due to its ability to induce cellular autophagy, thereby boosting overall immune function. Mr. Gyaltsen himself practices fasting for one to two days per month, as he believes in its positive effects on enhancing the immune system, brain, and overall health.

A study conducted by researchers at Yale University and published in the *Journal of Science* showed that a moderate reduction in food intake can slow the process of physiological decline. The report also references a clinical trial that reveals that a 14 percent decrease in calorie intake over a two-year period among healthy individuals enhances the production of T cells in the thymus.

Social Connection

The final key to longevity is social engagement, and there are many social activities for the elderly in the Okinawan community. KGB84 is a girl band from Okinawa consisting of members with an average age of 84. They're often referred to as the "Idols Closest to Heaven."

Mr. Gyaltsen mentioned that he has encountered many elderly individuals who express a desire to retire. However, retirement life at home often leads to increased dissatisfaction and resentment toward partners, causing discord. He also believes that the purpose of life is to contribute, and when individuals feel that they lack value, they may become disheartened, leading to feelings of loneliness, depression, and anxiety, which in turn accelerate cognitive decline. Okinawans remain active contributors to their community, often working during old age. This increases their sense of purpose and social connection. Increasing social engagement is also crucial for maintaining emotional well-being and a healthy lifestyle.

A longitudinal survey of elderly individuals in California revealed that those who frequently engage in volunteer work have a 63 percent lower mortality rate compared to non-volunteers. Additionally, a study involving more than 300,000 married couples, with follow-up for 33 months, found that individuals who volunteered had a 25 percent lower risk of mortality, but their partners didn't show a similar reduction in mortality rates. This suggests that the relationship between volunteering and mortality risk isn't influenced by family or economic factors but is more likely attributed to the direct impact of volunteer activities.

Zrinka Peters is a freelance writer focusing on health, wellness, and education. She has a bachelor's degree in English literature from Simon Fraser University in British Columbia, 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.

What Might the New Laws Mean for the Future of the Industry?

Ireland's new labeling is reminiscent of legislation that targeted the tobacco industry—and the legal liabilities the industry carried.

The bulk of the legal action taken against the tobacco industry has centered around its failure to warn the public of the known dangers of cigarette smoking.

The first study identifying the correlation between excessive cigarette smoking and lung cancer was published in 1950. The first warning label on cigarette packages was introduced in 1965, but it wasn't until the mid-1980s that the label addressed that cigarette smoking causes cancer.

The first study on the cancer-causing effects of alcohol was published in 1903. The study reported a rise in cancer deaths due to alcohol consumption. In the late 1980s, the International Agency for Research on Cancer named alcohol as a known carcinogen and contributor to cancers of the mouth, pharynx, esophagus, liver, and larynx.

A health warning label on alcohol wasn't required until 1988, and it only cautioned pregnant women and warned

of the risk of driving or operating heavy machinery after drinking.

The World Health Organization declared alcohol a Class I carcinogen in 1990. In 1992, a 35-year review concluded, "With alcohol/beer consumption, the overall conclusion on present evidence is that alcohol, particularly beer consumption, is an etiologic factor for colon and rectal cancer for females and males."

The warning label on alcohol was not amended to incorporate the new research.

A peer-reviewed study published in *Drug and Alcohol Review* in 2018 concluded: "Major international alcohol companies may be misleading their shareholders about the risks of their products. This may leave the industry open to litigation in some countries, as has happened with the tobacco and, more recently, other industries."

Jennifer Sweeney is a New York-Based health reporter. She is a nutritional therapy practitioner and trained health-supportive chef focused on functional nutrition and the power of natural, whole foods. Sweeney serves on the board of directors for Slow Food NYC and is a former board member of the Farm-to-Consumer Foundation.

Ireland to Add Cancer Warnings to Alcoholic Beverages

Will Ireland's move to add warnings spread like tobacco warning and lawsuits did?

By Jennifer Sweeney

Ireland is leading the charge as the first country to mandate health warnings on all alcoholic beverages, and other countries may soon follow suit.

Warning labels aren't new to alcoholic beverages, but the country's comprehensive additions—including cancer and liver disease warnings—are.

Research has vacillated on any potential health benefits of alcohol over the years. Ultimately, the American Cancer Society came forward in 2020 with their recommendation that alcohol is best avoided altogether. With this burgeoning awareness of alcohol's health implications, the future of the industry remains unclear. Will this movement open up the potential for lawsuits as with big tobacco and the subsequent decades-long battles involving billions of dollars?

What You Need to Know About New Labels

The new label rule is slated to go into effect in 2026 and will require all wine, beer, and spirit containers to bear the warnings. The extensive warnings will

cover the health risks associated with alcohol consumption, including the elevated risk of developing certain cancers. The labels will also include calorie count and grams of alcohol. The mandated labels include warnings about consumption during pregnancy and the risk of liver disease caused by alcohol.

The rule is based on the idea that the government has a responsibility to provide the consumer with a full picture of the risks of using a product. Ireland, like many countries, has an excise duty on alcohol, which means the government collects special tax revenue from alcohol sales.

Ireland is the first country in the European Union to include cancer warnings on alcohol products. South Korea implemented similar labeling rules in 2017 requiring manufacturers to choose one of three labels, two of which note the risk of cancer.

Link Between Cancer and Alcohol

While the exact reason why alcohol increases the risk of cancer is not fully understood as of yet, according to the American Cancer Society, there are seven cancers linked to alcohol consump-

tion: mouth, throat, larynx, esophagus, liver, colon and rectum, and breast. There is also reason to believe that a correlation between alcohol and stomach cancer, as well as other cancers, exists.

The rule is based on the idea that the government has a responsibility to provide the consumer with a full picture of the risks of using a product.



▲ Ireland's new label rule will go into effect in 2026 and require all wine, beer, and spirit containers to bear the warnings.

A review published in *Nutrients* in 2021 found that alcohol accounts for 4 percent of all cancers worldwide, causing more than 740,000 deaths in 2020 alone. According to the Centers for Disease Control, when one consumes alcohol, his or her liver breaks it down into a chemical called acetaldehyde, a known carcinogen. Acetaldehyde damages the DNA, causing cells to proliferate and form a tumor.

The higher your exposure to acetaldehyde, the higher your risk of developing cancer.

A study published in the *British Journal of Cancer* in 2014 found that any amount of alcohol consumption was linked to an increased risk of cancer of the oral cavity and pharynx.

For some types of cancer, including breast cancer, even minimal amounts of alcohol raise the risk. According to the *Nutrients* review, 100,000 of the cancer cases in 2020 were due to light and moderate levels of drinking—that is, just one to two drinks per day. Most people are aware of the prominent negative health effects of alcohol, such as liver disease, but not many know that it can cause cancer, and according to some research, awareness of the cancer-causing effects of alcohol is lower in the United States than in other countries. A study published in 2020 in the *Journal of Studies on Alcohol and Drugs* found that cancer warning labels are effective at increasing knowledge on the correlation.

3 HABITS TO PREVENT CHRONIC INFLAMMATION

A growing number of doctors and researchers believe that chronic inflammation is the root cause of nearly all diseases. If it occurs in the brain, it can lead to dementia and Parkinson's disease; if it occurs in the colon, it can result in colorectal cancer; if it occurs in the liver, it can lead to liver cancer. To prevent chronic inflammation, it's crucial to adopt the following three essential lifestyle habits.



1. QUALITY SLEEP

A study published in *Nature Aging* in 2022 revealed that deep sleep plays a vital role in effectively eliminating waste products and toxic proteins from the brain, including amyloid-beta associated with Alzheimer's disease. For adults, the recommended optimal sleep duration is about seven hours. Those who sleep excessively, inadequately, or experience poor sleep quality are more susceptible to cognitive decline and emotional issues.

While sleeping pills can help you fall asleep, they neither improve your sleep overall nor promote deep sleep, which is essential in reducing brain inflammation.



2. ADEQUATE HYDRATION

A study published in *Medicine & Science in Sports & Exercise* in 2018 found that when water deficits exceed 2 percent body mass loss, it can impair cognitive performance, especially attention, executive function, and motor coordination.

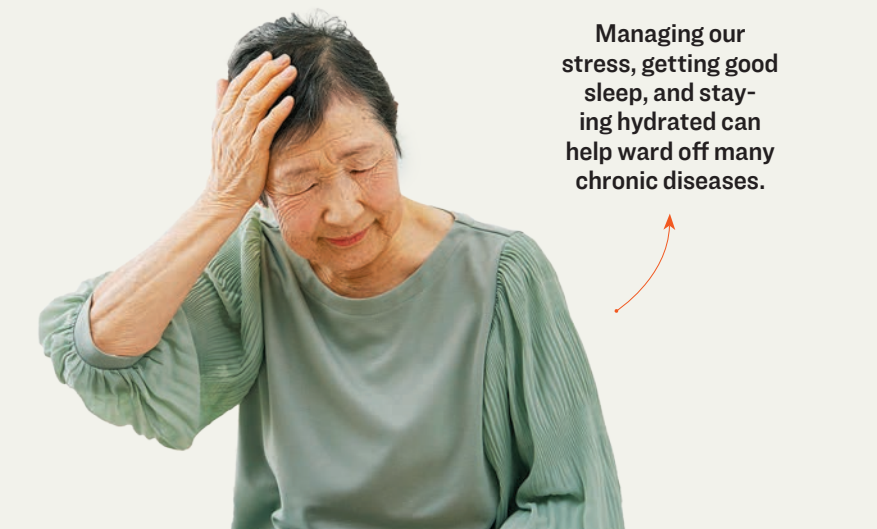
"Water is the best medicine when it comes to disease prevention," Mr. Gyaltsen said.

About 20 percent of the body's blood circulation occurs in the brain, supplying it with oxygen. Maintaining proper hydration levels enhances blood flow, thus preventing impaired circulation in the brain.



3. STRESS MANAGEMENT

Excessive emotional fluctuations and stress can lead to an increased risk of stroke, blood vessel rupture, and high blood pressure. It can also result in brain fog and difficulties in recalling information, posing a hindrance to brain health.



Managing our stress, getting good sleep, and staying hydrated can help ward off many chronic diseases.



▲ While most people know that drinking alcohol can cause liver damage, relatively few know about its strong links to cancer.

WISE HABITS

We're Mostly Trying to Escape This Moment

Enduring the discomfort of daily life takes some practice—but it's worth it

By Leo Babauta

Much of our days, we're trying to escape. In fact, you might call this our primary occupation.

Most people will outright reject that idea, but I know this to be true of myself, and it's been true for so many people I've worked with and known.

Consider how most of us spend our days:

- Doing busywork, messages, emails, and small tasks
- Putting off larger tasks, avoiding the scary stuff
- Scrolling social media, news, and favorite distraction websites
- Watching videos on YouTube, Netflix, etc.
- Playing games
- Eating comfort foods (often while watching a screen)
- Taking a drug of choice: alcohol, nicotine, cannabis, caffeine, etc.
- Listening to music while we do something else (such as working out, walking, driving, showering)

I have no judgment of any of these—they aren't necessarily bad, and I do some of them too. But you might notice what they have in common: They all take us away from whatever is happening in the moment. That's their primary purpose.

We escape in other ways too: complaining, gossiping, over-apologizing, people-pleasing, bragging, showing off, worrying, overthinking, catastrophizing, making ourselves the victim, ruminating

about what happened or what we should have said. These are all ways to get ourselves out of the present moment.

The Cost and Opportunity

So what? Is there anything wrong with this? Of course not—as I said, it's eminently human, though some methods may harm us in ways others do not.



However, when we try to escape the moment, we are limiting ourselves. We don't develop the forbearance to stay in an uncomfortable moment, such as when we are trying to learn something difficult or are dealing with an unpredictable or trying situation.

We also miss the beauty right in front of us, all the wonderful opportunities and experiences happening right now. We can even lose our connection with others.

And this becomes trained—the more we seek to escape, the less capacity we have for facing uncomfortable things in the future. We diminish ourselves.

So the opportunity, then, is to practice not escaping. When we feel uncomfortable, we stay for a little longer. Not to the point of torture, but to the point that's just beyond our comfort zone. We grow our capacity to be with all of life.

And then we miss out on less of life. This is the profound gift of forbearance.

How to Practice Not Escaping

So how do we practice? Some people like to do cold showers or hard workouts—and these are excellent. But we don't have to seek out a new activity; we can just stop escaping from what's already happening.

In my online coaching course, this is the main thing that people are practicing—they are working on changing their habits, finding purpose, and having a meaningful effect on the world. The path to that is to face discomfort without always having to escape.

Some ways we can stop escaping:

Stay off your phone for most of the day. This will be uncomfortable for many—that's OK. Stay with the uncomfortable

feeling. You will uncover what you've been trying to avoid.

Spend time away from your computer. Not distracting yourself, but just sitting and thinking. Or walk around your house or office, just seeing what you can notice.

Stay with a hard task or project for 10 minutes longer than you want to. Notice what comes up internally when you stay longer.

Put off emails and messages until later in the day if you tend to check them first thing. Notice what comes up.

Quit caffeine or alcohol (or whatever favorite substance you have) for a month. See what feelings surface, and let your treat be processing these feelings.

Go food sober for a couple of weeks—that means no intoxicating food. See what thoughts or emotions come up.

Advanced: Notice when you're complaining, making yourself into a victim, taking your anger out on people, beating yourself up, being harsh, fantasizing, etc. See if you can notice the feeling underneath these mental escapes.

When we cut off our escapes, we start to notice the things we don't want to be with. Emotions, feelings about ourselves, things we haven't processed. It's important to be gentle and loving with yourself as you do this.

Get support from others when you need it. And get help from a professional therapist if this feels at all dangerous—it shouldn't get to the level of danger, just medium discomfort. If it's too intense, stop and find someone to help you.

In the end, this isn't about being tough or coercive with ourselves. It's about finding a gentle way to practice opening up to more of life. Where could you start?

◀ When we endure life's uncomfortable moments, we are better able to face future challenges.

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

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